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The effects of export and organizational context on the firm's performance

Yan CASTONGUAY
University of Québec at Rimouski Canada

Abstract

Based on a survey of 120 manufacturing SMEs in the Chaudière-Appalaches region, in the province of Québec in Canada, this study aims to estimate the effects of export and organizational context on the overall performance of the firm. Several characteristics of the firm and its manager have been highlighted to explain the performance of firms, using multiple linear regression models. Statistics showed that export does not have the expected impact on firms' performance. Contrary to expectations, the performance of manufacturing SMEs decreases when exports abroad reach a high level. Moreover, the results showed that several organizational factors related to the characteristics of the firm and its manager influence the firm's overall performance.

Keywords: export, organizational context, firm's performance

1. Introduction

Globalization brings firms to consider business opportunities on international markets. The performance and the development of a small and medium-sized enterprise (SME) are more and more related to strategic options, particularly those with an international vocation (Baird and al., 1994; Coeurderoy, 2013). According to Uppsala's gradual internationalization model, export is one of the first steps of firms' internationalization (Johanson and Vahlne, 1977). Although some firms are born global, the international development of firms is often done by incrementing (Moen, 2002; Jones and al., 2011). According to this school of thought, as a firm acquires experience, it adopts modes of internationalization that are more and more engaged. The analysis of the literature shows that the more competent a firm is, the more international it could be (O'Cass and al., 2003). According to Jones and al. (2011), early internationalization may cause a rapid growth of the firm's performance. A competent firm because of its international experience knows the various components of the environment, and selects the most attractive markets and those which will allow it to perform more. It can thus adapt its strategies to meet the specific needs of the market (Ruzzier and al., 2007). The intensity of a country's exports positively influences economic growth (Usman and al., 2012). However, internationalization has consequences for SMEs with limited resources. The effects of export on the firms' productivity are ambivalent (Wagner, 2007). Some authors have shown positive results as for the effect of exports on productivity (Rodríguez-Rodríguez and al., 2012), while other authors such as Lu and Beamish (2001) and Majocchi and Zuchella (2003) have come to other conclusions, due to other

factors related to the organizational context. Therefore, it is appropriate to estimate not only the effects of export on the performance of SMEs, but also the effects of organizational factors, including the different characteristics of the firm and its manager.

2. Portrait of manufacturing firms' exports

Québec, a province in Canada, widely open to export, ranked 32nd in the goods and services exporting countries in the world (2003). The export of goods and services of Québec firms reached, in 2003, 86.5 billion[1] dollars: 83.2% in the United States, 9.6% in Europe, 4.4% in Asia and Oceania, and 2.8% elsewhere in the world. More than 53% of exporters in 2002 were manufacturing firms. It is worth noting that the volume of exports by Québec firms has remained relatively similar until today. Indeed, exports of goods and services were worth 89.8 billion[2] dollars in 2012, which is close to the 2003 result. However, the portrait of the distribution of sales has greatly changed. The percentage of sales to the United States fell to 68.5% in 2012, while that of Europe, Asia and Oceania, Latin America and Africa increased respectively to 13.5%, 9.8%, 4.6%, and 3.6%. In short, the exports of Québec firms are more diversified than in 2003. In June 2005, year of the survey, there were over 5 696 exporting manufacturing firms in Québec. The Chaudière-Appalaches region had 469 exporting manufacturing firms, including 364 SMEs[3]. This represents 36.5% of the total of this region's manufacturing SMEs.

3. Review of the literature

Considering the level of involvement and the resources required for each stage of internationalization, export is the most common mode of entry. Firms first try to saturate the regional market before adopting an export strategy to continue their growth (St-Pierre and Rinfret, 2000). Lado and al. (2004) and Moen (1999) argue that large firms are more likely to have a higher level of export. It is more common for a large firm to saturate its regional market than a SME. As a result, SMEs do not have the same needs for foreign sales growth as larger firms. However, large firms' business model is not suitable for SMEs (Anderson and Boocock, 2002; Lu and Beamish, 2001). Therefore, it is important to consider organizational factors in order to better assess the effects of export on SMEs' performance. According to St-Pierre and Rinfret (2000), SMEs do not all have the same export potential. It depends in great part on their products or services, and firm size. Moreover, export is not a firm's only way to grow.

3.1. Performance

There are different ways to measure performance. In studies designed to measure the performance of firms, authors frequently use the ratio of the return on assets (Majocchi and Zucchella, 2003; Lu and Beamish, 2001; Ruigrok and Wagner, 2003; Hsu and Boggs, 2003). However, the results of the statistical models using this ratio are non-significant. A second frequently used measurement indicator is the ratio of return on sales. This ratio is also not very significant because it is highly correlated with the ratio of return on assets. Since the use of these two ratios gives similar results, most authors choose to use only one or the other (Majocchi and Zucchella, 2003; Lu and Beamish, 2001). Other measurement indicators are used in the literature. Some indicators have given significant results such as the ratio of the cost of operations on the total sales (Ruigrok and Wagner, 2003), the ratio of return on equity, and the ratio of the profit

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[1] http://collections.banq.qc.ca/ark:/52327/bs59129 Site consulted on September 8th 2015
[2] http://cdefq.org/wp-content/uploads/2013/08/calepin_exterieur.pdf Site consulted on September 8th 2015
[3] www.icriq.com Site consulted on May 31st 2015

margin (Hsu and Boggs, 2003). However, two indicators seem to be more appropriate given the context of manufacturing SMEs and their reluctance to give detailed information on their financial statements (Bagchi-Sen, 1999; Dalli, 1994): sales growth and profit growth. Given that SMEs' primary motivation to export is an increase of sales and profits (Dana and Etemad, 1995), the performance indicators of this study's SMEs are the average growth in percentage of the firm's overall sales over the past three years and the average growth in percentage of the firm's net profits during the same period.

3.2. Export

In the literature, research results on the effects of export on SMEs' performance are not unanimous (Wagner, 2007). The study of St-Pierre and Rinfret (2000) has shown that Québec's exporting manufacturing SMEs have higher returns than those who do not export. These findings corroborate the results of Bagchi-Sen's study (1999), which was conducted among 54 Ontario SMEs, and observed that firms who export more are more efficient. However, Majocchi and Zuchella's study (2003), based on 220 Italian SMEs, was not able to conclude that export has an effect on SMEs' performance. The results of Lu and Beamish (2001) have shown a reverse relationship between the level of export and performance in Japanese SMEs. In other words, the higher the level of the firm's export, the more its profitability decreases. One explanation could be that the impacts of export do not follow a linear relationship with a firm's performance. Martins (2009) argues that export impacts on the performance of firms are higher during the first year of export. Subsequently, these impacts become non-significant. Therefore, it will be important to consider the age of the firm in order to estimate the effect of export. Despite the divergence of the results, export activities do not appear to deteriorate SMEs' local activities (D'Amboise, 1989; Beamish and Munro, 1987). Cavusgil and Zou (1994) argue that the more competent a firm is, the more international this firm can be. Considering the lack of consensus in the literature, it will be important to estimate the difference between export levels. The export level is measured by the percentage of exports on the firm's turnover in the year ending in 2004. This study will therefore test the following hypothesis: *H1: The level of export influences the firm's performance.*

3.3. Characteristics of the firm

Several firms' features are to be considered in order to identify the real effect of the export level. These features are often mentioned as factors explaining the performance of exporting companies such as firm size (Lado and al., 2004), firm age (Bagchi-Sen, 1999), sector of activity (Ogram, 1982), capital structure (Fernández and Nieto, 2005), and technological level (Beamish and Munro, 1987; Coeurderoy, 2013).

3.3.1. Size of firm

The research results of Lado and al. (2004) have established a positive relationship between firm size and the level of export. These results can be explained by the fact that the largest firms possess more resources, allowing more successful international operations. Therefore, the likelihood of becoming an exporter increases with the size of the firm (Moen, 1999). According to Julien (1997), the more a firm grows, better is its profitability. Several authors have used firm size in order to analyze the effect of internationalization on performance (Ruigrok and Wagner, 2003; Hsu and Boggs, 2003; Kamyabi and Devi, 2011). In these studies, firm size has been measured either by the number of employees or by its total assets. The study of Mittelstaedlt and al. (2003) found that 20 employees is the recommended minimal size for a firm to export. The

largest firms can thus better capitalize on economies of scale related to the standardization of their product. The number of employees is a continuous variable and can be used directly. This data is available in the database of the Bank of industrial information of the Industrial Research Centre of Québec (IRCQ)[4] and serves as an indicator of firm size. The following hypothesis will therefore be tested: *H2a: Firm size is positively related to the firm's performance.*

3.3.2. Age of firm

According to the study of Bagchi-Sen (1999) conducted with 54 manufacturing SMEs in the region of Niagara in Ontario, a province in Canada, more than 54.5% of firms that had a high level of export were older than 20 years. These results corroborated several studies which argue that firm age influences the performance of exports and the international activities of small firms (Clark and al., 2006; Anderson and al., 2004). Firm age reflects its experience, a factor that has an impact on overall performance. However, if the performance is measured by sales growth, firm age explains a negative performance (Orser and al., 2000). This result can be explained by the fact that it is easier to increase sales and profits during the first years of existence. Firm age is measured by the year of constitution, also available in the IRCQ database. This variable is continuous and does not need to be transformed. The next hypothesis will be tested: *H2b: Firm age is negatively related to the firm's performance.*

3.3.3. Industry sector

Trade conditions are considered as being one of the main problems of export (Ogram, 1982). Considering that trade conditions differ across industries, the firm's sector of activity has an impact on its performance. Several studies have used the industry sector as a control variable in order to analyze the internationalization and the performance of firms (Fernández and Nieto, 2005; Hsu and Boggs, 2003; Ruigrok and Wagner, 2003). Considering that the performance indicators are based on the firm's results during the last three years, the effect of the industrial sector is represented by the variation of the Gross Domestic Product of the firm's sector of activity of the last three years. The industry sector is identified according to the North American industry classification system. The following hypothesis will be tested: *H2c: The industry sector is positively related to the firm's performance.*

3.3.4. Level of debt

In their study of the internationalization of SMEs, Fernández and Nieto (2005) used the ratio of the level of debt as a predictor of export. Undercapitalization is one of the reasons that explain the low level of export (Joyal, 1996). Ogram (1982) also supports this assertion when he states that one of the main problems concerning export is the acquisition of the necessary funds for the financing of foreign sales. A low debt ratio is a reflection of the uncertainty of a firm's future profitability (Julien, 1997). In addition, there is a reverse relationship between the debt ratio and firm size. According to Julien (1997), the more a firm grows, the more it uses other types of funding than equity alone. In a study that examines the relationship between internationalization and performance, Majocchi and Zucchella (2003) used the capital structure of SMEs as a control variable. In their study, the debt ratio has shown a positive effect on the firm's performance. The effect of the level of debt will be directly tested on the overall performance of the firm. This level of debt has been obtained with a 5-point Likert scale ranging from 1 'very low' to 5 'very high'. The managers had to identify, according to their perception, the level of debt of their firm

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[4] http://www.icriq.com/fr/ Site consulted on September 8th 2015

compared to their sector of activity during the year ending in 2004. The results were then converted into binary variables: 1 'very low' and 2 'low' results have a value of 0 (low debt), while the results of 3 'more or less high' to 5 'very high' have a value of 1 (high debt). The following hypothesis will be tested as well: *H2d: The level of debt is positively related to the firm's performance.*

3.3.5. Level of technology

The technological advantage of the firm is one of the important factors of motivation to export (Pope, 2002). As demonstrated in the study of Beamish and Munro (1987), the level of technology of the supplied product is positively correlated with the level of the firm's exports and the relative profitability of exports. Fernandez and Nieto (2005) argue that firms' ratio of research and development (R & D) expenditures on sales is significantly related to the level of SMEs' exports. During the evaluation of a causal relationship between internationalization and the performance of firms, the level of R & D is one of the control variables commonly used (Lu and Beamish, 2001; Hsu and Boggs, 2003; Majocchi and Zucchella, 2003). According to Bagchi-Sen (1999), firms which have a higher level of export improve their manufacturing methods more and are more open to introducing new technologies. A high level of technology used in production is an indicator of the competitive advantage of the firm which is reflected on the firm's overall performance. Considering the diversity of SMEs' production methods, the level of technology has been identified, according to the perception of managers, with a 5-point Likert scale ranging from 1 'very low' to 5 'very high'. Subsequently, the results are converted into binary variables: 1 'very low' to 3 'more or less high' results have the value of 0 (low-tech) and 4 'high' and 5 'very high' results are set to 1 (high-tech). The next hypothesis will be tested: *H2e: The level of technology is positively related to the firm's performance.*

3.4. Characteristics of the manager

Research in recent years has been mostly interested in managerial factors determining the success of firms' exports (Couto and al., 2006; Ruzzier and al., 2007; Van Biesebroeck and al., 2011; Jones and al., 2011). According to the study by Katsikeas (1996), the presence of a manager who promotes export was proved to be the most important motivator to export. Pope (2002) argues that the manager's desire to sell abroad is a factor that motivates the firm's export activities. Therefore, factors related to the characteristics of the manager such as age, level of education, professional experience in relation to international activities as well as experience abroad will be estimated in this study.

3.4.1. Age of manager

The age of the manager is significantly linked with the fact that some firms export or not (Leonidou and al., 1998). This relationship indicates that younger managers tend to be more open to internationalization than their older counterparts. Young managers play a more active role in firms' export activities. The age of the manager is inversely related to the rate of foreign sales (Anderson and Boocock, 2002). The manager's year of birth is used to determine the manager's age. This value is a continuous variable and doesn't need processing to be usable in the regression model. The next hypothesis will be tested: *H3a: The manager's age is negatively related to the firm's performance.*

3.4.2. Level of education

A high level of education is essential for managers interested in the success of their firm's exports (Léonidou and al., 1998). These authors argue that the more educated decision-makers are, the more open they are to international activities. Moreover, the study of Soriano and Castrogiovanni (2012) shows that the general knowledge of management positively influences firms' productivity and profitability. It is therefore reasonable to believe that a high level of education can help managers make better choices, which will be reflected on the overall performance of firms. The last year of schooling completed by the manager determines his level of education. This variable was measured with a four-point scale. The results are transformed into binary variables: all studies outside of university have a value of 0 (no university), while those at the university level are set to 1 (university). The following hypothesis will be tested: *H3b: The manager's level of education is positively related to the firm's performance.*

3.4.3. Professional experience of international activities

The manager's experience linked with export significantly affects a firm's exports (Lado and al., 2004; Coeurderoy, 2013). The manager's professional experience is also strongly correlated with the level of a firm's exports (Leonidou and al., 1998). The manager's experience includes his previous professional experience, his technical expertise, and his knowledge of the product. This relationship is even truer if the experience of the manager is linked to international activities that required the participation in international organizations, multinational corporations or military service. The professional experience of international activities influences not only exports, but also the profitability of foreign transactions and thus the overall performance of the firm. The experience of international activities is measured by the manager's number of years of professional experience in relation to the international activities. This variable was measured using a five-point scale. The results are converted into binary variables. Answers 'No' have the value of 0 (no international experience) and other answers are set to 1 (international experience). The next hypothesis will be tested: *H3c: The manager's professional experience of international activities is positively related to the firm's performance.*

3.4.4. Foreign experience

Travel and time spent abroad are strongly correlated with the level of exports and the internationalization of the firm (Leonidou and al., 1998; Ruzzier and al., 2007). Knowledge of the characteristics of international markets and foreign cultures enables better decisions facing the internationalization of firms and improves their overall performance. Foreign experience is represented by the number of years the manager has spent abroad. This variable was measured with a four-point scale. The results are transformed into binary variables. Considering that several people have made at least one trip abroad, the answers 'No' and 'less than 2 years' have a value of 0 (low experience abroad), while other responses have a value of 1 (high experience abroad). The following hypothesis will be tested: *H3d: The manager's foreign experience is positively related to the firm's performance.*

4. Research methodology

According to the database of IRCQ on May 31st 2005, there is a total population of 997 manufacturing SMEs with a turnover of less than $25 million dollars and less than 500 employees in the Chaudière-Appalaches region, in the province of Québec, in Canada. There are 364 SMEs from this population which realize export activities. A random sample of 150 non-exporting manufacturing SMEs and all of the 364 exporting manufacturing SMEs of the targeted

population were surveyed. Surveys were sent on June 6th 2005 to 514 SMEs' managers. Within 6 weeks, 141 managers had followed-up. Considering the criteria defined previously, 11 questionnaires had to be excluded from the sample. Five firms had existed for less than 3 years, two firms had a turnover of more than 25 million dollars, one firm was a services firm, one firm had a manager unable to complete the survey, and two firms did not have the correct address in the IRCQ database. Considering these facts, the surveyed population was reduced to 503 manufacturing SMEs. The final sample therefore includes 124 respondents out of a total of 503 companies, which represents a response rate of 24.7%. In order to measure the causal relationship of the independent variables on the performance of the manufacturing SMEs, this study used linear regression models estimated by the ordinary least squares method.

5. Analysis of data

In order to have a better accuracy in the statistical analysis of the data, a check of the atypical values was made by converting the retained continuous and ordinal variables to the standard z-score. All the data from the dependent and independent variables were verified. To be valid and not be part of the extreme values, the value result of the standardized variables must give a standardized z-score between -3.29 and 3.29 (Field, 2009). An observation beyond these markers is considered extreme with a P-value lower than 0.001 and is excluded from the statistical analyses. Four extreme observations were excluded from the statistical analyses.

To ensure the validity of the ordinary least squares method, the data from the different dependent and independent variables must follow a normal distribution. Variables with no normal distribution must undergo a binary or logarithmic transformation (Field, 2009). The data of the dependent variables (Sales and Profits) and of the independent variables (V2d level of debt, V2e level of technology, V3a age of manager, V3b level of education, V3c experience in international activities, and V3d foreign experience) follow a normal distribution. The export variable that represents the level of the firm's exports is a continuous variable between 0% and 100%. It is measured by the percentage of turnover for exports in the year ending in 2004. However, there is no normal distribution of the data obtained, which explains the transformation of this variable. One of the possibilities was to separate the data into two groups: the exporting SMEs and the non-exporting SMEs. However, in order to have more information on the effect of export performance, the export variable was divided into three groups, presented in the following table.

Table 1 *Groups of SMEs according to the level of export*

Groups of SMEs	N	Min	Max	Average	Standard deviation
Group 1: Non-exporter Level of export less than 5%	48	0.000	0.300	0.005438	0.0102436
Group 2: Low exporter Level of export from 5% to 20%	31	0.050	0.160	0.102032	0.0407353
Group 3: High exporter Level of export 20% and more	41	0.980	0.980	0.556098	0.2340393
Total	120	0.000	0.980	0.218533	0.2828136

Subsequently, two new (binary) variables were created:
V1a low export (binary): groups 1 & 3 = 0 and group 2 = 1.
V1b high export (binary): groups 1 & 2 = 0 and group 3 = 1.

The variables size of firm and age of firm underwent a logarithmic transformation to be normally distributed. The industry sector variable does not have a normal distribution and had to be transformed. Considering the negative values of this variable, a logarithmic transformation cannot be used, which explains the conversion into a binary variable. The average of the industry sector variable (2.0719%) was used to create this new binary variable: data less than 2.0719% = 0 and data above 2.0719% = 1. The Pearson correlation coefficient (0,608) of the dependent variables 'Sales' and 'Profit' was also verified. This result demonstrates that these two measures of performance are only moderately correlated with each other and that they can be used as separate performance indicators. The estimation of the two models explaining performance, presented in table 2, was obtained from the ordinary least squares method. First, the results of the models (Equations 1 & 2) are interpreted together. The signification of each model is checked using Fisher's test. Subsequently, the explanatory power of the model as a whole is interpreted by using the adjusted multiple determination coefficient (R^2 adjusted). Finally, the explanatory power of each of the independent variables will be used to confirm the hypotheses.

Equation 1: Sales growth = $\beta_0 + \beta_{1a}V1a + \beta_{1b}V1b + \beta_{2a}V2a + \beta_{2b}V2b + \beta_{2c}V2c + \beta_{2d}V2d + \beta_{2e}V2e + \beta_{3a}V3a + \beta_{3b}V3b + \beta_{3c}V3c + \beta_{3d}V3d$

Equation 2: Profits growth = $\beta_0 + \beta_{1a}V1a + \beta_{1b}V1b + \beta_{2a}V2a + \beta_{2b}V2b + \beta_{2c}V2c + \beta_{2d}V2d + \beta_{2e}V2e + \beta_{3a}V3a + \beta_{3b}V3b + \beta_{3c}V3c + \beta_{3d}V3d$

Where β_i (i = 0... 3d) are coefficients.

Table 2 *Linear regression models*

Explanatory variables	Sales growth		Profits growth	
	$\square\square^{a}$	Significance	$\square\square^{a}$	Significance
(constant)	0.265	0.000 ***	0.204	0.002 ***
V1a Low export	-0.027	0.181	-0.029	0.158
V1b High export	-0.039	0.092 *	-0.045	0.058 *
V2a Size of firm [b]	0.007	0.222	0.002	0.417
V2b Age of firm [b]	-0.062	0.001 ***	-0.041	0.013 **
V2c Industry sector	0.041	0.034 **	0.019	0.194
V2d Level of debt	0.032	0.070 *	-0.001	0.472
V2e Level of technology	0.039	0.058 *	-0.009	0.359
V3a Age of manager	-0.002	0.068 *	-0.001	0.129
V3b Level of education	-0.007	0.388	-0.039	0.047 **
V3c Experience in international activities	0.038	0.087 *	0.061	0.013 **
V3d Foreign experience	0.069	0.008 ***	0.010	0.354
R^2 adjusted	0.176		0.060	
F	3.309		1.695	
Degree of freedom	11		11	
Significance	0.000 ***		0.042 **	
N	120		120	

a. $\square$ Unstandardized coefficients.

b. Logarithmic transformation.

*** P-value < 0.01; ** P-value < 0.05 ; * P-value < 0.1.

Fisher's test measures the significance of the whole regression model. This test verifies the null hypothesis that the independent variables have no impact on the dependent variable. Therefore, the alternative hypothesis is that there is at least one independent variable that explains the dependent variable. The results of the two regression models are: Sales growth model: F = 3.309, significant P-value < 0.01; Profits growth model: F = 1.695, significant P-value < 0.05. The explanatory effect of the independent variables in the regression model (Sales growth) is 3.309 times more important than the effect of the independent variables that remains unexplained, with a P-value lower than 1%. Although the result of Fisher's test on the regression model (Profits growth) is low (F = 1.695 with a P-value lower than 5%), it remains above 1. Therefore, the null hypothesis is also rejected.

The coefficient of adjusted determination (R^2 adjusted) of the sales growth model (17.6%) is higher than the profits growth model (6%). Causal studies on the performance of the firms identified in the literature had varied coefficients of adjusted determination. According to the dependent variable that was used, the size and origin of the surveyed firms, the results of the regressions in similar studies gave adjusted coefficients of determination ranging from 1.9% to 36.2% (Majocchi and Zucchella, 2003; Lu and Beamish, 2001; Ruigrok and Wagner, 2003; Hsu and Boggs, 2003).

6. Results and discussion

The results of the estimation by the ordinary least squares method allow the testing of the hypotheses by providing the level of significance and the sign of the coefficients attached to each of the variables.

Hypothesis 1: The level of export influences the firm's performance.

In order to have a better accuracy of the effect of the export level on the firm's performance, this study used two variables: V1a Low export and V1b High export. According to the results of the regression models, firms' low level of export (export between 5% and 20% of the turnover) does not explain the sales growth, nor the profits growth. In regards to SMEs with an export level greater than 20% of the turnover (V1b High export), the coefficient of this variable is significant with a P-value lower than 10%, but with a negative coefficient in both models. These results mean that an export level higher than 20% of the turnover for manufacturing SMEs in the Chaudière-Appalaches region causes a decrease in firms' performance in terms of sales growth and profits growth. Hypothesis 1 is therefore supported. These findings are consistent with the study of Lu and Beamish (2001), which showed that the export level of Japanese SMEs has a negative effect on performance, as measured by the return on the firm's assets. Without demonstrating a causal relationship, the results of Poisson's study (2001) showed a negative correlation between export and the performance of Canadian manufacturing SMEs. Performance indicators used by Poisson (2001) are the same as those in this study, sales growth and profits growth.

Considering that the performance measurement indicators used in this study correspond to the two main motivations for the sample firms to export (sales growth and profits growth), it was expected that the level of export have a positive effect on performance. The export level thus does not have the expected effect for manufacturing SMEs in the Chaudière-Appalaches region. However, the performance indicators used in this study cover all the firm's activities and do not distinguish between performance linked to exports and that linked to local activities. It would be

interesting to check if the increase of export is done at the expense of the performance of local activities. In addition, the investment in energy and the necessary resources for SMEs to have an export level of more than 20% may explain the decrease in the overall performance of the firm. The benefits from a high level of export are possibly reflected by factors other than the sales growth and the profits growth. The increase in the level of exports can be part of various strategies. For example, a decrease in the dependence on the local market or a better use of the production capacity decreasing units' cost can be the priority for a firm that has already relatively reached the desired turnover or profit. This research shows that the main hypothesis of export level influences firm performance.

Hypothesis 2a: Firm size is positively related to the firm's performance.

Unlike several studies (Hsu and Boggs, 2003; Kamyabi and Devi, 2011; Ruigrok and Wagner, 2003) which used firm size as a control variable in order to analyze the firm's performance, the number of employees in this study does not explain the firm's performance. The choice of the dependent variables (sales growth and profits growth), different from the one mentioned in the previous studies, may explain why their results do not echo those in this study. Hypothesis 2a is therefore not supported. Firm size in the manufacturing SMEs of the Chaudière-Appalaches region does not explain their performance, possibly due to the fact that this study already limits the size of the firms surveyed to those with a turnover of less than 25 million dollars.

Hypothesis 2b: Firm age is negatively related to the firm's performance.

Firm age is negatively related to its performance with a P-value lower than 1% in the sales growth regression model and with a P-value lower than 5% in the profits growth regression model. Hypothesis 2b is thus supported. The results show that the older the manufacturing SMEs are, the more sales growth and profits growth decrease. Considering that start-ups rather focus on their growth than on other strategies, this may explain the negative relationship between the age of the manufacturing SMEs in the Chaudière-Appalaches region and their performance.

Hypothesis 2c: The industry sector is positively related to the firm's performance.

The industry sector explains the sales growth with a P-value lower than 5%. The verification of this hypothesis corroborates studies by Ruigrok and Wagner (2003) and Hsu and Boggs (2003), who used the industry sector as control variable to analyze the performance of firms. Hypothesis 2c is thus supported only by the sales growth model. The industry sector of manufacturing SMEs in the Chaudière-Appalaches region positively explains sales growth, but does not explain profits growth.

Hypothesis 2d: The level of debt is positively related to the firm's performance.

Only the sales growth model argues that there is a causal relationship between the level of debt and the performance of a firm with a P-value lower than 10%. Although the study of Majocchi and Zucchella (2003) shows that the debt ratio has a positive effect on the ratio of return on assets, the level of debt does not explain the profits growth. Hypothesis 2d is only supported by the sales growth regression model. For the manufacturing SMEs of this sample, a high level of debt allows a better sales growth. However, considering that the cost of borrowing increases with the risk perceived by the financial institution, a high level of debt generates additional interest costs, resulting in a decrease in profits. This may explain that this hypothesis is not supported by the model using the profits growth.

Hypothesis 2e: The level of technology is positively related to the firm's performance.
The level of technology explains sales growth with a P-value lower than 10%. In the other regression model, this relationship is not supported by a sufficient level of significance. Although several authors (Lu and Beamish, 2001; Hsu and Boggs, 2003; Majocchi and Zucchella, 2003) have established a causal relationship between the level of R&D and performance, only the sales growth is explained by the level of technology in production for manufacturing SMEs in the Chaudière-Appalaches region. The fact that this hypothesis is not supported in the profits growth model can be explained by two factors. First, Fisher's test on the regression model of profits growth is relatively low (F = 1.695 with a P-value lower than 5%). Then, the measurement indicators of the effect of technology on performance of this study are not the same as those of the various authors. The majority of the authors cited in the literature review used the level of expenditures in R&D rather than the level of technology in production. The difference between the measurement indicators may explain why the results are not similar even if the level of technology in production, unlike the level of spending on R&D, does not directly affect the firm's net profits. It must be noted that firms which have a better financial situation are likely to increase their R&D expenditures. It is in this context that the level of technology in production was preferred to the level of expenditures in R&D, given that this factor also includes the competitive advantage of the firm.

Hypothesis 3a: The manager's age is negatively related to the firm's performance.
The manager's age negatively influences sales growth with a P-value lower than 10%. However, in the profits growth model, the manager's age does not explain the firm's performance. Hypothesis 3a is therefore supported by the first regression model. In this study based on the Chaudière-Appalaches region's manufacturing SMEs, younger managers have a better sales growth than older managers. Even if the manager's age represents the summation of his past experiences and that this suggests that an older manager will better steer clear of threats than a younger manager, and that the older manager will secure an overall better firm performance, the results of this study are consistent with those of Anderson and Boocock (2002) and Leonidou and al. (1998). These authors argue that the manager's age is inversely related to the percentage of the firm's foreign sales. Few studies have analyzed these contradictions that deserve to be researched in-depth.

Hypothesis 3b: The manager's level of education is positively related to the firm's performance.
Unlike the formulated hypothesis, the level of education negatively explains the profits growth model with a P-value lower than 5%. With respect to the other regression model of sales growth, the manager's level of education does not explain a firm's performance. This hypothesis is thus not supported. In the profits growth regression model, a manager with a high level of education would explain the decrease in firm performance.

Hypothesis 3c: The manager's professional experience in international activities is positively related to the firm's performance.
The results of the two regression models support this hypothesis. The manager's professional experience in international activities of manufacturing SMEs in the Chaudière-Appalaches region explains the firm's performance. These results corroborate those of Soriano and Castrogiovanni (2012) which showed that productivity is positively influenced by the manager's experience. It

likely allows the manager to make better decisions, offering the firm a superior overall performance.

Hypothesis 3d: The manager's foreign experience is positively related to the firm's performance.

The sales growth regression model supports hypothesis 3d with a P-value lower than 1%. The manager's foreign experience explains the sales growth of manufacturing SMEs in the Chaudière-Appalaches region. However, this experience does not explain profits growth. According to hypotheses 3c and 3d, the manager's professional experience in international activities, as well as his experience abroad, allow him to make better decisions, which is reflected on the firm's overall performance.

7. Limitations of the study

This research does not assess the impact of the export level on the performance in local activities. Firms that have a high level of export have possibly saturated the local market, which is not taken into account in this study. In addition, this research ignores the impact of export on the development of new markets with strong potential. The strategic motivations are not evaluated in this study. Despite these limitations, the sample of 120 manufacturing SMEs is representative of the population of firms surveyed and reflects the reality of the Chaudière-Appalaches region.

8. Conclusion

This study has demonstrated that the level of the firm's export influences its performance. However, contrary to expectations, this study revealed that a high level of export has a negative effect on the performance of manufacturing SMEs. Statistical results argue that several characteristics of the manager and of the firm have an influence on one or the other of the two performance indicators. The industry sector, the level of debt and the level of technology in production, as well as the manager's experience in international activities and his experience abroad have been identified as factors positively explaining the firm's performance. In addition, firm age and the manager's age are two factors that showed a reverse relationship between these factors and the firm's performance. Even if numerous studies have shown that some of these factors influence SMEs' growth of exports, this international growth is not necessarily made at the expense of the growth of the local market and thus of the overall performance of the firm. SMEs often lack information and resources to successfully carry out their export strategy. Limited resources place them in a conflictual situation. They must invest, aiming for long term profits, while facing financial obligations in the short term (Anderson and Boocock, 2002). There is a significant time lag between the sales and the profits made abroad, compared to the local market, mainly at the beginning of the firm's export activities. The additional delays for delivery and recovery of receivables abroad require more liquidities than for the local market. It would be interesting, in future research, to analyze the effect of export on the firm's overall performance, according to local and foreign activities.

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