



Contents lists available at ScienceDirect

International Business Review

journal homepage: www.elsevier.com/locate/ibusrev



Archetypes of SME internationalization: A configurational approach

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ARTICLE INFO

Article history:

Received 28 August 2013

Received in revised form 11 May 2015

Accepted 26 May 2015

Available online xxx

Keywords:

Internationalization archetypes

SME internationalization

Configurational theory

Cluster analysis

ABSTRACT

Building on the recognition of the variety of aspects associated with international expansion, we present a framework for identifying different archetypes of firm internationalization. Our model is based on six indicators: internationalization from the demand side, resources located abroad, geographical scope, international orientation, internationalization of the business network, and financial internationalization. Drawing from data on 63 Italian SMEs, four archetypes of internationalization strategy are identified through a cluster analysis: 'marketer', 'investor', 'networker', and 'weak internationalizer'. This study offers a methodological contribution to the analysis of firm-level internationalization, grounded in configurational theory, which defines strategies as multidimensional archetypes. We also discuss potential directions for future research.

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1. Introduction

Description and measurement of internationalization are central in international business research (Aggarwal, Berrill, Hutson, & Kearney, 2011). Two main types of contributions can be ascribed to this research area: those focusing on measuring the degree of firm-level internationalization and those aimed at identifying taxonomies and typologies of international strategies. As far as the former type is concerned, the literature shows heterogeneous approaches to measuring the degree of firm-level multinationality (Ietto-Gillies, 1998; Sullivan, 1994). Either single or composite index-based measures have been developed. Both of these measures show limitations in capturing the essence of the firm-level internationalization phenomenon. Single measures are considered deficient in capturing the complexity of internationalization processes. On the other hand, the adoption of aggregate indexes that summarize multiple indicators is questionable as they allow compensation among measures quantifying different sides of internationalization (Ramaswamy, Kroeck, & Renfort, 1996). The latter type of contributions includes all research that proposes configurations of international business strategies on the basis of one or more relevant internationalization dimensions (Bartlett & Ghoshal, 1989; Lim, Acito, & Rusetski, 2006; Perlmutter, 1969; Rugman & Verbeke, 2004). Our paper falls within this research stream.

In their analysis of the degree of firm-level internationalization, Aggarwal et al. (2011, p. 561) argue that "rather than searching for a single acceptable definition [of MNCs], a better approach would be to develop a classification system...". They suggest that "although classification systems have been used in the business and management disciplines, the more advanced quantitative methodologies have not yet been widely used... future research could usefully build on these techniques to construct enhanced classification systems of MNCs across a variety of dimensions in addition to their degree of multinationality" (p. 574). This paper aims at responding to this suggestion. Drawing from the multidimensional nature of the strategy construct, we develop a framework for the analysis of the internationalization archetype of the firm on the basis of six dimensions of firm-level internationalization.

The configurational theory of strategy (Meyer, Tsui, & Hinings, 1993) forms the theoretical background of this study. According to this theory, a firm's strategy or archetype can be described as a combination of multiple dimensions rather than a function of a single dimension. The search for strategic archetypes characterizes a well-consolidated stream of research in management literature (Miles & Snow, 1978; Miller & Friesen, 1978) and still represents a promising approach. For example, Lim et al. (2006) analyze three distinct international marketing archetypes, building on a conceptualization of international marketing strategies grounded in configurational theory. Very recently, Hagen, Zucchella, Cerchiello, and De Giovanni (2012) identify four strategic types of international SMEs and investigate their relationship with performance.

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On the empirical side, this paper proposes an application of the framework to 63 Italian manufacturing SMEs. Proxies of different internationalization dimensions are processed through a cluster analysis. A taxonomy based on four archetypes is therefore identified and the key characteristics of each archetype are discussed.

Our study primarily contributes to configurational theory, wherein strategies are analyzed as multidimensional archetypes. In addition, by focusing on international SMEs as our research setting, we offer an initial contribution to the understanding of the international strategies of SMEs, which is increasingly considered an important, though neglected, research field (Bell, Crick, & Young, 2004; Hagen et al., 2012).

The paper is structured as follows. The next section reviews the theoretical and methodological foundations of the configurational theory of strategy. In section three, we discuss the use of configurations in international business literature. Then, we present our approach as directed to the identification of configurations of international business strategies or 'internationalization archetypes'. The framework is illustrated in detail in section four. Section five describes the selection of the firms included in the empirical analysis and the data collection. The framework is then applied. The process of cluster identification is presented in section six. The internationalization archetypes are described and interpreted in section seven. In the last section, the contribution of the paper and the implications for practitioners are discussed and a research agenda is designed.

2. The configurational approach to the analysis of strategy

The search for strategic archetypes and organizational configurations is popular in strategic management literature. A number of attempts have been made to understand commonalities across organizations (Lukas, Tan, & Hult, 2001) and to capture the essence of most competitive postures or patterns of strategic behaviour (Garrigos-Simon & Marques, 2004; Robinson & Pearce, 1988).

According to the configurational theory of organizations (Meyer et al., 1993), strategy is a multifaceted construct consisting of different dimensions (Venkatraman, 1989). Strategic patterns are identified on the basis of the firms' positions along the different dimensions of the strategy construct. Configurations of strategy can also be defined as 'archetypes', 'gestalts', or 'generic types' (Miller, 1986). As Rich (1992, p. 758) notes, 'classifying organizations into types presents an alternative to the idea that organizations are either all alike or are all individually unique'. Configurational theorists of strategy therefore suggest that it is reasonable to believe that every business can be managed by a limited number of generic strategies (Miller, 1986). The focus of researchers is on identifying a limited number of strategy configurations out of numerous technically possible combinations (Lim et al., 2006).

The Miles and Snow (1978) typology provides an illustration of research on configurations of strategy. Miles and Snow (1978) develop a comprehensive framework that addresses the alternative ways through which organizations define their product-market domains and develop structures and processes to achieve competitive advantage in those domains (Olson, Slater, & Hult, 2005). Miles and Snow described four configurations: defender, prospector, analyser, and reactor.

Another popular dominant framework of business strategy is Porter's (1980, 1985) typology. Porter's typology suggests that business strategy is the result of how the firm creates customer value compared with its competitors and how it defines its market scope (focused vs wide). Certain generic strategies are more effective than others, depending on industry. The belief that the success of organizational types (or configurations) is a function of environmental and industrial conditions is grounded in

contingency theory (Meyer et al., 1993). Contingency theorists note that each strategic configuration is expected to be more effective in a particular type of environment (Ketchen et al., 1997).

A relevant issue regarding the identification of configurations is the choice between inductive and deductive approaches (Ketchen et al., 1997). Scholars following configurational approaches are commonly divided into two groups: typologists and taxonomists. Typologists identify configurations through a theoretical description. Typologies can be defined as "theoretical devices that are mainly useful for categorization... [they] identify multiple ideal types, each of which represents a unique combination of the organizational attributes that are believed to determine the relevant outcome(s)" (Doty & Glick, 1994, pp. 231–232). The researchers who define the configuration as taxonomy identify configurations by applying quantitative analytical techniques such as cluster analysis (Roca-Puig & Bou-Llusar, 2007). They focus on the empirical classification of organizations to inductively define a set of configurations that are appropriate to a given context (Ketchen et al., 1997). Meyer et al. (1993) argue that the distinction between typologies and taxonomies is largely artificial. Though originating from prior theory, organizational typologies are grounded in empirical experience. On the other hand, whereas taxonomies are developed from an empirical analysis, they are theoretically grounded because the attributes used in forming clusters are selected on the basis of a theory (McKelvey, 1982).

3. In search of configurations of international strategies: a multidimensional view of internationalization

Various examples of the typologies and taxonomies of multinational enterprises (MNEs) can be found in international business research (Harzing, 2000). Perlmutter (1969) identified three typologies of MNEs on the basis of managerial mindsets, which are labelled ethnocentric (home country-oriented), polycentric (host country-oriented), and geocentric (world-oriented). In his analysis of the rationale for FDI, Dunning (1993, 2000) identifies four main types of foreign MNE activity: market-seeking (or 'demand oriented'), resource seeking (or 'supply oriented'), efficiency-seeking (or 'rationalized'), and strategic asset-seeking. Building on the economic integration-local responsiveness framework, Bartlett and Ghoshal (1989) modelled a fourfold typology of MNEs as international, multinational, global, and transnational. Relying on data on the geographic distribution of sales for Fortune 500 companies, Rugman and Verbeke (2004) identified four types of MNEs: home-regional, bi-regional, host-regional, and global.

In the context of born globals (Knight & Cavusgil, 1996), a taxonomy has been developed by Knight and Cavusgil (2005) based on the constructs of international entrepreneurial orientation, technological leadership and Porter's (1980) generic strategies of differentiation, cost leadership and focus. Attempts to classify firm strategies can also be found in international marketing research (Larimo, 2006; Lim et al., 2006; Ozsomer & Prussia, 2000). However, as Hagen et al. (2012) observe, "analysis of the differentiated strategic orientations of SMEs [small and medium-sized enterprises] in international markets is missing" (p. 370). Uncovering strategic taxonomies, especially in international SMEs, is therefore a research area that deserves further investigation (Bell et al., 2004).

3.1. From the degree of internationalization to the internationalization archetype of the firm

Internationalization is a complex phenomenon that passes through multiple stages (Johanson & Vahlne, 1977) and follows multiple paths. It may involve not only marketing and sales, as the export literature shows, but also a number of different business

functions, such as sourcing, production, and R&D. However, the view of the firm as a mere sum of functional areas is not appropriate for a comprehensive analysis of this phenomenon because the analysis of internationalization, like any strategy, calls for a systemic view of the firm. Thus, we need to look at the firm as a whole rather than as a mere sum of functions (Cerrato & Depperu, 2011).

From the classical economic perspective, a firm is an input-output function (a production function) where labour, land and capital are the inputs. *Lato sensu*, in a modern view of the firm, land recalls tangible assets and labour refers to people or human resources. As to output, there are products, which generate a firm's revenues. While assets give a measure of the structure of the firm, revenues gives a measure of its operating activity. In a modern corporation, knowledge and intangible resources, on the one hand, and relationships, on the other hand, are relevant resources. We take these variables into account by considering 'attitudes' and 'relationships' as further relevant aspects to our analysis of a firm. Moreover, when international business is involved, such framework has to be extended by adding 'geography'. We have therefore identified six dimensions of the firm, corresponding to six internationalization dimensions (Fig. 1).

Our identification of the internationalization dimensions is consistent with the resource-based view of the firm (Wernerfelt, 1984), which emerged as a dominant paradigm in strategic management literature in the 1990s and provided new insights for the analysis of strategies and configurations of modern MNEs (Cerrato, 2006). In fact, four dimensions are specifically related to resources: resources located abroad (tangible resources), financial internationalization (financial resources), internationalization of the business network and international orientation (intangible and human resources).

4. The dimensions of the internationalization archetype

Internationalization from the demand side can be properly measured by the ratio of foreign sales to total sales. This ratio is the most widely used measure of internationalization in studies focusing on the impact of internationalization on firm performance. In addition, it is widely adopted by studies on SMEs'

internationalization as SMEs mainly rely on exports as their foreign market entry mode (Majocchi, Mayhofer, & Bacchiocchi, 2005). This measure is typically considered to capture the *performance* attribute of internationalization (Sullivan, 1994).

Resources located abroad are measured by ratios such as foreign assets to total assets, overseas subsidiaries to total subsidiaries, and foreign employees to total employment. These ratios indicate the *structural* attributes of internationalization, i.e., the amount of resources that go overseas.

Geographical scope is an important component of internationalization strategy. International business research has traditionally focused on country differences. Consistent with this approach, the concept of liability of foreignness (Zaheer, 1995) has almost exclusively been theorized in the context of entry into a particular country. However, the building of 'regional blocs' has emerged as a general tendency in the world economy (Buckley & Ghauri, 2004). In a broad sense, a region is an area characterized by similarities in culture, customer needs, regulatory environment, and the level of social and economic development. The *region*, rather than *country*, is therefore increasingly recognized as relevant unit of analysis in international business research (Chetty & Campbell-Hunt, 2003; Delios & Beamish, 2005; Rugman & Verbeke, 2004). Geographical scope can be operationalized by the number of countries or regions in which a firm operates and by the variance of economic, political, and cultural factors of the different national or regional environments.

International business research emphasizes that the degree of internationalization of a firm includes an attitudinal component, which is represented by top management's *international orientation*. In fact, top management's experiential, motivational, and attitudinal resources deeply affect the internationalization process of a firm (Escriba-Esteve, Sanchez-Peinado, & Sanchez-Peinado, 2008; Jones, 1999). Specifically, international orientation positively correlates with the extent of top management's international experience (Sullivan, 1994), as management's overseas experience plays a role in affecting a firm's predisposition to future international activities (Zucchella, Palamara, & Denicolai, 2007). The number of managers with international work experience (Bloodgood, Sapienza, & Almeida, 1996) and the ratio of duration of the top managers' international assignments to total

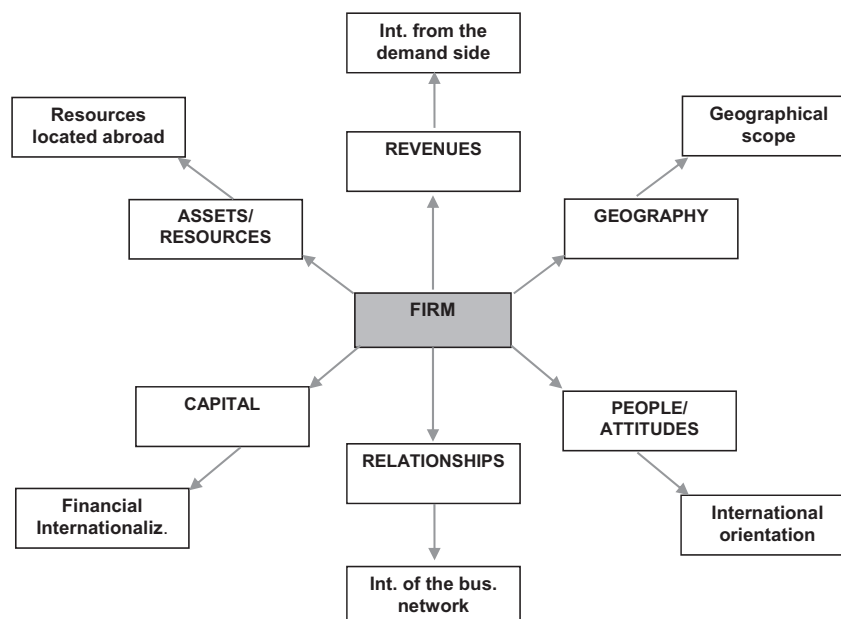


Fig. 1. The six dimensions of firm internationalization.
Source: Cerrato & Depperu, 2011

number of years of work experience (Sullivan, 1994) have been used as proxies for international orientation.

The internationalization of a firm's *business network* is another key dimension, as this dimension affects the range of opportunities a firm can access and the resources and competencies it can leverage in its international activities. The inclusion of this component reflects the shift from a traditional view that looks at internationalization essentially in terms of the amount of a firm's resources and assets allocated abroad to a perspective emphasizing the importance of a firm's network for its foreign activities (Bjorkman & Forsgren, 2000; Coviello & Munro, 1997). A measurement based exclusively on the structural components of internationalization would not be suitable for the analysis of firms such as SMEs, which, though highly internationalized in terms of foreign sales and markets served, rely more on network resources than on foreign direct investments (FDIs) to enter foreign markets. According to the network approach to internationalization, relationships primarily drive international business opportunities and decisions, thus enabling firms to leverage critical external resources (Chetty & Wilson, 2003). In particular, networking plays a highly important role for small firms, as they may exploit networks to mitigate the limitations due to their size or limited experience (Zou & Stan, 1998).

Finally, the internationalization of firms takes place not only in the area of production, but also involves a *financial dimension* based on the type of investors that firms consider (Hassel, Höpner, Kurdelbusch, Rehder, & Zugehoret, 2003). Internationalization should therefore be evaluated also in financial terms, not just real, measuring the extent to which a company internationalizes its financing or ownership structure by approaching international investors. Hassel et al. (2003) refer to the share of foreign activities as the *real dimension* of internationalization and to the orientation towards international capital markets as the *financial dimension*. Drawing on data from a sample of the 100 largest German companies, Hassel et al. (2003) show that the two dimensions do not co-vary. Foreign owners (share of foreign ownership) and foreign debts (as percentage of total debts) could be used as measures of financial internationalization.

5. Data description

The framework for identification of internationalization archetypes is applied to 63 small and medium-sized Italian enterprises (SMEs). Italy is an interesting setting for an analysis of SME internationalization, as SMEs constitute a dominant part of the country's economy (ICE-ISTAT, 2008).

Firm selection and data collection was a two-stage process. Such choice is due to two main reasons. First, as we process data through a cluster analysis, cluster validation is a critical issue. One possible way to validate cluster analysis outcomes is to collect more data, perform the analysis again and check for the robustness of the clustering structure (Ketchen & Shook, 1996). Second, we aimed at addressing the issue of generalizability through carrying out the analysis in different industries. We are aware that our analysis is limited in scope and that the issue of generalizability is present, even with a larger sample. However, replicating the analysis in different settings enhances the robustness of the clustering structure.

In the first stage, we tested our methodology on a homogeneous set of firms (in terms of industry), focusing on SMEs operating in the machine tools and mechanical industry. The machine tools industry is one of the industries in which Italian firms have traditionally achieved an outstanding position in the global market (Fortis, 2005). The selection of firms was based on multiple steps and criteria. The starting point was the list of firms belonging to UCIMU, the Association of Italian Manufacturers of Machine Tools,

Robots, Automation Systems. Of these 202 firms, 119 were international (i.e., having foreign sales or any activity located abroad). Thirty-three SMEs (representing 27.8% of the set of international firms) accepted to participate in the research project. The average number of employees of these firms is 115.

We then carried out a second survey to enlarge the number of participants and include SMEs from different industries. This survey was performed in collaboration with CERSI – a research centre on entrepreneurship located in the town of Cremona (North of Italy) and belonging to the *Università Cattolica del Sacro Cuore*. This research centre regularly monitors the performance and key figures of all of the manufacturing firms located in the Cremona area with revenues greater than 3.5 million euros. Of the 200 firms that matched these criteria in 2007, 121 had export sales or other international activities. Given our focus on SMEs, we excluded very small or 'micro' (less than 10 employees) and large (more than 500 employees) firms to have a size-homogenous group. The exclusion of micro firms is consistent with previous surveys carried out both in Italy, such as CIS¹ (ISTAT, 2004), *Mediocredito Centrale* (1999), and in broader Europe, such as *EFIGE* (Altomonte, Aquilante, & Ottaviano, 2012). This choice is also consistent with the literature (Coad & Hözl, 2009; Westhead, Wright, & Ucbasaran, 2002), which highlights the peculiarities of micro firms compared to SMEs. Of the 115 remaining firms, 30 (26%) were available to be involved in the project. The average number of employees is 127. In terms of sectoral distribution, 11 firms operate in the food industry, and the remaining firms are distributed in a variety of manufacturing industries (furniture, electronics, mechanical, textile).

A total of 63 firms therefore participated in the survey. The average sales and number of employees of the selected firms are 31.9 million euros and 121 employees, respectively (year 2007).

To check for non-response bias, secondary data were collected for all of the targeted firms (i.e., the 119 firms in the first stage and the 126 firms in the second). Respondents and non-respondents were compared to ascertain significant differences in a few variables, such as the number of employees and revenues. The results provided no evidence of significant differences between the two groups.

A questionnaire was submitted to either the entrepreneur or the managing director to not only collect the quantitative data necessary to measure the different dimensions of internationalization as previously defined, but also to gather the opinions, expectations, and perceptions of managers interviewed. All interviews were recorded and transcribed.

We also collected secondary data about business background at the firm level from multiple sources, including company websites, annual reports, publications and other publicly available corporate documents. We were able to draw a company profile with specific reference to financial performance, firm size, activities, products and foreign activities.

On average, foreign sales account for 47.8% of total sales, ranging from 6% to 93%. The dimensions of firm internationalization are measured by the following variables: foreign sales/total sales ('internationalization from the demand side'); number of foreign subsidiaries/total number of subsidiaries ('resources located abroad'); number of managers with international work experience/total number of managers ('international orientation'); number of international alliances/total number of alliances ('internationalization of the business network'). The measure of geographical scope is based on the number of regions where a firm is present. Countries are grouped in 6 regions: (1) European Union

¹ The CIS is the harmonized Community Innovation Survey that is carried out by national statistical agencies (ISTAT in Italy) in all 27 EU Member States, and is coordinated by Eurostat.

Table 1Pearson coefficient of correlation between clustering variables (*p* values in brackets).

Variables	Geographical scope	Resources located abroad	International orientation	Int. of the business network
Int. from the demand side	0.285 (0.024)	0.306 (0.015)	0.266 (0.035)	−0.063 (0.621)
Geographical scope		0.152 (0.235)	0.011 (0.436)	−0.008 (0.952)
Resources located abroad			0.078 (0.544)	−0.010 (0.938)
International orientation				−0.114 (0.375)

countries; (2) other European countries (including Russia and Turkey); (3) North America; (4) Central and South America; (5) Asia; (6) Africa and Australia. Thus, this variable is computed as the ratio of the number of regions in which a firm is present to 6, i.e., the maximum number of regions in which a firm could be present. Our approach is consistent with recent literature stating that, as far as the international scope of the firm is concerned, regions are relevant units of analysis (Rugman & Verbeke, 2004, 2007). None of the firms has foreign shareholders. Hence, 'financial internationalization' is not included in the present analysis. All of the measures are ratios, ranging from 0 to 1.

6. Cluster identification

Our aim is to investigate whether the above-referenced internationalization dimensions may be used to define alternative configurations of international SMEs. A popular technique to do so is cluster analysis (Everitt, 1980), an explorative multivariate technique largely used in strategic management literature because it allows for the recognition of aggregations of entities that naturally characterize the underlying data structure. Recent applications can be found in Lim et al. (2006) and Hagen et al. (2012).

A number of critical issues have been posed on the use of cluster analysis in management research, mainly due to its inherent reliance on researcher judgement (for a thorough review of applications and pros and cons of cluster analysis in this field see Ketchen & Shook, 1996). The main causes of concern are the multicollinearity of variables, the choice of clustering algorithm, the determination of the number of clusters and the validation of clusters.

Multicollinearity is relevant in order not to double-count common pieces of information among clustering variables. It is fundamental to assess its magnitude and impact, as the key to our approach is the need for a multifaceted representation of firms. The absence of high correlations among the selected proxies is thus a good starting point for our analysis (Table 1). In most cases, we obtain fairly low correlation coefficients accompanied by high *p* values. The only exception is the variable 'internationalization from the demand side' variable, which is correlated with 'geographical scope', 'resources located abroad' and 'international orientation'. This suggests shrinking the information common to the first variable and the other three in a new variable.

We have explored this possibility. In particular, we have performed a principal component analysis leading to a possible solution of four components explaining approximately 90% of the variance. The first component was, as expected, strongly related to 'internationalization from the demand side' and moderately related to 'geographical scope', 'resources located abroad' and 'international orientation'. However, each of the above three variables had a much stronger correlation with a different component. This result suggests the opportunity to keep the three variables separated, as the correlations between them are too low to recommend the use of only one component instead of the three original variables.

Furthermore, the fifth component alone explained more than 30% of the variance of 'internationalization from the demand side'.

Therefore, jettisoning the last component would have implied renouncing a considerable piece of information. Thus, we have decided to keep all of the variables to exploit all available information and to maintain all variables strongly tied to our theoretical approach. It is worth noting that we have obtained substantial consistency in group assignment according to the clustering performed under the principal component setting. This result further confirms the robustness of our clustering approach.

The cluster configuration was obtained through a two-stage procedure (Lim et al., 2006; Punj & Stewart, 1983). First, to determine the number of clusters, a hierarchical algorithm based on Ward's method was applied. Second, once the most suitable number of clusters was determined through multiple criteria (Ketchen & Shook, 1996; Milligan & Cooper, 1985), firms were reallocated in clusters via the *k*-means method. Both clustering procedures were performed through R-project routines, *agnes* (Kaufman & Rousseeuw, 1990) and *k*-means (package cluster).

The output of the *agnes* routine is reported in Fig. 2. The usual (rotated) dendrogram appears in the right panel, while the left panel depicts the banner, an additional graphical tool proposed by Rousseeuw (1986). The banner contains the same information as the clustering tree but is organized differently; thus it may be of some use in determining the appropriate number of clusters. Firms are listed vertically on the right, according to the order of merging, and successive mergers are represented by horizontal grey bars. The length of the white bars corresponds to the between-cluster dissimilarity.

Before turning to discuss the number of clusters, it is worth considering the overall amount of the clustering structure underlying our dataset. The width of the banner is useful to catch the degree of structure revealed by the algorithm. The left-hand panel of Fig. 2 shows that our data possess a rather clear clustering structure, as the between-cluster dissimilarities (white bars) become much larger than the within-cluster dissimilarities as the white bars grow longer. As a numerical evaluation of the global amount of structure, *agnes* returns the agglomerative coefficient² (AC), which can be seen as the average width of the banner. AC ranges from 0 to 1, with low values of AC pointing to a poor structure and high values of AC to a clear one. In our case, the agglomerative coefficient, printed on the bottom of Fig. 2, equals 0.91 and therefore confirms that agglomeration represents the inherent nature of our data.

Visual inspection of either the clustering tree or the banner suggests a four-cluster solution, as four dense branches of firms may be spotted (imagine cutting both graphs with a line between height 8 and height 10). In particular, the banner plot is divided into four distinct flags by three long white bars (between cluster dissimilarities), which means that we have to reach quite a significant distance to mix up the flags.

Other stopping rules confirm the above pattern. In Table 2, we report values for the pseudo-*F* statistics and change in *R*²

² For each firm *i*, let *d*(*i*) be its dissimilarity to the first cluster with which it is merged divided by the dissimilarity of the merger in the last step of the algorithm. AC is given by the average of all $1 - d(i)$. AC tends to increase with the number of observations and should thus not be used for comparisons of datasets largely differing in size (Kaufman & Rousseeuw, 1990).

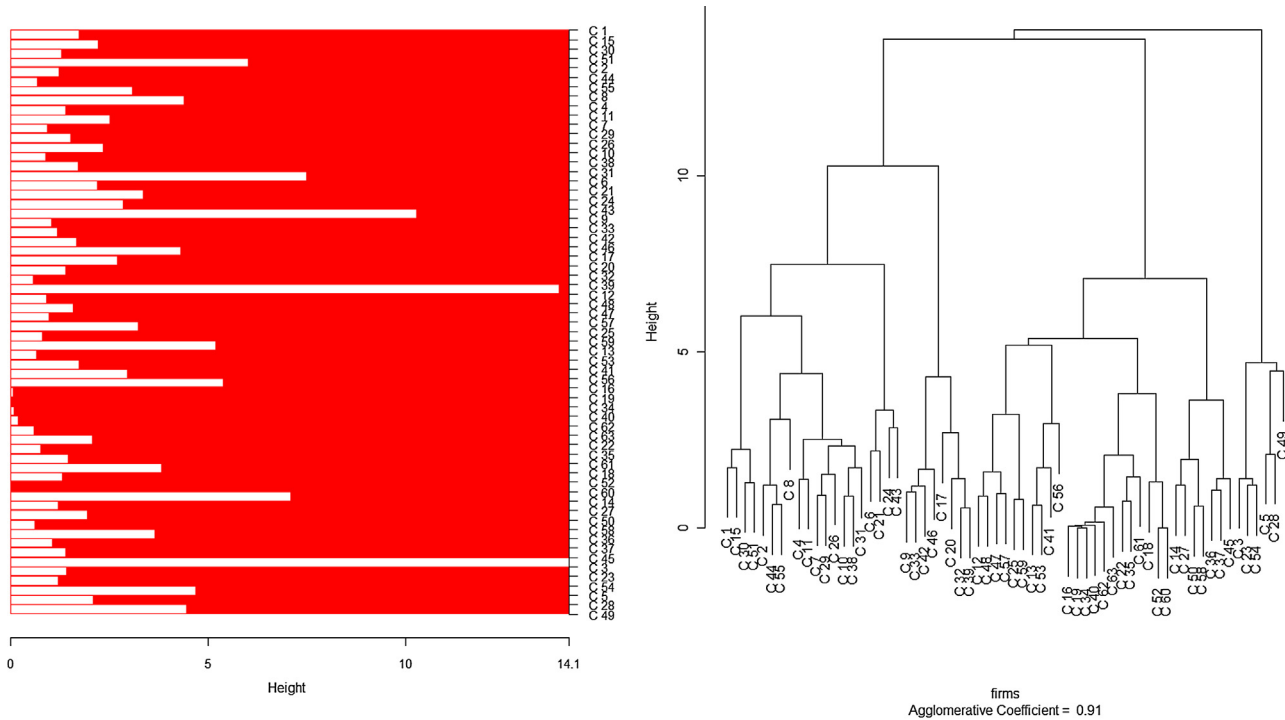


Fig. 2. Banner plot and clustering tree.

Table 2
Pseudo-F and R² for subsequent cluster solutions.

Number of clusters	Pseudo-F	R ²	Change in R ² (from k – 1 to k clusters)
2	14.549	0.193	–
3	20.720	0.409	0.216
4	25.667	0.566	0.157
5	24.488	0.628	0.061
6	22.747	0.666	0.038

corresponding to increasing numbers of clusters. The latter index shows that the larger gain in the total variance explained by partitions is achieved when moving from two to three and from three to four clusters, the remaining gains being negligible. The pseudo-F statistic has a peak in the four-cluster solution.

As both visual inspection and statistics point towards the four-cluster solution, we do not need to advocate subjective criteria to fix the number of clusters. We then reallocated firms around the previous stage centroids through an iterative k-means algorithm, as suggested in Punj and Stewart (1983) and Ketchen and Shook (1996). The final cluster configuration is shown in Table 3, which reports the number of firms belonging to each cluster and the centroids coordinates along the five variables (the standard deviations are reported in brackets).³

7. Characterization of the archetypes

In this section, we describe and interpret the four internationalization archetypes identified through the cluster analysis. A plot of centroids coordinates corresponding to the final cluster configuration is depicted in Fig. 3.

³ Comparing the outcomes of the cluster analysis performed on the full sample of 63 firms with the results of the analysis on the 33 firms included in the first survey, we observe that the number of clusters (4) remains the same and that the substantial characteristics of the clusters are maintained, thus confirming the robustness of the clustering structure. Because of space limits, we have presented the results of the cluster analysis on the entire sample of 63 firms. However, results on the initial sample of 33 firms are available from the authors upon request.

7.1. Archetype 1 ('Marketer')

Firms belonging to this archetype show a high degree of internationalization in terms of both foreign sales and geographical scope. On average, foreign sales account for 68.2% of total sales and the number of regions in which firms sell their products is 3.9 out of 6, corresponding to a ratio of 0.65. However, firms' commitment in terms of resources located abroad is highly limited, and they do not rely on partnerships in their international development. The international experience of their managers is a key driver of international growth. In fact, this archetype groups the firms with the highest level of international orientation. On average, 85% of the managers of these firms have international experience.

In spite of the limited size, high levels of foreign sales characterize these firms and their presence abroad is mainly based on exports rather than partnerships or FDIs. This archetype does not exploit comparative (location-specific) advantages based on localizing activities abroad or leveraging partnerships with foreign firms. Rather, these firms are interested in international markets mainly as target markets for their products. Internationalization primarily involves the downstream activities of the value chain, with little or no implication on upstream activities. The following quote from the managing director of C32 illustrates this point: 'Achieving a broader commercial penetration in foreign markets is our priority. Foreign sales have strongly contributed to our growth and will likely sustain our growth in the future'. Cluster-one businesses are reminiscent of the market-seeking rationale for FDI activity (Dunning, 1993). We therefore label this archetype as 'Marketer'.

7.2. Archetype 2 ('Investor')

Like firms in archetype 1, those grouped under archetype 2 show a high level of foreign sales (60%) and high geographical scope (the average number of regions in which firms sell their products is 3.6 out of 6), but their approach to internationalization is different. In fact, their commitment in terms of resources located

Table 3
Size of the clusters, means and standard deviations of the variables used for cluster identification.

Cluster	Number of firms	Int. from the demand side	Geographical scope	Resources located abroad	International orientation	Int. of the business network
1	9	0.682 (0.084)	0.646 (0.242)	0.056 (0.167)	0.850 (0.244)	0.000 (0.000)
2	15	0.599 (0.209)	0.597 (0.197)	0.649 (0.165)	0.247 (0.310)	0.022 (0.085)
3	9	0.480 (0.206)	0.572 (0.168)	0.166 (0.262)	0.226 (0.343)	0.852 (0.223)
4	30	0.358 (0.233)	0.480 (0.217)	0.038 (0.105)	0.051 (0.115)	0.027 (0.084)

abroad is quite higher (the average number of foreign subsidiaries is 2.7). The main difference compared with the previous archetype is that international activities are not limited to the area of marketing and sales. These firms exploit to a greater extent comparative advantages associated with localizing activities in foreign markets. We label this archetype as 'Investor'. On the basis of the traditional incremental view of internationalization (Johanson & Vahlne, 1977), we can argue that this archetype has already moved from the first stages of internationalization towards a more risky and committed presence. One manager (C39) noted: 'We think we need a grounded presence in a foreign country if we want to compete effectively. When you are a mere exporter, it is easy to be 'pushed away' by those that 'control' the market'. Internationalization is pursued as a stand-alone strategy, as firms in this group do not rely on international partnerships ('internationalization of the business network' is, on average, 0.02). Interviews shed light on the reasons behind the limited use of partnerships. For example, the President of C7 explains: 'We need to be very cautious in selecting partners and managing alliances: going abroad with partners might be a risky choice in an industry like ours [machine tools industry], in which technology and innovation are key competitive factors'.

7.3. Archetype 3 ('Networker')

This archetype encompasses firms adopting an internationalization strategy mainly focused on network resources. Their level of foreign sales (on average 48% of total sales) is moderately lower than those of the other two archetypes. Geographical scope and international orientation are similar to those of the firms under archetype 2. However, their commitment in terms of resources located abroad is lower than that of archetype 2, while the internationalization of the business network is much higher than that of the other archetypes. Cluster-three firms offer empirical evidence of the network-based approach to internationalization (Bjorkman & Forsgren, 2000), wherein relationships are the key drivers of foreign expansion. The managing director of C5 offers an example: 'We do believe that partnerships will be critical for our international expansion. . . We have developed a partnership with an Indian company: the idea is to transfer parts of machines that are then assembled by the partner and sold to the local market. . . A stable, long-term relationship with an Indian partner will enable us to consolidate our presence in the country'. Archetype 3 can therefore be labelled as 'Networker': these firms leverage partnerships and alliances to achieve a stronger presence in foreign markets.

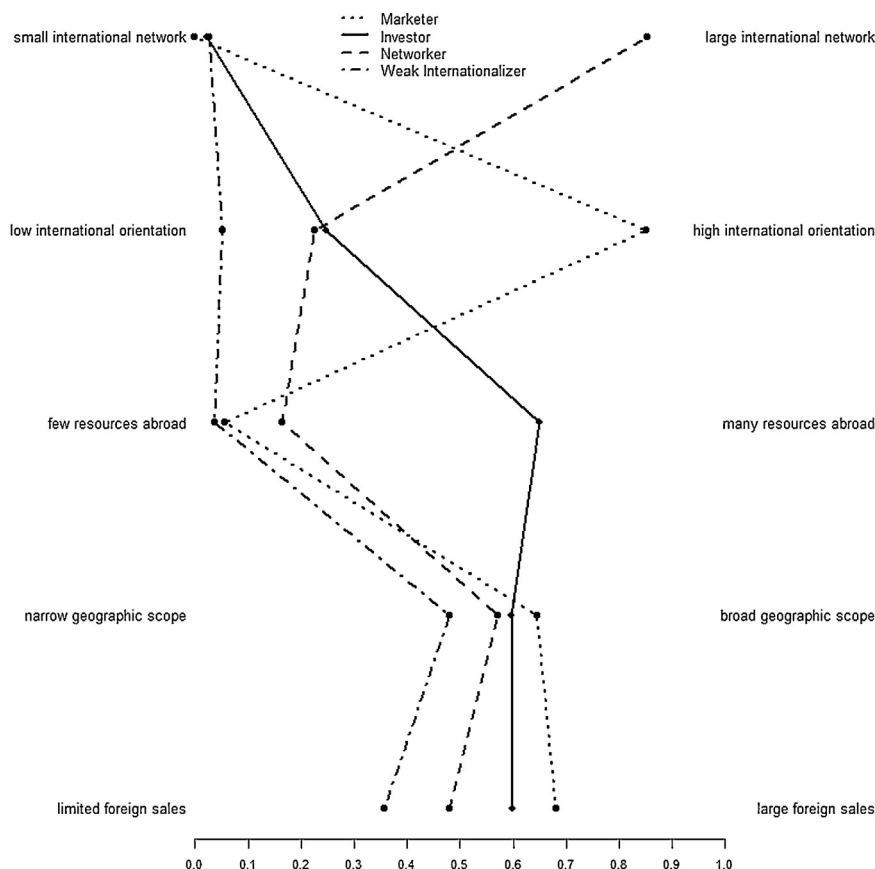


Fig. 3. Centroid values of the four clusters.

Table 4
Descriptive statistics of external variables.

	'Marketer'		'Investor'		'Networker'		'Weak internationalizer'	
	Median	<i>Mad</i>	Median	<i>Mad</i>	Median	<i>Mad</i>	Median	<i>Mad</i>
Firm size	47	19.00	76	42.00	86	58.00	54	34.00
Firm age	39	18.00	42	17.00	45	18.00	42	16.50
R&D intensity	0.01	0.01	0.03	0.02	0.03	0.02	0.01	0.01
Management education	0.50	0.50	0.50	0.17	0.40	0.24	0.00	0.00

7.4. Archetype 4 ('Weak internationalizer')

This archetype groups firms characterized by lower levels of internationalization in multiple respects. In spite of the relative importance of international markets as sources of revenues (they account, on average, for 36% of sales), international business remains secondary to these firms: geographical scope is lower compared to other archetypes (on average 0.48, corresponding to presence in less than three geographical areas), and resources located abroad are almost irrelevant. Their level of internationalization is also limited in terms of business network and managers' experience. We can argue that exporting activities have not substantially changed the management practices and organization of these firms, which remain fundamentally domestic. The managing director of the food company C34 noted: *'40% of our revenues are achieved abroad. However, domestic market is undoubtedly our priority. Any decision is taken having in mind our national customers... It's their requirements, quality standards, expectations that have shaped our business'*.

Firms under this archetype can be defined as 'Weak internationalizer' firms. The adoption of this internationalization archetype is not necessarily a deliberate choice, but may be interpreted as the result of the constraints to internationalization due to the firms' limited resources and capabilities. This concept is well explained by the CEO of C13: *'Our small size surely constrains our expansion potential abroad, but this is not the only obstacle to greater international development. The key issue is the lack of people who have enough international experience and competences to manage international business contacts effectively'*.

International business research shows that a wide range of variables affects SMEs' internationalization strategies. We therefore analyzed how the four clusters relate to the following variables that literature traditionally considers drivers of internationalization: size, age, R&D intensity and managers' education. We relied on robust indicators, such as the median and median absolute deviations (*mad*, in Table 4), to explore the characteristics of the archetypes, in terms of the variables that influence internationalization.

Firm size is a proxy for the resources available to the firm for internationalization processes: larger firms have more 'slack' managerial, productive and financial resources and can therefore meet the challenges of internationalization more easily. We measure size by the number of employees, consistent with other studies (Mittelstaedt, Harben, & Ward, 2003).

The age of the firm is measured by the number of years since the firm was created. Age cannot be considered a direct measure of international experience: the number of years of exporting activity rather than of business activity *tout court* would be a direct measure of it (Johanson & Vahlne, 1977). However, age is generally used to control for firms' business experience and its effect on foreign expansion, as it is assumed that firms that have operated for a greater number of years have accumulated greater experience and knowledge.

Innovation can have a significant positive influence on exports, too (Dhanaraj & Beamish, 2003). R&D intensity, i.e., the ratio of R&D expenditure to sales, is considered as a proxy for a firm's

technological resources and innovation and is widely used in international business research as a measure of a firm's intangible assets (Lu & Beamish, 2004).

Finally, we have considered management education. A higher level of education is associated with greater knowledge, which is useful for the management of complex decision-making processes and for analysis of the international environment (Tihanyi, Ellstrand, Daily, & Dalton, 2000). Management education has been measured by the ratio of the number of graduate employees to the total number of employees.

Some interesting empirical evidence emerges looking at the differences across the clusters of the four variables. Larger firms belong to the 'Networker' and 'Investors' archetypes. These groups are also characterized by greater R&D intensity. This result is not surprising, as these clusters are characterized by greater commitment to foreign markets, which, in turn, is reasonably associated with stronger firm-specific advantages. There is also a relevant difference in terms of levels of management education between the 'Weak internationalizer' archetype and the others. This evidence supports the idea that human capital plays a crucial role in SME internationalization. There is no difference in terms of firm age across the four archetypes.

Overall, the empirical evidence of this study shows that there is far greater heterogeneity in internationalization strategies behind similar degrees of internationalization in terms of, for instance, foreign sales.

8. Conclusions, implications for practitioners and research directions

We have developed a framework for analysing firm-level internationalization, building on the consideration of the multiple variables associated with the foreign expansion. Our framework allows for the identification of distinct configurations or archetypes resulting from specific combinations of multiple internationalization dimensions. Such an approach is grounded in configurational theory, wherein strategies are identified as multidimensional archetypes. As Lim et al. (2006) note, a configurational approach is not only tremendously relevant in terms of the richness of description but is also useful to stimulating scholars and managers to think about the multifaceted nature of international strategy.

Our contribution is primarily methodological. The purpose of this framework, like any classification scheme, could be assisting future scholars *"in identifying the common and disparate elements of alternative theories and in clarifying the value of specific contributions"* (Aggarwal et al., 2011, p. 567). In addition, it could help scholars to explore and shed light on specific patterns of firm internationalization and identify areas that need additional theory or empirical evidence.

To show the potential of this multidimensional view of internationalization, we performed a cluster analysis on a sample of Italian SMEs. We identify four archetypes ('marketer', 'investor', 'networker', 'weak internationalizer'). The analysis and interpretation of the four clusters shows that international strategies can be more richly and exhaustively described when we rely on a

multidimensional perspective that embraces different aspects of internationalization.

Our study has important implications for managers, policy-makers, and those public and private organizations that support firm internationalization. The results of the cluster analysis provide entrepreneurs and managers with a better understanding of the firm's internationalization strategy and enable them to compare the firm with other strategic groups. This would lead to greater awareness of the firm's strengths and weaknesses and to strategic decisions that better integrate a firm's resources and objectives with growth opportunities in foreign markets. The objective of a greater level of internationalization therefore raises different issues in terms of management gaps and priorities, given the different patterns of foreign expansion that firms may follow.

Classification into one of these types allows an analysis of motivations and strategic behaviours of not only SMEs but also internationalizing firms in general, given the applicability of our framework to a variety of research settings, including larger firms. Managers should take into account the peculiarities of the firm archetype when pursuing an internationalization strategy. Similarly, support services and assistance by policy-makers should be differentiated rather than result in an unspecific 'erga omnes' type of intervention. Policy-makers need to build greater awareness of the firms' different needs with respect to internationalization. Such differences could be useful for segmenting firms and adapting support services and promotion programmes to the specific needs of each type of company. For example, 'Weak internationalizer' firms may suffer from the lack of knowledge about general aspects of export operations as a main barrier to a greater international activity. Policy makers could therefore design a programme to provide them with greater opportunities to establish contacts with intermediaries and address the gaps in terms of general knowledge and procedural issues relating to exporting activities. 'Investors' are likely to be more sensitive to a different type of support. As these firms locate resources abroad, they are mainly interested in developing their capabilities relating to the management of overseas operations. For them it is more important to obtain access to services in the areas of human resource management (such as assistance in selecting employees in the countries where they start up production or sales units), support for decisions regarding foreign investment and other services that help them to acquire greater familiarity with the regulatory environment.

This study has limitations that merit comments. First, the analysis is based on data from Italy and includes a small number of firms. This limitation suggests caution in generalizing results. The descriptive power of the archetypes we have identified is reasonably tied to the type of firms (manufacturing SMEs) and country we have investigated. As our analysis is based on a single-country survey, we could not explore how environmental variables related, for instance, to financial markets and how macroeconomic context affects the internationalization strategies of SMEs. Additional research is necessary to be able to generalize the taxonomy developed in this study. Future research could therefore extend the empirical analysis to assess internationalization configurations across countries and firm size distributions. Second, the measures used to capture the different dimensions of internationalization need refinements to further validate the robustness of our findings. Other variables could be added to measure each aspect of internationalization and address reliability issues. As an example, we focus on the number of regions, rather than countries, to measure the geographical scope of the firms. Complementing our variable with country-level data could provide interesting details. Another limitation is related to the cross-sectional nature of our data, which prevents any dynamic analysis of the evolution of the firm internationalization archetype over time. Longitudinal analysis could allow for going beyond

descriptive analyses and exploring causal relationships in terms of drivers and outcomes of specific internationalization archetypes.

As for drivers, it would be interesting to investigate why firms tend to adopt a specific configuration, what environmental and industrial conditions push them towards that configuration and how it changes over time as a result of both changes in the firm's resources and competencies and external (environmental and industry) factors.

The focus on the outcomes brings attention to the relationship between internationalization and performance, which is crucial in international business studies. In spite of the significant amount of research on this topic, little consensus has been reached, proving that the relationship between internationalization and performance is a complex issue. Research based on configurational theory does not move from the assumption that any strategy archetype is better than others. No rigid relationship is therefore expected to hold between a certain internationalization archetype and performance. Rather, the focus should be placed on the fit between internationalization archetypes and environmental and firm-specific characteristics. Future research could investigate how internationalization archetypes moderate the relationship between (a) firm resources/competencies and performance, and (b) environmental/industrial characteristics and performance. Our framework focusing on the identification of a taxonomy of SMEs' international strategies provides a point of departure for such research.

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