Market knowledge, diversification and export expansion

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Journal of International Business Studies
MARKET KNOWLEDGE, DIVERSIFICATION AND EXPORT EXPANSION

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Abstract. The research focuses on the export expansion process of small and middle-sized manufacturing firms and some of its correlates: diversification and geographical market distribution, means of acquiring information and modes of international distribution. The study reveals the overwhelming influence on export expansion of information acquired from business transactions as opposed to reliance on private or public information services. The impact of market diversification and its nature is confirmed. Policy implications are suggested.

More than two decades of research on the export behavior of firms in various countries have produced quite a valuable body of knowledge explaining why firms do or do not export, what makes them successful exporters and how they proceed when entering foreign markets to expand export activities.

Despite its oft-mentioned theoretical and methodological shortcomings, this past research has been of considerable help to export management consultants, public servants responsible for export promotion, and private sector advisers, in pinpointing the variables to be weighed when advising on alternative strategies for international expansion.

The present authors, however, are not so much concerned about the inevitable contradictions and shortcomings of existing research results as they are struck by the fact that export behavior has been more often studied as a static phenomenon than as a dynamic process. Objections have been forcefully expressed with regard to this situation by Johanson and Vahlne (1977) and by Reid (1981). In contrast to past empirical inquiries which have tended to portray export activities as a discrete phenomenon in which different parameters are associated with various stages of growth in export involvement, the Johanson and Vahlne and Reid studies emphasize the continuous aspect of the internationalization

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process. Although quite different in their outlooks, these two theoretical and conceptual studies make the process of acquiring export-related information a key factor in export expansion and the internationalization of the firm. These considerations constitute the basis for the present research.

Market intelligence is considered in the export literature as a key prerequisite to export entry and expansion (Johanson and Vahlne, 1977; Reid, 1981; Wiedersheim, Olson, Welch, 1978; Czinkota, 1982); and governments in industrialized countries, in accordance with this view, have designed extensive information services to fulfill the intelligence needs of exports (Cunningham and Spiegel, 1971; Czinkota and Johnston, 1981; Posner, 1980).

It has been pointed out, however, that such services are not being used to the extent anticipated, in particular by small exporters. This was observed in the United States by Simpson (1974), in the United Kingdom by Suntook (1978), and in Canada by Reid (1984).

The purpose of this article is to investigate the association between reliance on information sources whether private or public during the export expansion process. The central question is: how do exporters meet their information needs without relying on available information services?

Since information needs will vary with the level and nature of international involvement, this question implies an investigation of the relationships among export expansion, reliance on information sources, foreign market diversification, types of markets covered and reliance on export intermediaries.

METHODOLOGY

A basic concern in this study is to identify which among the various information-gathering activities are more closely associated with the very process of export growth. Two problems are raised: first, how to conceptualize information gathering within the export expansion process and, second, what information-gathering activities to select.

Conceptually, this study continues in the perspective opened by Johanson and Vahlne. As concerns market knowledge, these authors adopt the definition offered by Carlson (1974), namely, knowledge that relates to: present and future demand and supply; competition and channels of distribution; payment conditions and transferability of currency among foreign markets.

According to Johanson and Vahlne, market knowledge develops within a field of simultaneous relations among commitment decisions (e.g., allocation of resources to foreign market development); current activities (e.g., volume of export activities relative to volume of domestic activities); and market commitment (e.g., selection and diversification of foreign markets and the means of entry).
This model has received extensive recognition and remains one of the most frequently quoted in the literature on export behavior. To translate it into operational terms may, however, present some difficulties. It may, for instance, prove particularly delicate to distinguish market commitment variables from current activities. What no doubt constitutes the model's main virtue and makes it a major contribution, is the emphasis placed on the necessity to consider market knowledge within the network of simultaneous relations between commitment decisions, current activities and market commitment and their effect on the course of the export expansion process. In this perspective, one can better conceptualize a process in which market knowledge will impinge upon entry strategies and resource allocation to foreign market activities, while intelligence gathered from activities abroad will, in turn, work to modify this knowledge and lead to change in market commitment. As a result, the study of the relationships between market knowledge and export expansion must rely on models and statistical methods which take into account the outcome of otherwise unclear simultaneous relations.

There is also the broader question of what constitutes information-gathering activities. According to Kotler's taxonomy of marketing information systems (1981, chap. 24), two types of information on foreign markets are of importance to exporting firms: intelligence and market research. Small and middle-sized exporting firms seldom invest in market research, especially when they are just starting to operate abroad and their information needs tend more towards general intelligence. These needs can be met either through direct or indirect means. Exporters acquire direct intelligence of specific market data (market size or growth, import procedure and requirements, etc.) from specialized or non-specialized agents or sources. Indirect information is gathered in the course of business transactions abroad through intermediaries, such as, international banking services, freight forwarders and other export middlemen, or by participating in events such as international fairs and business missions whose focus is not so much information gathering as facilitating exchange or promotion. This research examines the hypothesis that indirect information-gathering activities play a determining role in the export expansion process and will attempt to identify which of these activities are the most important.

Sample

The researchers had access to a data bank of 331 small and middle-sized manufacturing firms located in the province of Quebec, Canada. This data bank was created by a study commissioned by the provincial government on the export potential of small and middle-sized manufacturing firms (REDEX, 1977). Firms were drawn from that bank using the following criteria: 1) they were independent firms with head offices in the province of Quebec; and 2) their shares of exports in total sales had increased during the 1970-75 period. Fifty-one firms met those criteria and were split into
two groups: "new" exporters (firms which did not export before 1970, n = 36) and "experienced" exporters (n = 15) which were exporting prior to that date.

Firms included in the studies belong to the metal, wood, and food industries. A separate study (Denis, chapter one, 1984) indicated that neither the sector nor the level of technology expressed in terms of patents owned or acquired, affected export performance. As far as size is concerned, the firms ranged between 1.8 and 10.5 million of Canadian dollars of total sales.

Variables

The variables to be considered apply to both groups of firms as described above:

For export activities:

1. The size increase in the volume of exports, $\Delta x$ where
   $\Delta x = x_{1975} - x_{1970}$ (in thousands of Canadian dollars);

2. The size increase in the average propensity to export from 1970 to 1975, $\Delta p$ where $p = \text{export sales/total sales}$ and
   $\Delta p = p_{1975} - p_{1970}$;

3. The percentage distribution of exports between the United States, other industrialized countries (OIC) and less developed countries (LDC);

4. Foreign market diversification expressed by an index
   $$E_m = - \sum_{i=1}^{n} \ln p_i$$
   where $p_i$ is the percentage of exports destined for market $i$ and $n$ the number of markets.\(^4\)

For information-gathering activities:

5. The number of public and private export information services used on a regular basis. These would include information and consulting services provided by the Ministry of Industry, Trade and Commerce, the Trade Commissioners abroad (both federal and provincial), information services provided by Canadian and foreign banks, international freight forwarders and custom brokers, private consultants, chambers of commerce and professional associations (maximum n = 8);

6. The number of means of distribution used in penetrating foreign markets. These would include export merchants, export brokers, foreign distributors, import agents, direct selling used on a regular basis (maximum n = 5);

7. Time spent at foreign fairs or on business missions abroad, expressed in man/day per year.

These basic variables were then disaggregated into subvariables of the 0-1 type according to a logical coding procedure (Burt, 1950).
**Statistical methods**

Because of the unclear simultaneous relations between the variables, a statistical technique which did not presume of any functional relationships in the explanation of variance had to be adopted. Correspondence analysis was chosen, as it seemed best suited to this purpose.

Correspondence analysis (Hill, 1977) is a method of factoring comparable to principal components analysis, with one major difference. Whereas principal components analysis computations are based on the correlation matrix of variables, correspondence analysis computations are performed on a linear combination of distance matrices of variables and objects between themselves. This array permits the simultaneous comparison of the observations and their associated characteristics within the same factorial space, and thus presents a very powerful technique for investigating the strength of expected correlations within the set of data presently under study.

Correspondence analysis associates measures with a set of objects (firms in our study) and validates these measures as hypothetical behavioral characteristics. The algorithm then identifies for each object and variable its level of contribution to total variance. The final sample to be submitted to parametric analysis can then be formed on the basis of a level of contribution to variance. In other words, objects and variables are retained because they contain the essential information to be analyzed. This does not mean, however, that observations are discarded because they do not fit the hypotheses to be tested. On the contrary, they are discarded simply because they do not provide any more information (contribution to variance) than is already contained in the remaining observations.

Correspondence analysis led to clustering of firms according to export expansion. Further statistical analyses were then performed in order to test the robustness of the clustering and to provide a rigorous interpretation of the relationships between the variables.

**ANALYSIS AND RESULTS**

After application of the logical coding procedure, correspondence analysis generated 36 eigen vectors for the new exporters and 15 for the experienced exporters. Two eigen vectors were selected for each group, and they explain over 90% of the total variance in each. For reasons already explained, firms showing insufficient contribution to variance (less than 10%) were deleted. Twenty new exporters, eleven experienced exporters and all the variables were validated for further analysis.

For both groups of exporters, correspondence analysis yielded three profiles depending on their relative rate of increase in export trade over a five-year period (see Table 1).

In order to test the robustness of the clustering a discriminant analysis was performed. Mosteller and Bush (1954) and Box statistical tests indicated
### TABLE 1

Export Expansion Profiles—Results of the Correspondence Analysis

<table>
<thead>
<tr>
<th>EXPORTERS GROUPS</th>
<th>EXPANSION PROFILES</th>
<th>NUMBER of FIRMS</th>
<th>VARIABLES</th>
<th>DISTRIBUTION OF EXPORTS BY DESTINATION (%)</th>
<th>OTHER CHARACTERS (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Size increase in the average propensity to export</td>
<td>Average propensity to export</td>
<td>Sales volume</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Size increase in export volume</td>
<td>in U.S.A.</td>
<td>Other industrial L.D.C.'s countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attendance at fairs and missions</td>
<td>Market diversification index</td>
<td>Number of information services used</td>
<td>Number of means of distribution</td>
</tr>
<tr>
<td>Slow</td>
<td>11</td>
<td>3.1</td>
<td>93.5</td>
<td>7.6</td>
<td>13.5</td>
</tr>
<tr>
<td>Moderate</td>
<td>4</td>
<td>15.1</td>
<td>368.3</td>
<td>16.3</td>
<td>46.5</td>
</tr>
<tr>
<td>Rapid</td>
<td>5</td>
<td>33.0</td>
<td>2,864.4</td>
<td>107.6</td>
<td>66.8</td>
</tr>
<tr>
<td>Weighted Average</td>
<td>20</td>
<td>13.0</td>
<td>839.2</td>
<td>34.4</td>
<td>33.4</td>
</tr>
<tr>
<td>Slow</td>
<td>7</td>
<td>3.0</td>
<td>254.3</td>
<td>3.3</td>
<td>35.4</td>
</tr>
<tr>
<td>Moderate</td>
<td>2</td>
<td>12.0</td>
<td>515.0</td>
<td>5.0</td>
<td>84.5</td>
</tr>
<tr>
<td>Rapid</td>
<td>2</td>
<td>32.5</td>
<td>2,773.5</td>
<td>41.0</td>
<td>95.5</td>
</tr>
<tr>
<td>Weighted Average</td>
<td>11</td>
<td>10.0</td>
<td>759.7</td>
<td>10.5</td>
<td>55.3</td>
</tr>
</tbody>
</table>

**NOTES:**
1. In percentage points.
2. In 1000 $.
3. Number of man/days/year.
4. The maximum value in this study is 208.
5. Maximum n = 8.
7. Not included in the correspondence analysis.
that the clustering was not due to chance and that the profiles were independent of each other at the 99% level of confidence.

The expansion profiles emerging from this analysis can be characterized as follows for both groups:

- **Slow expansion**: a size increase in the average propensity to export of about 3% for both groups over the 1970-75 period accompanied by an increase in export volume of less than $100,000 for the new exporters and of about $250,000 for the experienced exporters.

- **Moderate expansion**: a size increase in the average propensity to export of 15.1% for the new exporters and of 12% for the experienced exporters accompanied respectively by an increase in export volume of $368,000 and $515,300.

- **Experienced exporters**: a size increase in the average propensity to export in the order of 33% for both groups accompanied respectively by an increase in export volume of $2,864,400 and $2,773,500.

**EXPORT EXPANSION PROFILES**

Summarized in Table 1, the various attributes of each profile give ground to the following comparisons.

**New Exporters**

Slow expansion exporters are characterized by a strong concentration on the U.S. market and by a relatively high orientation towards LDCs. In spite of their size, as expressed by sales volume, they remain small exporters. Reliance on public and private export services, as well as on fairs and missions abroad, proves limited.

Moderate and rapid expansion exporters present distinctively different profiles as compared to slow expansion exporters. Exports constitute a more substantial portion of total sales. There is greater market diversification, with less emphasis on the U.S. and greater concentration on other industrialized countries and LDCs. Both subgroups rely more on public and private services, means of distribution abroad, as well as on fairs and missions.

Rapid growth exporters differ from moderate growth exporters in several aspects: they are of larger size; their propensity to export is higher; they are more diversified, with fewer activities in LDCs; they rely much more heavily on fairs and missions and less on public and private services.

**Experienced Exporters**

Slow growth exporters are light exporters in spite of their size. They rely fairly heavily on LDCs. By comparison, moderate and rapid growth exporters are more concentrated on the U.S. market and more active in other industrialized countries. As a result they are much more diversified than the slow growth exporters. Both of these subgroups are heavy exporters, which in turn implies greater reliance on public and private services.
The most striking difference between fast growth exporters and the two other subgroups is their disproportionately greater reliance on fairs and missions.

New vs Experienced Exporters

The evolution from new to experienced exporter involves a learning process during which the firm’s export volume increases and comes to represent a greater share of its total sales. The firm diversifies its market, uses more public and private services, and slightly more means of distribution. As a group, experienced exporters rely less on fairs and missions than new exporters. A probable explanation for this may be that, once reliable business relations have been established abroad, reliance on such means of communication offers diminishing returns.

FURTHER EVIDENCE: RESULTS FROM CANONICAL CORRELATION ANALYSIS

Up to this point, export expansion has not been considered specifically with reference to increase in propensity to export or to the increase in export volume. By using canonical correlation analysis both of these variables constituting the first variable set can be looked at simultaneously as dependent variables in relation to involvement in fairs and missions, market diversification, means of distribution and number of information services used as independent variables constituting the second variable set.

Since new exporters and experienced exporters follow the same expansion paths, both groups have been brought together for the canonical analysis. However, a dummy variable has been introduced to take into account the effect of the difference in level of export experience between the firms constituting the sample.

The results from the canonical correlation analysis are summarized in Table 2. The correlation index for the first vector is significant at the 1% and for the second at the 1.3% level. The first vector yields by far the highest level of explanation.

The first vector shows that the two groups of variables share 92% of the variance explained. It yields a correlation of 96% between both sets of variables.

The first normalized vector of weight leads to the following implications:

- The size increase in the average propensity to export plays a greater role than the size increase in the export volume in describing the export expansion process;
- Attendance at fairs and missions and market diversification are in that order the factors with the greatest influence on export expansion;
- Number of information services and means of distribution used have a very minor influence on export expansion. The negative signs imply that an increase in the number of information services and means of distribution used will not result in an increase in the propensity to export or an increase in the export volume.
### TABLE 2
Results from the Canonical Correlation Analysis—Vectors and Variable Sets

<table>
<thead>
<tr>
<th></th>
<th>CANONICAL VECTOR I</th>
<th>CANONICAL VECTOR II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First set</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size increase in the average propensity to export.</td>
<td>.72</td>
<td>-2.28</td>
</tr>
<tr>
<td>Size increase in export volume.</td>
<td>.30</td>
<td>2.37</td>
</tr>
<tr>
<td><strong>Second set</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance at fairs and missions.</td>
<td>.78</td>
<td>.61</td>
</tr>
<tr>
<td>Market diversification</td>
<td>.46</td>
<td>-.54</td>
</tr>
<tr>
<td>Number of information services used.</td>
<td>-.16</td>
<td>.21</td>
</tr>
<tr>
<td>Number of means of distribution.</td>
<td>-.02</td>
<td>-.83</td>
</tr>
<tr>
<td>Export experience (dummy).</td>
<td>-.02</td>
<td>.53</td>
</tr>
<tr>
<td>Eigen value ($R^2$)</td>
<td>.92</td>
<td>.38</td>
</tr>
<tr>
<td>Canonical correlation</td>
<td>.96</td>
<td>.62</td>
</tr>
<tr>
<td>Chi-square</td>
<td>77.27*</td>
<td>12.63**</td>
</tr>
</tbody>
</table>

*, ** Significant respectively at the 1% and 1.3% level.

In the second vector, the two groups of variables share only 38% of the variance explained. The correlation between the two sets of variables reaches only the .62 level. It does, however, yield interesting insights which help clarify the export expansion process emerging from analysis of the first vector:

- attendance at fairs and missions, number of information services used and degree of export experience are associated with the size increase in export volume (positive sign) whereas

- Market diversification and number of means of distribution used are associated with the size increase in the propensity to export (negative sign).

Looking at both vectors for the second group of variables, it can be observed that attendance at fairs and missions and market diversification are the two variables which most influence export expansion. By opposition, the number of information services used plays a very minor role.

Finally, if export experience and number of means of distribution used play a definite though secondary role, it appears that the experience factor has more influence on export volume than on the average propensity to export and that the reverse holds true for the number of means of distribution used.

### THEORETICAL IMPLICATIONS

Based on this evidence the following export expansion path can be hypothesized:
• For new exporters, export expansion can be best described in terms of their ability to increase total sales through exports rather than through domestic sales (resulting over the years in an increase in the average propensity to export). The greater the attendance at fairs and missions, and market diversification, the faster the rate of expansion;

• As exporters gain experience, further expansion can be explained both in terms of the propensity to export and the increase in export volume. Although attendance at fairs and missions and market diversification keep on having a strong influence in expansion, reliance on a larger number of means of distribution will more substantially affect the propensity to export and therefore the rate of export expansion. This is consistent with the fact that, once an exporter has gained experience, export expansion depends largely on his ability to diversify his means of entry on foreign markets.

The results stress the fundamental importance of field work and of early market diversification in explaining export expansion. At a theoretical level these results conform with the postulates of the study’s conceptual framework. First, information gathering proves to be a constant determining factor in the process of export expansion, but it is found that the exporter’s most valuable information is obtained in the field, in the course of business transactions rather than through officially established information services, whether public or private.

Finally, they reaffirm the complexity of the export expansion process where significant simultaneous relations are at work, calling for less traditional approaches and statistical techniques.

This lends specific support to the view that the export expansion process will be better understood when sets of variables usually disassociated (such as individual firms and environmental parameters) are studied together.

PUBLIC POLICY IMPLICATIONS

What factors increase the average propensity to export for this sample of firms? Information services provided by public and private institutions are not much in demand by the firms in this study and reliance on such services does not prove very influential in export expansion. It may be because the data used in this study (dealing only with the number of services used) do not allow the quality of information services to be taken into account. And indeed one contact with a public or private export agency may sometimes prove more vital than twenty visits to a fair. But still . . . . How can we reconcile our findings with the fact that not only Canadian firms but those in many other industrial countries make reportedly constant requests for an increase in these services and that both private and public authorities use the media to announce the improvement of such services? This paradox may be viewed from several angles. The need for information is probably more acutely felt by small and medium-sized firms planning to export than by those already exporting, as the latter would
have acquired access to needed information through export activities. Then again, and with specific regard to firms already exporting as is the case here, as firms gain export experience and rely less and less on public and private information sources, their information needs probably become too specific for ordinary information sources to satisfy them. Or it might be the quality and pertinence of information rather than its quantity which exporting firms request and do not receive. This means that public and private information services must respond to two major types of clientele: the potential and the practising exporter. Their information activities should thus focus on identifying and satisfying precise information needs and stop contributing to the already abundant and often redundant body of general information already available.

Reid using a different methodology comes up with the same conclusion with regard to Canadian export information services. "The issue is one of efficiency. Research is needed to identify what specific knowledge advantage they confer in comparison to alternative sources" (Reid, 1984, p. 154).

Reliance on export intermediaries did not prove of overwhelming importance for this sample despite the rather sizeable role of export market diversification. Indications are that the firms in this sample tend to do the "export job" themselves whereas they should probably call on specialized export agents more often, especially when covering faraway markets. This is evidence of the underdeveloped state of export intermediaries—in Canada as may be the case in other industrialized countries—and of the need for public authorities and, more particularly, for trading houses themselves to promote the use of such services.

In this study, participation in fairs and foreign missions proved to have a powerful effect on export expansion. This finding will not come as a surprise to most export practitioners. The motto of the trade has always recommended physical presence on the foreign market in order to: cultivate business contracts; gain the attention and trust of foreign associates; acquire a first-hand feel of the market (its preferences, practices and customs) and display available products and services to potential buyers. The salient role of fairs and missions in the export expansion process is therefore to be expected, especially at the beginning of the export process: this study clearly shows that fairs and missions contribute more to export growth for new exporters than for experienced ones.

The findings reported here bear important consequences with regard to the government's export promotional mix. If, as the data indicate, fairs and missions have a greater impact on propensity to export than currently available information services in promoting export activities, then government funds should be spent on "field activities" rather than on the expansion of homebased bureaucracies. In other words, what is here being advocated is a zero increase in funding for homebased information services (such a freeze need not preclude efficiency gains, as was pointed out earlier) coupled with a boost in funding for fairs and missions and development of
government commercial representation abroad. Such recommendations correspond to desires already expressed in the Canadian business community (Hatch, 1979).

In this study (as in the one by Hirsch and Lev, 1973), export market diversification proves to be of major consequence for export growth, greater diversification efforts being required for fast growth. Once again the message for government policy-makers concerned with expanding national exports is that the foreign-based services needed for such geographical expansion should be provided. Since in many cases small and medium-sized firms will not be able to allocate the required resources to such endeavors, this finding also implies that government should consider granting incentives for developing specialized export services of the kind offered by trading houses, export consortia and international freight forwarders.

However, the present data do not imply that all kinds of diversification are appropriate. Export growth is certainly associated with diversification but it also depends on the foreign market mix. Both for new and experienced exporters, highest increases in propensity to export are obtained when there is least reliance on LDC markets. These markets may be lucrative but they do not favor rapid export growth. These results confirm the conventional wisdom that the small and middle-sized exporting firms should first try mature markets such as the United States and other developed countries even before turning to the newly industrialized LDCs.

Last but not least, information officers should point out to the eventual exporters the shortcomings of LDC markets and encourage the use of industrialized markets to gain their first experience.

NOTES

1. Assuming one takes as a reference point S. Linder-Burenstam’s (1961) pioneering work.
2. In particular more recently by Reid (1981).
3. It is not the purpose of the authors to establish another exhaustive reference list of all publications pertinent to this topic. In their view, however, studies by Bilkey and Tesar (1977), Bilkey (1978), Cavusgil and Nevin (1979), and books by Czinkota (1982) and Czinkota and Tesar (1982) have greatly contributed to bring together existing knowledge on export behavior.
4. This index is a measure of entropy taken over from physics and first used in economics as a measure of concentration by Theil, Scholes and Uribe (1965); Hirsch and Lev have used it more recently (1971) in a study of export diversification. In this study the index is being used to measure market diversification and is preferred to the more commonly known Herfindahl’s index because it proves more sensitive to the impact of small shares which are predominant in this type of industry.
5. See Mardia, Kent, Bibby (1979).
6. The international marketing literature tends to underplay their importance. For a notable exception on the importance of promotion, see Kirpalani and MacIntosh (1980).

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