Factors that have a bearing on the export performance of SMEs: an empirical application


Abstract

In this paper we present the methodology and results of a study applied to a group of Costa Rican companies, situated in Cartago province, which have been listed by the Costa Rican Ministry of Economy, Trade and Industry as small and medium sized companies according to the country's parameters. Conditions that make up the contemporary global environment suggest the presence of a decentralizing effect that operates through new technologies, which give small and medium size companies the ability to improve their productivity levels and absorb employment, as well as penetrate external markets. New technologies in the information field have acquired a growing importance and have had an important impact on consumer demand for personalised products that are typical of these companies. The appearance of new products and production techniques in important sectors of industry has also displaced existing firms, in turn creating new spaces for small and medium size industries to operate. SMEs have occupied part of this space and the use of business strategies in the field of innovation have been an important mechanism to improve their efficiency and stay in the global markets.

In this paper we consider a set of hypotheses related to four categories of factors: management skills, marketing strategies, financial factors and a

José Martínez Villavicencio
Tecnológico de Costa Rica
generic category called other factors. For a better backup we define all aspects related to the research methodology, considering factors such as the sampling frame, the methods used for collecting information, the information unit, the type of research and the questionnaire. We also mention elements associated to population, the research unit, type of research and the tabulation procedure and analysis of information. Later we deal with the results obtained when applying the research methodology considering tools such as frequency distributions, reliability studies, variance analysis and factor analysis.

Key words: Business internationalisation, exporting SMEs.

JEL Codes: M16.
Nature of the study
Costa Rica has signed free trade agreements with different countries such as Mexico, Chile, Dominican Republic, Panama and Nicaragua, and recently the Costa Ricans have approved a free trade agreement with the United States of America (CAFTA) through a referendum. Under the current Government’s strategy framework the stimulus to develop exporting activity represents a very important role and small and medium size companies are already discovering that international markets could represent an opportunity to increase their operations, which would favour our country’s economic growth.

In a first research study we reviewed literature and were able to find a large group of elements that according to different authors stimulate or limit the development of export activities. For the purposes of this research, all findings were classified into four major factors, which are understood in this research in the following way:

a) Management Skills: these group together characteristics related directly with procedures of a managerial nature and the cultural attitude that companies have relating to export.

b) Marketing Strategies: we included all marketing and planning activities, and also considered information relating to markets and consumers and the possibility of being able to gain access to compete abroad.

c) Financial Conditions: we classified all those elements related to the variables of a quantitative nature such as obtaining resources, costs and prices.

d) Others: we included all elements that due to their nature could not be classified in the previous sections.
Table 1. Factors that have a bearing on the export performance of SMEs

<table>
<thead>
<tr>
<th>MANAGEMENT SKILLS</th>
<th>MARKETING STRATEGIES</th>
<th>FINANCIAL CONDITIONS</th>
<th>OTHERS</th>
</tr>
</thead>
</table>

Source: Compiled by the author, based on the literature review of the first research work.

Posed Hypotheses

As a product of the results found in the first research work we define the following hypotheses, which we want to check in the Costa Rican market.

**H1: Management skills have a positive bearing on the export performance of small and medium sized companies.**
H2: Marketing strategies have a positive bearing on the export performance of small and medium sized companies.

H3: Financial factors have a positive bearing on the export performance of small and medium sized companies.

H4: As well as management skills, marketing strategies and funding there are other relevant factors that have a positive bearing on the export performance of small and medium sized companies.

Figure 1. Hypothesis design

We set a questionnaire to a representative group of Costa Rican small and medium sized companies in the province of Cartago so as to process data and assess previous hypotheses using Spss tools.

Aims of the Research.
Based on the information found in the first bibliographical research work, this paper seeks the following objectives
a. General Objective
To determine the factors called management skills, marketing strategies, financial conditions and other factors that have a positive bearing or limit export performance of small and medium sized companies as at September 2006 in the province of Cartago, Costa Rica.

b. Specific Objectives
– To point out in detail the management skills which have a positive bearing on the export performance of SMEs.
– To analyse the marketing variables that have a positive bearing on the export performance of SMEs.
– To identify the financial nature that has a positive bearing on the export performance of SMEs.

To determine the profile of a small and medium sized Costa Rican export company from the province of Cartago taking into account for this: location data, export data and general data of each of them

Research methodology
Here we indicate all the details associated to the methodology applied to obtain data and undertake the associated conclusions.

Research Variables
This study is an exploratory research which allows us to familiarise ourselves with the problem situation, identify the most important variables, recognise other courses of action and obtain relatively quickly ideas and knowledge in a situation where both are lacking.

To determine the sampling frame we used the register for companies described as small or medium sized issued by PROCOMER and MEIC; a questionnaire was prepared and businessmen were brought together at a seminar on marketing for exporters to obtain data. It was also sent via Internet and they were phoned. The businessmen had the tool on their screen and would give the data to the survey takers. The person in charge of exports replied and the instrument had 17 questions grouped into six sections.
Statistical Details
The research population was defined as all small and medium sized Costa Rican export companies based in the province of Cartago as at September 2006. The study unit was defined as a small or medium sized Costa Rican export company based in Cartago as at September 2006, registered at PROCOMER and MEIC. The company’s general manager, export manager and marketing manager or the person in charge of the export process were considered as the unit of information. The total number of companies in Cartago province was 134, and from these 57 were chosen to implement the study.

A probability sampling called “Systematic sampling with replacement” was used. First a random number was chosen between 1 and 50; we would later select that individual and each K-th element on the list.

Research results
Various qualitative and quantitative activities were carried out to obtain the necessary information that allowed the assessment of the hypotheses posed in the study, such as frequency distributions, reliability analysis and a factorial study. We present the most relevant findings and analysis.

Consistency of the items proposed
It is important to establish whether the items considered in each of the general variables are consistent with the aim of using them as a reference when we conclude on positive or negative incidence in the export development of the SMEs studied. The consistency refers to the clarity with which the different items measure the nature of the variable. To get a better understanding we seek to demonstrate if all the items in the variable management skills are duly related to this concept, that is, if they are really skills that affect SMEs.

The alpha coefficient was used to establish consistency between the items of the three variables defined in the study: Management skills, Marketing strategies and Financial conditions.
Management Skills
The scale for management skills was made up by 12 items. The reliability results in SPSS indicate that, after carrying out deletions for an Alpha of 0.8508 we were able to detect the following reliable items:

Table 2. Reliable Factors for Management Skills

<table>
<thead>
<tr>
<th>RELIABLE FACTORS</th>
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</thead>
<tbody>
<tr>
<td>A lot of interest in exporting.</td>
</tr>
<tr>
<td>Active manager attitude.</td>
</tr>
<tr>
<td>Attitude to risk expecting guarantees abroad from export success.</td>
</tr>
<tr>
<td>Extensive understanding in international business.</td>
</tr>
<tr>
<td>Understanding of international business practices.</td>
</tr>
<tr>
<td>Excessive interest in the development of export processes.</td>
</tr>
</tbody>
</table>

Source: Compiled by the author based on a statistical study

In practical terms we understand that this set of items are those that really represent the management skills variable.

Marketing strategy
The scale for the marketing strategy is made up from 16 items, obtaining an Alpha of 0.8479 and establishing the following items as the most reliable:

Table 3. Reliable Factors in Marketing Strategy

<table>
<thead>
<tr>
<th>RELIABLE FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct decision about opportunities abroad.</td>
</tr>
<tr>
<td>Adequate representation in foreign markets.</td>
</tr>
<tr>
<td>Clear location of the distributors and efficient selection.</td>
</tr>
<tr>
<td>Insufficient information about the markets.</td>
</tr>
<tr>
<td>Appropriate product promotion.</td>
</tr>
<tr>
<td>Excellence in customer service.</td>
</tr>
<tr>
<td>Extensive database of potential clients.</td>
</tr>
</tbody>
</table>

Source: Compiled by the author based on a statistical study
We must then understand that the previous items are those that best represent the variable of marketing strategies.

Financial Conditions
In the case of financial conditions we considered a total of 14 items, which had a reliability study applied to them, finding an Alpha of 0.7684. However the reference Alpha is less than the 75% recommended in literature so this scale must be reassessed. The items maintained are the following:

Table 4. Reliable Factors in Financial Conditions

<table>
<thead>
<tr>
<th>RELIABLE FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient funding.</td>
</tr>
<tr>
<td>Ease in obtaining funds to start exporting.</td>
</tr>
<tr>
<td>Low transport and distribution costs.</td>
</tr>
<tr>
<td>Problems in matching prices with the competition.</td>
</tr>
<tr>
<td>Ease in guaranteeing credit to the buyers.</td>
</tr>
<tr>
<td>Great ability to control prices due to market power.</td>
</tr>
<tr>
<td>Impossibility of identifying opportunities through lack of investment resources.</td>
</tr>
<tr>
<td>Lack of funding for exports.</td>
</tr>
<tr>
<td>Excess of funding for productive expansion.</td>
</tr>
<tr>
<td>Impossibility of compensating disadvantages with a lower price.</td>
</tr>
<tr>
<td>Low office costs</td>
</tr>
</tbody>
</table>

Source: Compiled by the author based on a statistical study

These are then the items for the financial conditions of greatest statistical significance on the studied variable.

Variance analysis for the sector factor
We considered companies that belonged to different sectors in this study. We wanted to identify whether there was any difference between the responses which could make us doubt on the congruence and precision of the variables. A variance analysis was carried out to determine if there is a difference in the behaviour of the averages. The sectors commented on are: Industrial, Commercial, Service, Agricultural and Agribusiness.
Management Skills
We carried out an analysis for all the variables of the scales; in the management skill scale we saw that homoscedasticity, which is a measure to guarantee that there is no difference between the responses by sector, a fundamental assumption of ANOVA is complied with for all the reliable variables in the scale.

In Levene’s statistics, there were no significances under 0.01 which allowed us to accept the null hypothesis that the variances between the groups were the same, understanding that the responses in the different sectors were equal. Therefore the responses tended to be more believable as there were no differences reflected that could cause doubt on the clarity of the responses.

Market Strategies
For the marketing strategy scale the Levene test indicated that at a 1% confidence level the OCHOA item (Sufficient information in the markets) rejected the null hypothesis that the variables between groups were equal so they should be adjusted in a later analysis.

In accordance with the ANOVA study for the items that do not require adjustment, we found that the null hypothesis accepted that group averages for the sector factor were equal in all of them.

Financial Conditions
The Levene test for the set of reliable items associated to financial conditions showed that again only the NUEVEB (Excess of funding for productive expansion) item gave such a low probability for us to make an error in rejecting the null hypothesis (0.009) that we must reject the possibility that the variances were equal and apply a later change to the variable after applying ANOVA.

Composition of the variables
Factors
The bivariate correlation analysis reveals that certain items are strongly associated with each other, so as to reduce data to significant sizes that
could be used as factors in later analyses we applied main components to explore the dimensionality of the factors that have a bearing on SME export performance.

The aim of using this technique was to determine the least possible number of dimensions that represent the maximum proportion of the total variance of the data; with this aim we statistically defined a set of factors that are illustrated below:

**Figure 2. Factorial Structures of Management Skills**

Source: Compiled by the author, based on the items of the first research work.
We considered all the items assessed under the name of management skills and they were progressively dismissed with a base in the matrix of correlations and the values presented by the sample’s adequacy test (KMO). Under this scheme we obtained three identified factors such as: international commitment, lack of executive skills and commitment to the local market as shown in Figure 2, related to the items whose factorial burden allow their association to the factor.

For the case of marketing strategies we correlated all the associated items and defined as factors: effective strategy inside the destination country and relationship strategy with the client.

Figure 3. Factorial Structure of Marketing Strategies

Source: Compiled by the author, based on the items of the first research work.
For the set of items related to financial conditions studied in the research, we defined the following factors: disadvantages in financial position, credit to clients and benefits in costs.

Figure 4. Factorial Structure of Financial Conditions

Source: Compiled by the author, based on the items of the first research work.

In the case of the “others” category we determined the factors to assess would be: Procomer Governmental Restrictions, limitations of logistics and technology.
The factors were selected with eigenvalue criteria in such a way that each factor could at least explain the variance of a variable (eigenvalues greater or equal to 1). To ensure the significance of the factorial analysis we have extracted factors that explain at least 60% of the total variance. The corresponding sedimentation graphics were also analysed and there was consistency with the previous results.

To interpret the factors we used the matrix rotated with the same, with a varimix procedure obtaining factorial loads greater than 70% that were associated to each factor in the majority of cases. The communalities obtained for the variables were high and allowed us to ensure the repre-
sentativeness of the item variances in solving the selected factors. The interpretation of the factors obeyed a criteria based on the literature consulted.

Hypothesis tests
Once the corresponding factors had been established we proceeded to prepare the different hypothesis tests associated to the research interests, by developing tests to contrast the data with the economic sectors and the size of the company according to the number of employees. We applied the following tests related to the respective studies:

a. Contrast with an economic sector.
For the contrast with an economic sector, we hoped to assess the behaviour of the sectors to which the companies belonged to: agricultural, industrial, commerce, services and agribusiness. We applied the f statistic for the ANOVA study which resulted in the following significances.

Table 5. F Statistic to contrast the economic sector

<table>
<thead>
<tr>
<th>DEPENDENT VARIABLES</th>
<th>F-STATISTIC</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>International commitment</td>
<td>1.53</td>
<td>0.22</td>
</tr>
<tr>
<td>Lack of executive skills</td>
<td>1.66</td>
<td>0.19</td>
</tr>
<tr>
<td>Commitment to the local market</td>
<td>3.54</td>
<td>0.02*</td>
</tr>
<tr>
<td>Effective strategy in the destination country</td>
<td>2.57</td>
<td>0.06</td>
</tr>
<tr>
<td>Strategy in the relation with the client</td>
<td>0.95</td>
<td>0.42</td>
</tr>
<tr>
<td>Disadvantages in the financial position</td>
<td>2.26</td>
<td>0.09</td>
</tr>
<tr>
<td>Credit to clients</td>
<td>1.85</td>
<td>0.15</td>
</tr>
<tr>
<td>Benefits and costs</td>
<td>1.11</td>
<td>0.35</td>
</tr>
<tr>
<td>Procomer training and research</td>
<td>0.14</td>
<td>0.93</td>
</tr>
<tr>
<td>Institutional restrictions</td>
<td>0.67</td>
<td>0.57</td>
</tr>
<tr>
<td>Logistical limitations</td>
<td>0.94</td>
<td>0.43</td>
</tr>
<tr>
<td>Technology</td>
<td>0.68</td>
<td>0.57</td>
</tr>
</tbody>
</table>

Source: Compiled by author.
As we can see from the data only the item on commitment to the local market gives a result that is less than 0.01, the rest seem to give the same mean values.

b. Contrast with the size
To contrast size according to the number of employees, we considered two groups: companies that have 50 or less employees and the companies that have more than 50 on the staff. We used the T statistic, to study the independence of the means and we obtained the following results:

Table 6. T-Statistic for contrast according to the number of employees

<table>
<thead>
<tr>
<th>DEPENDENT VARIABLES</th>
<th>T-STATISTIC</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>International commitment</td>
<td>0.96</td>
<td>0.34</td>
</tr>
<tr>
<td>Lack of executive skills</td>
<td>0.49</td>
<td>0.63</td>
</tr>
<tr>
<td>Commitment to the local market</td>
<td>-0.60</td>
<td>0.55</td>
</tr>
<tr>
<td>Effective strategy in the destination country</td>
<td>-0.96</td>
<td>0.34</td>
</tr>
<tr>
<td>Strategy in the relation with the client</td>
<td>1.35</td>
<td>0.18</td>
</tr>
<tr>
<td>Disadvantages in the financial position</td>
<td>-0.36</td>
<td>0.72</td>
</tr>
<tr>
<td>Credit to clients</td>
<td>1.86</td>
<td>0.07</td>
</tr>
<tr>
<td>Benefits and costs</td>
<td>-1.3</td>
<td>0.20</td>
</tr>
<tr>
<td>Procomer training and research</td>
<td>2.28</td>
<td>0.03*</td>
</tr>
<tr>
<td>Institutional restrictions</td>
<td>-1.66</td>
<td>0.10</td>
</tr>
<tr>
<td>Logistical limitations</td>
<td>-2.32</td>
<td>0.02*</td>
</tr>
<tr>
<td>Technology</td>
<td>0.01</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Source: Compiled by author.

We found that only the Procomer item and logistical limitations offered a value less than 0.01, the rest showed different means between the groups of companies.

Conclusion and discussion
Once the research results carried out on 57 companies in the province of Cartago were presented, we then proceeded to show the principal findings
Considerations based on frequency distribution

1. The majority of exporting SMEs in the province of Cartago partake in international activities and at the same time attend the local market. They have more than 20 years of experience as they started operating in the 80s and 90s. We found that their main reason for internationalising their operations was to increase the profitability of the businesses (Response offered by more than 50% of the companies surveyed.) On the other hand more than 60% undertook an initial investment that was less than 14 million colones and the majority of them are legally established as limited companies and work mainly in the agricultural and industrial sector.

Major activity can be developed through chambers of commerce and industry of the province, these bring together a large number of exporting companies and then with the support of the Costa Rican Technological Institute and PROCOMER can set up a programme for training and advice that is aimed at the creation of exporters in the province. We should also look at what the needs of the companies that are currently developing foreign operations are to be able to attend to them specifically.

2. From the point of view of management skills, according to the definition of this research. The majority of companies have determined that: the interest in exporting that may exist in the company, the active attitude of the executives and understanding international business are the main factors that have positively stimulated exports. These should be understood as positive elements that have motivated companies to go into international markets. On the other hand we have considered in companies that: a lack of ambition and excessive occupation in local activities have significantly limited the development of foreign operations, whilst the risk and the perception that the products are not saleable have not produced reasons for this but these have also not been considered as limitations to operations. These findings are relevant because they direct attention in the training of executives towards strengthening their attitudes and knowledge in international markets to continue increasing exports. However what is
even more important is that they allow universities and state institutions to understand that they must better attend to the excessive attention in local activities, one of the elements mentioned by the businessmen and that impedes their development in activities abroad.

3. From the marketing perspective, the businessmen surveyed agreed in that knowledge in target markets and the right determination of opportunities, as well as customer information and excellence in service have had a positive bearing on the development of international activities and that the lack of connections and difficulty in complying with terms abroad have limited export performance. It is clear that a company’s strategy in terms of marketing variables influences export performance. A company who wishes to become international should have its market visualised and establish the proper connections. The variable of handling prices in the foreign market should be necessarily compensated with variations in services and auxiliary support to clients abroad.

4. Financial relations also represent aspects that are very important for the small and medium sized company businessmen. According to the research, the ease of obtaining credit and the facility of offering guarantees are factors that have a positive bearing on export performance.

However the lack of resources and the difficulty of compensating prices abroad, joined with high tax rates are elements that make it difficult or limit the performance of operations of an international nature. It is imperative that a greater amount of financial benefits are established so that SMEs can risk going into the international market. Financial institutions particularly state ones (Banco Crédito, Nacional y de Costa Rica) should be steered towards the creation of risk capital.

5. There are also some other relevant elements for SMEs in developing international operations. Technological modernisation, the good image of the country, the high quality of inputs and the active work of PROCOMOER have been described as items that motivate export performance. On the other hand low production skills and difficulty in dealing with greater volumes, together with passive work from the Ministry of Economy, Trade and Industry, have been described as variables that limit performance.
Conclusions
After considering the descriptive analysis and statistics integrated into this study, we conclude that the hypotheses posed are true and that in fact management skills, marketing strategies, financial conditions and other factors studied in this research have a positive bearing on the export performance of the small and medium sized companies in the province of Cartago in Costa Rica.

Export performance was defined in this study as the incidence of some of the factors, in the motivation to develop international activities. However, the statistical assessment determined that it was important to measure export performance through variables of a quantitative nature, with the aim of achieving greater efficiency in the applications available in the different software when treating the data. This achieved greater thoroughness and consistency in the information extracted, which is why it is essential to consider this element in future investigations relating to the matter of small and medium sized export companies by using a modified data collection tool, to obtain the sensible changes detected in this first research on the subject.

Considering the results of this study, the development of various associated investigations is feasible, amongst which we propose:

- A study that covers all SMEs in Costa Rica that will identify the factors for management skills, marketing strategies, financial conditions and other general factors that due to their nature are not feasible to include in the categories mentioned and that have a bearing on export performance. To consider SMEs that do not export within investigation dynamics, so as to undertake integral comparison between the two sectors of the small and medium sized companies: those that carry out activities abroad and those that do not.
An element that is of utmost importance should be the identification of the parameters of quantitative measurement in export performance. The level of exports should be considered from the perspective of the financial volume and percentage that the exports represent according to the total volume of business operations.
The analysis of a company’s financial growth measured according to the variation of its economic relations, before and after the start of international operations should also be relevant to assess the financial effect that was achieved with the introduction of export processes into the business.

- Large scale research that would involve the field of big business and transnationals that work in the country, to identify the factors that affect them are and compare the results with the national SMEs. We should include into this study the variable of financial growth that is studied by measuring the performance before and after the export process.

- Another relevant investigation should be developed examining the in depth study of exporting company cases. We can take a group of national SMEs and a representative group of other exporters which due to their characteristics could be classified as large companies. We should assess their performance in different subjects, seeking to find important contributions in research and teaching.

**Bibliography**


