

**Wine cluster strategic resources, firm value creation and competitive advantage**

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**Abstract**

The objective of this paper is to analyse, from a multidisciplinary perspective, the potential contribution of cluster generated resources to competitive advantage of firms located in it, the focus being on the cluster resources role in firm value creation. Towards this aim, potentially strategic cluster resources were identified from the extant cluster literature, classified in five categories and then adapted to the specificities of the wine business. The resulting wine cluster resources typology was then tested with institutional actors of the Serra Gaúcha (Brazil) wine cluster for the assessment of the resources role in firm value creation, leading to a mapping of the cluster's *strategic resources profile*. Practical and theoretical implications of the typology and its underlying conceptual framework are discussed and directions for further research are indicated.

**Keywords:** Wine Cluster, Value creation, Competitive advantage, Cluster resources typology

**Topic area:** Other (Strategic analysis of wine clusters)

## 1. Introduction

Cluster resources embody the economic, social, cultural, institutional and political factors that influence the internal process of value creation by clustered firms. Although a vast literature concerning industrial clusters has been produced in the last few years and the potential benefits to firms that can be derived from this form of production organization are widely recognized, very little effort has been made so far to analyse how cluster resources contribute to firms' value creation and hence to competitive advantage. Moreover, no general typology exists as yet for cluster-specific resources. This paper attempts to contribute to filling these gaps, from a resource-based multidisciplinary perspective.

The objective of this paper is to analyse the potential contribution of cluster generated resources to competitive advantage of firms located in it, focusing their role in firm value creation. In order to attain this objective, a framework that provides the conceptual base for the analysis was developed, using concepts and theoretical developments from management, strategy, industrial organization, socio-economics and economic geography literature. The resource-based view (RBV) to strategy provides the integrating element of these different concepts and constructs related to cluster-level resources and firm value creation.

Based on the conceptual framework developed, an initial list of potentially strategic cluster resources was obtained from the extant cluster literature. This list was then adapted to the specificities of the wine industry, through in-depth interviews with experts from the sector, and then classified, resulting in a typology with five categories of resources. The typology was then submitted to assessment by institutional actors of the Serra Gaúcha (Brazil) wine cluster; this, besides providing an empirical test for it, resulted in the mapping of the cluster's *resource profile*, a diagnostic tool for cluster-level policies and collective as well as firm-level actions.

## 2. Conceptual Framework

This section presents the concepts and approaches that underlie the proposed cluster resources typology. After a brief discussion of the concept of cluster, it presents, from the RBV perspective, the three elements that make up the conceptual framework for this paper, namely: the strategic nature of firms' resources; cluster resources and competitive advantage; and cluster resources and firm value creation.

### ***On the Concept of Cluster***

There are many definitions for the concept of cluster, ranging from very general to very restrictive. In its simplest form, a cluster can be defined as a geographic concentration of inter-related firms in a particular field. The presence of suppliers of specialized inputs, machinery and services, firms in related industries, research and technology centres and trade associations characterize the more developed clusters (Porter, 1998). At the more restrictive end of the spectrum, and particularly suitable to historically developed clusters, as is the case of most wine clusters, is that of Becattini (1990), who defines an "industrial district" as "a socio-economic entity which is characterized by the active presence of both a *community of people* and a *population of firms* in one *naturally and historically bounded area*" (p. 39, emphasis added).

Although our proposed typology is not dependent on any particular definition of cluster, from the multidisciplinary perspective taken in this paper Becattini's (1990) definition is more appropriate, as it highlights the importance of socio-cultural factors and provides an anchor for other pertinent cluster-related concepts. According to Lazerson and Lorenzoni (1999, p. 238), the cultural homogeneity of the *community of people* (clearly identifiable in terms of geography, history and culture) "produces an atmosphere of cooperative and trusting behaviour in which economic action is regulated by a series of implicit and explicit rules". And *cooperative* and *trusting behaviour* are essential elements of the related

concept of *social capital* of a community (or a region or a cluster), which includes its institutions and attitudes and values that guide the interactions between its members and contribute to its economic development (Farrell and Knight, 2003). Social capital thus relates to social norms and creates an environment of trust and reciprocity that reduces transaction costs, facilitates the undertaking of collective actions and, through social interaction, contributes to the diffusion of knowledge and innovations. These socio-cultural elements, in which firms and institutions are embedded in, are at the root of the recognized but as yet insufficiently understood notion of cluster *resilience*, a self-renewal capacity that some clusters have demonstrated to possess when confronted with crisis situations.

### **The Strategic Nature of Firms' Resources**

The notion that firms are fundamentally heterogeneous in terms of the resources and capabilities they possess has long been established as a basic premise of RBV (Penrose, 1959; Wernerfelt, 1984). In this view, the *sources* of competitive advantage of firms are associated with the *resources* that they possess, or are able to externally access, which are generally consolidated in the form of knowledge assets and capabilities.

Resources possessed or externally accessed by firms are considered *strategic* when they can be used as a basis for the creation of the *capabilities* and *competencies* that underlie a sustainable competitive advantage; in other words, when they are *valuable*, *rare* and *difficult to imitate or substitute* (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993). Or still, following (Barney, 2002), when they enable the firm to exploit environmental opportunities or neutralize environmental threats and are costly to copy or inelastic in supply. Within this logic, a resource that is valuable but not rare is a source of *competitive parity*; a valuable and rare resource is a source of *competitive advantage*; and a valuable, rare and difficult to imitate or substitute resource is a source of *sustainable competitive advantage*.

### **Cluster Resources and Competitive Advantage**

Clusters have an important role in creating and sustaining competitive advantages for firms located in it, the underlying assumption being that local (or regional) resources can influence the value of the firm's *internal* resources. In this direction, we posit that RBV, an approach to firm-level resources, provides as well an appropriate approach to cluster-level resources (RBV of the cluster). A few efforts in this direction can be found in the recent literature (Maskell and Malmberg, 1999; Molina-Morales and Martínez-Fernández, 2003; Wilk and Fensterseifer, 2003; Fensterseifer and Wilk, 2005; Hervás-Oliver and Albors-Garrigós, 2007), but this is still an emerging research theme.

The potential benefits to firms belonging to a cluster range from the positive externalities of the Marshallian industrial district (Marshall, 1890) to the more recent ones, more akin to the current competitive imperatives, such as its positive impact on learning and innovation (Lundvall, 1992; Schmitz, 1995; Porter, 1998; Humphrey and Schmitz, 2000; Giuliani and Bell, 2005; Visser and Langen, 2006). Schmitz (1995) introduced the concept of *collective efficiency* to capture these cluster advantages; it is defined as the competitive advantage derived from local external economies, in the Marshallian sense, and from consciously pursued *joint actions*, involving vertical or horizontal linkages. These potential benefits are shared, in differing degrees, by all firms located in the cluster.

These shared resources can be classified in two different kinds: *systemic* and *restricted-access* resources (Fensterseifer and Wilk, 2005). *Systemic* resources are those that can be accessed by *all* firms in the cluster, thus providing value for them *vis-à-vis* firms external to the cluster. *Restricted-access* resources, on the other hand, are defined as those whose degree to which they can be accessed by individual firms depends on meeting certain requisite conditions. For new scientific or technological knowledge generated by research institutions of the cluster, for example, the condition is that the firms possess the required *absorptive capacity* (as defined by Cohen and Levinthal, 1990), *i.e.*, they must be able to recognize the strategic value of the new knowledge *and* possess the required *prior* knowledge to assimilate and exploit it.

Another concept that is of relevance for the analysis of clusters is that of *governance*. Following Humphrey and Schmitz (2000), we use the term *governance* to refer only to the non-market modes of coordination of economic activities. At the cluster level, in addition to *public* and *private* governance, hybrids of the two forms (*public-private* governance) are also relevant. Informal interactions among the cluster actors, forming *social networks*, can also play an important role in cluster governance, particularly for solving *collective action* problems (CAP).

Finally, following the same logic as for firm-level resources, cluster-level resources are considered *strategic* if they provide *sustainable competitive advantage* for the clustered firms; that is, if, in addition to being *valuable* for firms in the cluster and *rare*, they are *costly to imitate or substitute* by firms outside the cluster. Concerning specifically the *sustainability* of a cluster-generated competitive advantage, there are several characteristics unique to clusters that can function as “isolating mechanisms” for the protection of their resources: unique historical development (path dependency), accumulated social capital, immobility, resilience and upgrading *capability* (a cluster capability developed through collective actions), among others (Fensterseifer, 2009); these characteristics, however, will not be treated in this paper.

### Cluster Resources and Firm Value Creation

The approach taken here views firms as resource combiners or integrators; that is, the internally developed resources are combined or integrated with the externally accessible ones in the process of creating and constantly reconfiguring the capabilities and competencies that create and sustain competitive advantage. We refer to the system by which a firm carries out this process as its *value creation system*.

Although the question of interest concerns the impact of clusters’ resources on firms’ competitive advantage, its assessment requires the analysis of their contribution to firm value creation, that is, how they are combined with the internal resources in order to develop the competencies that create and sustain competitive advantage. In this view, the firm’s value creation system has a mediating role between resources and envisaged competitive advantage; it is, in this sense, a firm-level function that maps resources, through a strategy-driven process of capabilities development, into competitive advantage, as shown in Figure 1.



**Figure 1:** Resources and Competitive Advantage: The mediating role of the *Value Creation System*

The analysis of the *internal process* of value creation, however, is beyond the scope of this paper. The mediating role of the *value creation system* is nevertheless important for “framing” the conceptualization concerning the *value* of cluster resources from the firm’s perspective. In this vein, for a cluster resource to be *valuable* for a (clustered) firm, following Barney (2002), it must contribute to enabling the firm to *exploit environmental opportunities* or to *neutralize environmental threats*; in so doing they constitute firm strengths and are thus potential sources of competitive advantage.

### 3. Identifying and Classifying Potentially Strategic Wine Cluster Resources

Since the strategic importance of cluster resources depends on the firms’ envisaged competitive advantage, it is clear that some of the resources may be strategic for certain firms but not for others. The concern is then with identifying and classifying *potentially* strategic wine cluster resources, and, towards this aim, it suffices to investigate their *value*, since being valuable is a necessary condition for a resource to be considered strategic.

The identification process consisted of the analysis of potential benefits to firms accrued from clustering found in the extant cluster literature and their posterior adaptation to the specificities of the wine industry. The identified benefits were then classified, from the RBV perspective, using Barney's (2002) condition for a resource to be *valuable*, in the following five representative categories of wine cluster assets, which constitute the proposed typology of cluster-specific resources: *institutional, specialization, social, reputational* and *natural capital*.

### **The Proposed Typology**

**A. Institutional Capital.** Derived from the governance structure and other cluster institutions, it includes: the local public, private and public-private institutions responsible for the coordination of *collective* actions within the cluster as well as for nationally representing its interests; and the education, research, training and technology system locally available and specific to the wine sector. It reflects the cluster's level of organizational, political and technological capabilities and is a distinguishing characteristic of the institutionally developed clusters from the mere agglomeration of related activities.

**B. Specialization Capital.** Derived from the supply of specialized factors resulting in benefits generally referred to as agglomeration economies or Marshallian externalities. Firms are benefitted by having efficient access to the supply of specialized (industry-specific) inputs, including labour, equipment and production inputs to grape-growers and to winemakers, consulting, marketing, distribution and financial specialized (sector-specific) services, and knowledge spillovers (both cluster-developed and externally-accessed knowledge). The latter consists mainly of tacit knowledge diffused through formal as well as informal channels of communication. Leading firms of the cluster and local institutions' external ties (links with external networks) are the main vehicles for the internal diffusion of externally generated knowledge (Coelho and Rastoin, 2006). The financial services consist of local availability of venture capital and investment funds for innovation-related projects. These shared resources constitute "public goods" for firms belonging to the cluster and are thus "untradeable" cluster assets. The more advanced a cluster is, the more it pays to invest in specialized (industry-specific) assets, leading to a larger stock of specialization capital.

**C. Social Capital.** Derived from the quality of social interactions within the cluster "community", it includes the relational assets based on trust, shared values and reciprocity that facilitate and generate cooperative value-creating actions. Of particular interest are the informal social interactions (social networks) that facilitate inter-firm (horizontal and vertical) cooperation to CAP solving and to enhance local entrepreneurship through the interaction of social and business ties. Although social capital also positively affects the functioning of the formal cluster institutions (institutional capital), only informal social interactions and networking are contemplated here in order to clearly separate their effects from those derived from formal cluster governance (institutional capital).

**D. Reputational Capital.** Derived from the common identity the cluster possesses outside its region, it includes all the assets that are related to the region's reputation: quality winemaking (value of "region of origin"); local level labels (appellations of origin, as AOC, DOC, IGP etc.); oenotouristic attractiveness, including wine routes and any regional reputational assets having a synergistic relation with it, such as gastronomy, artistic and cultural events, and history; and environmentally and oenologically sound wine-making and grape growing practices (resulting from regulation as well as voluntary actions). The latter reputational resource has two important dimensions: one regards the level of consumer trust in the cluster's products (food safety-wise), and the other the level of

consumer trust that the practices are environmentally sustainable and contribute to the reduction of the greenhouse effect (carbon balance).

**E. Natural Capital.** Derived from the natural environment, it includes: valuable resources for quality viticulture activities, as climate, soil and sustainable supply of water, and the attractiveness of the viticulture landscape. Contrarily to the reputational capital, which is “man-made” and requires sustained investment for its maintenance, natural capital comprises the natural resources endowment of the cluster.

#### **Further Remarks on the Proposed Typology**

Although the categories of resources are mutually exclusive, they are not independent, as some of them are mutually reinforcing both within and between categories. These interdependencies have important impact on policies for cluster upgrading and, in this respect, warrant a deeper analysis.

Since “social interaction”, through both formal and informal social networks, is an important characteristic of the organic functioning of a cluster, special care was taken to separate its effects on the different categories of resources, particularly institutional and social capital, but also concerning its role in the diffusion of knowledge and technological know-how, a type of specialization capital.

The unit of analysis is the cluster as a whole and consequently the typology can be used to evaluate a cluster’s resource profile from the perspectives of different groups of stakeholders, as institutional actors, firms, regional development agencies and policy makers in general.

#### **4. Evaluating Cluster Resources: The Resource Profile of the Serra Gaúcha Wine Cluster**

In order to assess the extent to which each category of resources contributes to value creation for the clustered firms, the list of identified resources (see Appendix) was submitted to seven representatives of the following classes of institutional actors of the Serra Gaúcha wine cluster: public-private institutions, trade associations and sector-specific education, research and technology centres. What is being sought here is a measure of how valuable for the clustered firms these shared resources are perceived to be by the institutional actors. The choice of the institutions was based on Fensterseifer (2007), which provides a general description of the cluster and its governance structure.

The value assessment was made by the respondents in the presence of one of the researchers involved, who provided a brief explanation of the research objectives, the proposed typology and the adopted view on value creation. A 4-point scale was used for rating each resource’s perceived importance for value creation (*actual*, not *potential* value), ranging from [1] “Not important at all” to [4] “Very important”.

The results obtained (expressed in terms of *mean* and *mode* of the rating for each resource) are shown in the Appendix; they reveal the cluster’s strengths (high ratings) and weaknesses (low ratings) and constitute thus its *strategic resources profile*, a diagnostic tool for collective as well as firm-level strategy. Since all the listed resources are *potentially* valuable, resources with low ratings reveal performance gaps and thus potential areas for cluster upgrading efforts.

#### **5. Concluding Remarks**

A set of potentially strategic wine cluster resources was identified and a typology was proposed and empirically tested with institutional actors of the Serra Gaúcha cluster. The test served to provide evidence of both the robustness of the typology and of its usefulness as a diagnostic tool for cluster effectiveness analysis and upgrading efforts. Moreover, besides providing a tool for evaluating cluster resources from various perspectives, the typology, with its underlying conceptual framework, sets the basis for further empirical and theoretical work.

Several research directions emerge from this work. On the empirical front, two obvious tests for the typology are: at the firm level (*i.e.*, the *firm* rather than the *cluster* as the unit of analysis), which would provide value assessment from the firm’s perspective; and as a tool for cluster performance benchmarking. On the theoretical front the possibilities include: analysis of the firm-level process of value creation and the role played by cluster-level resources; development of the conditions for *sustainability* of cluster resources, focusing on cluster-level “isolation mechanisms”; development of various types of cluster-level performance indicators (collective efficiency, effectiveness, resilience); and the analysis of the relationship between cluster resources *heterogeneity* and *diversity* of strategic groups within the cluster.

## Appendix

### Strategic Resources Profile of the Serra Gaúcha Wine Cluster

Cluster Resources	Rating* Mean (Mode)
<b>A. Institutional Capital:</b>	
A1. Local trade and professional associations	3.28 (3)
A2. Local public and public-private wine-related institutions	3.00 (3)
A3. Local educational system and vocational training centres	2.86 (3)
A4. Local research and technology centres	2.57 (2)
A5. Local technical assistance centres for grape-growers and winemakers	2.43 (3)
<b>B. Specialization Capital:</b>	
B1. Local availability of specialized labour	3.14 (3)
B2. Local availability of specialized equipment and inputs to grape-growers	3.00 (3)
B3. Local availability of specialized equipment and inputs to wine-makers	3.57 (4)
B4. Specialized local consulting, marketing and distribution services	2.00 (2)
B5. Specialized local financial services (venture capital and investment funds)	1.86 (2)
B6. Spillover of internally generated knowledge and technological know-how	3.00 (3)
B7. Spillover of externally accessed knowledge and technological know-how	2.14 (2)
<b>C. Social Capital:</b>	
C1. Horizontal cooperative interactions	2.71 (3)
C2. Vertical cooperative interactions	2.28 (2)
C3. <i>Ad hoc</i> networks for solving collective action problem (informal social networks)	2.43 (2)
C4. Entrepreneurship	3.57 (4)
<b>D. Reputational Capital:</b>	
D1. Cluster reputation related to wine quality (value of “region of origin”)	3.14 (3)
D2. Reputation of denominations of origin, as AOC, DOC, IGT (value of “terroir”)	3.00 (3)
D3. Oenotouristic attractiveness (wine routes and wine-related artistic and cultural events)	3.43 (4)
D4. Cluster reputation related to environmentally sound grape growing and wine making practices (consumer trust in the cluster’s products)	2.00 (2)
D5. Cluster reputation related to environmentally sustainable practices and efforts oriented to the reduction of the greenhouse effect (Carbon balance)	1.28 (1)
<b>E. Natural Capital:</b>	
E1. Climate and soil	2.71 (3)
E2. Water resources	3.57 (4)
E3. Viticulture Landscape (includes natural beauty of topography and native vegetation)	3.14 (3)

\* Based on the perceived importance of the resources' impact on firm value creation: [1] Not important at all; [2] Of little importance; [3] Important; [4] Very important.

## References

- Barney, J.B. (1991), "Firm Resources and Sustained Competitive Advantage", *Journal of Management*, Vol. 17, No. 1, pp. 99-120.
- Barney, J.B. (2002), *Gaining and Sustaining Competitive Advantage*, 2<sup>nd</sup> Edition, Prentice-Hall, NJ.
- Becattini, G. (1990), "The Marshallian industrial district as a socio-economic notion", in Pyke, F., Becattini, G. and Sengenberger, W. (Eds.), *Industrial districts and inter-firm cooperation in Italy*, International Institute for Labour Studies, Geneva, pp. 37-51.
- Coelho, A. and Rastoin, J.L. (2006), "Financial Strategies of Multinational Firms in the World Wine Industry: An Assessment", *Agribusiness*, Vol. 22, No. 3, pp. 417-429.
- Cohen, W.M. and Levinthal, D.A. (1990), "Absorptive capacity: a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35, pp. 128-133.
- Farrel, H. and Knight, J. (2003), "Trust, Institutions, and Institutional Change: Industrial Districts and the Social Capital Hypothesis", *Politics & Society*, Vol. 31, No. 4, pp. 537-566.
- Fensterseifer, J.E. and Wilk, E.O. (2005), "Visão da Firma Baseada em Recursos, Clusters e Performance: Um Estudo no Setor Vitivinícola do RS", *Proceedings of XXIX ENANPAD*, Brasília-DF, Brazil, (CD-ROM).
- Fensterseifer, J.E. (2007), "The Emerging Brazilian Wine Industry: Challenges and Prospects for the Serra Gaúcha Wine Cluster", *International Journal of Wine Business Research*, Vol. 19, No. 3, pp. 187-206.
- Fensterseifer, J.E. (2009), "Strategic Resources and Sustainability of Competitive Advantages in Industrial Clusters: Towards a General Analytical Framework", *Proceedings of XXXIII ENANPAD*, São Paulo-SP, Brazil, (CD-ROM).
- Giuliani, E. and Bell, M. (2005), "The micro-determinants of meso-level learning and innovation: evidence from a Chilean wine cluster", *Research Policy*, Vol. 34, pp. 47-68.
- Hervás-Oliver, J.L. and Albors-Garrigós, J. (2007), "Do cluster capabilities matter? An empirical application of the resource-based view in clusters", *Entrepreneurship and Regional Development*, Vol. 19, March, pp. 113-136.
- Humphrey, J. and Schmitz, H. (2000), "Governance and upgrading: linking industrial cluster and global value chain research", *IDS Working Paper*, No. 120, Institute of Development Studies, University of Sussex, Brighton, UK.
- Lazerson, M.H. and Lorenzoni, G. (1999), "The Firms that Feed the Industrial District: Return to the Italian Source", *Industrial and Corporate Change*, Vol. 8, No. 2, pp. 235-266.
- Lundvall, B. (1992), *National Systems of Innovation: towards a theory of innovation and interactive learning*, Pinter, London, pp.1-19.
- Marshall, A. (1890), *Principles of Economics*, McMillan, London.
- Maskell, P. and Malmberg, A. (1999), "Localised learning and industrial competitiveness" *Cambridge Journal of Economics*, Vol. 23, pp. 167-185.
- Molina-Morales, F.X. and Martínez-Fernández, M.T. (2003), "The Impact of Industrial District Affiliation on Firm Value Creation", *European Planning Studies*, Vol. 11, No. 2, pp. 155-170.
- Penrose, E.T. (1959), *The theory of the growth of the firm*, Wiley, New York.
- Peteraf, M.A. (1993), "The Cornerstones of Competitive Advantage: A Resource-Based View", *Strategic Management Journal*, Vol. 14, No. 3, pp. 179-91.
- Porter, M.E. (1998), "Clusters and the New Economics of Competition", *Harvard Business Review*, Nov.-Dec., pp. 77-90.
- Schmitz, H. (1995), "Collective efficiency: growth path for small-scale industry", *Journal of Development Studies*, Vol. 31, No. 4, pp. 529-566.



Visser, E.J. and De Langen, P. (2006), "The importance and quality of governance in the Chilean wine industry", *GeoJournal*, Vol. 65, pp. 177-197.

Wernerfelt, B.A. (1984), "Resource-Based View of The Firm", *Strategic Management Journal*, Vol. 5, pp.171-180.

Wilk, E.O. and Fensterseifer, J.E. (2003), "Use of resource-based view in industrial cluster strategic analysis", *International Journal of Operations & Production Management*, Vol. 23, No. 9, pp. 995-1009.