Behind Innovation Clusters: Individual, Cultural, and Strategic Linkages

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ABSTRACT

As observed by Porter [1] and Enright [2], clusters occupy a key position in the economy of developed countries, most notably because they bring several benefits resulting from economic and social factors. Although these authors alert us to the importance of social capital mechanisms in clustering processes, they fail to fully explore the psychological and social basis that underlay clusters and clustering processes. In the same vein, while Porter and Sölvell [3] mention that a cluster allows a shared language, social ties, and a set of standards and values to develop, they do not fully expand on how such phenomena develops. Addressing these gaps in the literature, the aim of this study is to investigate the dimensions (i.e. individual and social) which sustain and nurture the existence of macro structures (i.e. clusters). In particular, the current research looked at convergence and divergence mechanisms within a cluster. The exploratory nature of the research required a case study strategy; for this reason a cluster in the Portuguese textile sector was chosen. Data from three companies in the same cluster were gathered using several instruments, namely: a questionnaire, interviews, observation and documentary analysis. The results show that although the three companies operate in the same cluster, they are considerably different in terms of commercial orientations as well as cultural and strategic profiles, which is matched by a low presence of isomorphic mechanisms [4]; this result contradicts that of the Pouder and St. John [5] study. It was also observed that informal relations in the heart of the cluster are commonplace and that managers' differences play a role. In this way, they strengthen and motivate the aspects of the business that unite the cluster.

1. INTRODUCTION

In a global world undergoing constant change, the competitive advantages of organizations are increasingly short-lived. In this context, in order to reach financial goals, it is absolutely vital to develop innovative and enterprising capacities. Innovation is not only essential for growth, but it has become fundamental to survival [6].

Following the initial theory put forward by Schumpeter [7], innovation has been the subject for much interest in many scientific disciplines and practitioner areas, and has acquired an array of meanings and senses. Industrial cluster and the more recent term of innovation networks [8], are examples of the variety of interpretations associated with the concept. Clusters are business agglomerates which not only stimulate and facilitate tangible and intangible transactions, but are also agents of innovation, since they can reduce uncertainty and lead to more interaction with external agents [3] [9].

Porter may well have been the author who contributed most to raising the concept of clusters to star status in the field of business strategy, but his analysis is limited to identifying and describing the macro elements (structural and functional) of clusters, and ignores the role and the consequences that human and social capital can have on the performance of clusters and the subsequent financial outcomes. This gap in his analysis has led other authors to try and understand the raison d'être of a cluster, i.e., what causes it, makes it grow, and maintains it.

Interested in this phenomenon, Pouder and St. John [5] advance the concept of organizational isomorphism to suggest that, underlying the common interests observed in a cluster, there are cognitive and cultural similarities resulting from shared mental models and business concepts. Abrahamson and Fombrun [10] already observed this and when they studied the mental models of managers within a

network and the respective impact that these shared models have on the formation of a cluster macro culture. In line with these notions, isomorphism is defined as the "degree to which constituent components of a phenomenon and the relationships among the components are similar across levels of analysis" (House et al. [4], p. 88).

The aforementioned literature deals essentially with clusters in which the involved entities (or actors) - and in particular the companies in the cluster - have similar commercial attitudes, i.e., they compete for the same resources and customers, and have similar strategies. The existing literature is much less informative with regard to clusters in which the companies have different commercial attitudes. This constitutes a void in the literature that is important to tackle.

The first aim of this study is, therefore, to outline and characterise the cultural and strategic profiles of firms operating within the same cluster and, by comparing them, to determine whether the cluster in question has a single cultural and strategic orientation, as the literature suggests. This goal is followed by the second aim: to analyse the reasons for potential divergences or convergences, and subsequently to find out how isomorphic mechanisms act within the cluster.

In short, this study intends to contribute to understanding the dynamics underlying the construction and development of the human and social capital of clusters. It is organised into four parts. The first part reviews the state of the art; the second describes the method; the results are presented in the third; and the final part sets forth the main theoretical and practical contributions of this research.

2. LITERATURE REVIEW
2.1. From the Diamond of Competitive Advantage to the Cluster

The Diamond of Competitive Advantage was proposed by Porter [11] to analyse the structure and dynamics that are established between four determinants of competitive advantage: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry.

The first concept, factor conditions, consists of the set of inputs necessary to compete in a given industry. The inputs include physical, human and financial resources, knowledge and infrastructures. Demand conditions are understood to be the set of local customers and respective perceived needs; the more they anticipate or mould themselves to the needs of the global market, the more important they will be. The related and supporting industries are responsible for providing specialised inputs, machines and services; the presence of local suppliers allows a higher level of coordination and collaboration with benchmark companies. Finally, firm strategy, structure and rivalry influence competitive advantage; the chosen strategies will be reflected in the adopted structure, as well as in the pattern of rivalry [11].

Competitive advantage, with consequent investment in innovation, depends on these elements and on the dynamics established among them. For instance, easy access to oil resources gives producing countries a basic advantage which other countries find hard to replicate. However, this difficulty for non-producing countries may well be a strong incentive to invest in innovation, an example of which can be seen in the current technological innovations in alternative and renewable energy sources. A second example is vertical integration with customers and/or suppliers; this is actively sought by many companies as a way of stimulating internal processes of creativity and innovation.

Porter [11] also states that public policies influence the environment of national competitive advantage. The same is true regarding the relations that different institutions, industries and companies establish. Hence, some degree of geographic concentration stimulates interaction between the four determinants. It is on the basis of this last aspect that the author introduces the concept of cluster.

Porter [1] observes that countries are not successful in isolated industries, but rather in industrial clusters. A cluster is a group of entities whose inter-relations strengthen competitive advantage. Clusters include the competitive companies and their competitors, supplier industries, customers, and other related entities [11].

For Pouder and St. John [5], the birth of a cluster depends essentially on the existence of a set of resources necessary to support a certain type of organizational population. In this respect, Dunning [12] defends that a country's capacity to build and maintain a cluster resides in the macro-economic policies of governments, in the innovative and marketing capacities of the parties involved, in firms' capacity and willingness to harness the benefits and minimise the costs of clustering, and in the quality and availability of complementary goods (transport, communication, infrastructures and flexible labour markets).

Clusters have a strong influence of the determinants of competitive advantage described above. At

the level of factor conditions, certain authors [2] explain that clusters frequently foster public and/or private investment in infrastructures and/or financing. It is common to observe, for instance, the creation of specialised knowledge and skills that are specific to a cluster and which are difficult to replicate or copy [3].

In their turn, demand conditions are consolidated and reinforced by a variety of mechanisms, such as development of consumer networks, unplanned interaction between the actors, transmission of local information, and a shorter feedback cycle. For example, a cluster offers privileged access to consumers and this access is even more valuable since clusters often consist of sophisticated consumers who tend to pressure the producing companies into satisfying their needs [13] [14]. Consequently, they force companies to be innovative and reach higher levels of development than those of firms outside the cluster [3].

With regard to related and supporting companies, the geographic proximity provided by the cluster, as well as frequent interaction between the actors, promotes coordination and trust among them (see Davenport, Davies and Grimes [15]. The kind of close interactions fostered in a cluster are also important, not only because they allow access to information and knowledge, but also because they stimulate cooperation and collaboration [5].

Finally, the local pressures of competition that are fiercely felt within clusters have a positive influence over firm strategy, structure and rivalry, since they foster organizational dynamics and innovation [1].

In short, the benefits brought by clusters combine influences that are both economic (e.g. lower transaction costs, sharing of infrastructures) and social (e.g. specialised skills and know-how, shared knowledge, technological spillover) in nature. In other words, organizational performance is improved through lower tangible and intangible transactions costs [3].

In addition to these features, Porter and Sölvell ([3], p. 444) share that "the local cluster offers an environment in which a common language, social ties, standards, values and institutions can evolve, i.e., social capital". For these authors, it is of the utmost importance to analyse clusters on the basis of various elements, such as: identification of the actors involved in the agglomerates, the relations they establish with each other, and the benefits that can be reaped from economic and social exchanges [16].

Although Porter and Sölvell [3] indicate cultural similarity as an important aspect in the process of exchange and construction of social capital in the cluster, they do not pay particular attention to it, merely stating that it is the result of a common geographic location. This issue is worth closer examination, however.

2.2. The Cognitive Dimension of Clusters and the Concept of Isomorphism

Generically speaking, social cognition seeks to understand the way in which humans function in social contexts and particularly how they process information that is shared socially [17]. It is therefore assumed that the cognitions of those involved are fundamental in understanding the dynamics inherent in the collective process [18] [19]. Collective cognitions are structured into mental models that are more or less shared and which consist of concepts and relations that are used to understand situations [20]. The same author explains that concepts are the categories on which reasoning is based, while relations refer to the course that this reasoning takes.

Mental models originate from a process of learning from situations, systems and people. In other words, they develop from the contact established with the environment, and they are dynamic since they will reorganise, restructure, and update according to the interactions that take place [21]. In this way, individuals do not behave directly in line with the facts; instead, they are bound to the reality by means of representations that are assumed to be true [22] [23] [24].

The concept of interpretive scheme [25] is key to understanding the collective elaboration process of mental models. These schemes mediate the relationship between the environment and strategic choices. Laroche and Nioche [26] explain that the strategic scheme consists of a series of beliefs and relatively stable hypotheses within an organization, which are accepted and considered to be true. This frame involves rites, myths and symbols, structures, procedures, control systems and a particular distribution of power in the heart of the organization. It is therefore clear why values and beliefs must be mentioned when it comes to schemes. In fact, values are shared concepts which implicitly and/or explicitly express the preference for a certain course of action; beliefs are the assumptions that sustain expectations and influence perceptions, thoughts and emotions [26].

In the same way, the concept of isomorphism finds an important application in this context [27] as

can explain the development of shared mental models in a cluster. A similar phenomenon at an individual level was described by Pech [28], in his reflection about the need to conformity in internal non-innovative environments.

Isomorphism results from three different mechanisms which drive the actions of organizations in the same field towards homogeneity. The first mechanism is called coercive isomorphism, and it results from the formal pressures exerted by one firm over another which is in a position of dependence or under its authority [18]. Mimetic isomorphism results from the adoption of structural procedures and arrangements implemented in other companies in order to lower the uncertainty caused by technical problems, conflicting objectives and institutional demands. Finally, normative isomorphism consists of the processes of filtering information, perceiving and interpreting the environment, in which similar problems and goals are defined and established [29].

Given the known cognitive limitations and the tendency to simplify conceptual references, managers will be mainly influenced by local rivals. For example, Ritala and Hurmelinna-Laukkanen [30] note that competitors acting in similar business environments are likely to have knowledge-bases that resemble each other. Managers will also be more likely to generalise their mental models from the sub-population. The managers' organizational beliefs are thus relatively similar to those of other managers in the cluster. This will lead to similarity at the organizational level, since it is the managers who are primarily responsible for determining organizational culture [5] [18]. For Abrahamson and Fombrun [10] a macro culture is formed when there is homogeneity of mental models among managers belonging to a cluster which then cumulates at the organizational level.

Gelfand and McCusker [31] explain that culture will primarily influence the signification process. This is because when metaphors or conceptual signification systems developed and cultivated in a certain sociocultural environment are shared, they influence how social systems are interpreted, structured and organised. In other words, they play an organising and regulatory role in the sense that sharing the same cultural reality and the same conceptual framework will facilitate the knowledge transfer process.

2.3. Putting the pieces together - new avenues of research

The above discussion suggests that entities in a cluster share a number of features, like it also suggests that there are a number of isomorphic mechanisms in place promoting such "sharedeness". However, the existing research has dealt mainly with entities that have similar commercial stances. An important question can therefore be raised: what if entities in the same cluster do not have the same commercial posture? What if they diverge in terms of commercial orientations? These questions were some of the drivers of the current study, as already stated. They also call for a more qualitative research approach to take place, since there are a number of contextual variables which need to be observed in combination with the phenomenon under scrutiny. The section below details the case study strategy followed in this research.

3. METHOD
3.1. Design: Case study strategy

The research is based on a case study strategy so that a complex social phenomenon can be better understood in its natural context [32]. It was a unique case with multiple units of analysis. Case studies with N=1 are not uncommon [33]. Such studies "simply reflect a limited opportunity to observe" ([33], p.77), and they are reflections of larger phenomena [34]. In this study, the main unit of analysis is the cluster, with three levels of analysis: organizational, commercial attitude groups, and cluster.

The cluster in question is located in the Ave Valley region in Portugal and is one of the clusters in the Textile and Clothing Industry (TCI). This agglomerate is responsible for around 2/5ths of national TCI exports. Generic documentary and report information was collected from three technological centers that support the cluster. This information was key to characterise the cluster and to provide an initial answer to the two research questions.

The Ave constellation is different from other clusters as it has two groups of companies with distinct commercial positioning: those which work as sub-contractors for important international brands, and those which produce and sell their own brands. Organizational-level and commercial-level information was therefore collected in three companies, one pilot and two principal.

The pilot company was used to test the data collection instruments and processes. It is an 18-year old company, with 30 employees, which delivers products to multinational corporations companies

such as Nike, Adidas, and Puma. Later in the research, the pilot case was developed into a full case, but with slightly less information than the two other companies.

Company number 1 (Case 1) represents the firms in the cluster which are sub-contracted by foreign institutions to manufacture clothing items. It currently employs 700 workers and is run by its founder and an English textile group. It has a fairly wide range of products, but with a focus on sports and leisurewear. Unlike most companies in this segment of the cluster, it does not depend on intermediary agencies for soliciting orders. This is partly because it belongs to a network which covers the whole of Europe. This is also why it has adopted an international sales and marketing strategy, appearing at trade fairs such as Kind + Jugend in Cologne or Intergift in Madrid.

Company 2 (Case 2) represents firms that produce and sell their own brand. As in Case 1, Case 2 also features a company which recovered from imminent bankruptcy. It currently employs 70 workers and specialises in clothes manufacture, mainly pajamas and underwear. It has a loyal customer portfolio and sells products both to end distributors (shops) and to intermediaries (resellers). Some of its customers belong to the international market. There is no specific initiative aimed at exporting products.

3.2. Data collection instruments

With regard to data collection instruments, a triangulation strategy was followed [35]. The techniques used were: documents and reports for this cluster, questionnaire, interview, field diary, company internal documents, contact form, and a support form for the documents.

The interview script, which was developed specifically for this particular study, covered the three concepts under analysis (culture, strategy, and isomorphic factors) and was reviewed by a panel of specialists (researchers and entrepreneurs from the sector). The pilot study allowed the interview script to be improved and the questionnaire language to be adapted. Three interviews were carried out lasting between 50 and 75 minutes. The key informants were company directors.

Quantitative procedures were based on a translation of the Organizational Culture Inventory [36]. 20 employees responded to the questionnaire in each company. In Case 1, the respondents were: female (80%); aged 30-39 (50%); higher education qualifications (25%); time at the company (10 years or more: 60%). And in Case 2: female (75%); aged under 30 (55%); secondary qualifications or below (50%); time at the company (10 years or more: 65%).

The OCI is an inventory based on a cognitivist approach to culture, according to which culture consists of the ways of thinking, acting and believing which are common to members of a social unit [37]. The authors identify three cultural orientations: constructive (C), passive/defensive (P/D) and aggressive/ defensive (A/D). Each consists of four cultural styles, which refer to a set of behavioural norms: C (achievement, self-actualizing, humanistic-encouraging, and "affiliative"), P/D (approval, conventional, dependent, and avoidance), and A/D (oppositional, power, competitive, and perfectionist). The OCI has 40 items, which ask the respondents how far certain behaviours are expected in the organization. The answers are given using a 5-point scale (from 1, "not at all", to 5, "very much").

In addition to the OCI, eight open questions were added to the questionnaire, based on the family of concepts identified by Pettigrew [38] for studying organizational culture. Respondents were asked to identify the objects, words and people they considered to be representative of the company.

The data were first analysed in isolation, and then together [39]. The preliminary results were later sent to the companies to be confirmed and corrected in order to increase the study's quality [32].

4. RESULTS

Although the main unit of analysis is the cluster, the aims of the current research dictated that results are presented at a company level. The data pertaining to Case 1 are presented first, followed by those of Case 2. When appropriate, some results from the pilot study are also presented. The cases are then compared in order to understand similarities and differences between the firms. The data relative to each firm were segmented; i.e. the data were first analysed according to the concepts underlying them. Next, the analyses pertaining to each of the constructs were gathered. It was then possible to construct their descriptors, by company, which were later compared.

The data analysis and presentation use a mixed approach since they are supported by both quantitative results (tables, figures, and statistics) and qualitative results (excerpts from interviews and responses to the questionnaires, observation notes, and analysis of documents).

4.1. Case 1
4.1.1. Cultural profile
The OCI data gathered from the first company indicate that there are no differences between the sub-dimensions; the difference between the average value of the behavioural norm Achievement (C) (3.36) and the Affiliative norm (also C) (2.58) is very small[1]. "Achievement" indicates the norms that refer to employees' involvement in the work and to establishing the goals and objectives which lead to the company's growth, in harmony with the group. "Affiliative" means group satisfaction, and cordiality and cooperation among members.

The eight open questions asked respondents to name the objects, words and people which represent the company and the business. The most important results show that the words used to define the firm are essentially related to employees' professional conduct (32.2%). Most of the concepts identified to describe the business refer to the notion of organizational growth (40%). When asked to identify the main people in the company, the respondents named the managers (70%). Of these, over half the respondents (60%) indicated the director. When asked to describe him/her, half did so affectionately. The enterprising spirit of the director was brought up: the way he/she led the company to recovery and developed the business is a source of admiration for the workers. The incidence of the Achievement norm could then be associated with a process of modelling professional conduct on the person of the director.

Other elements emerged from the interview in support of this conclusion. In fact, the company's annual outing was mentioned, which brings together employees from the various factory units as well as the director. The latter *"mixes with us and spends the whole day with us"*. The proximity, the simplicity and the informality of this ritual contextualise the description given of him. Furthermore, the attribution of new skills and employees' on-going learning are underlying axioms to the running of the company, since they are considered to be one of the factors that might determine organizational survival.

Another principle that structures management is the organization and coordination between sectors. Underlying the connecting mechanisms between the different areas, there is an *"esprit de corps, a team spirit"*, which is fostered and encouraged, for example through the aforementioned leisure activities organised by the administration.

The organizational focus is, however, on what is happening on the outside so that the firm can acquire the necessary knowledge to develop internal skills in line with external changes. This framework is shared by the employees: 32.2% of the respondents, whose answers are grouped into the category others, pointed out the institution's open and innovative nature as well as the need to adapt to the environment, which is understood to be a question of natural selection.

The principles mentioned are intended to create a quality image for which the firm aims to be recognised and which is affirmed in terms of provision of services and products: *"basically, quality of service ... We have three main religions: quality, delivery time, and customer service"*, the interviewee added.

In short, the culture of company 1 values and fosters growth, flexibility, and innovation so that it can adapt to its environment and develop a quality image and service. Although the firm's existing structure does not help to achieve these principles, the restructuring process that is underway may contribute to effectively implementing the axioms.

4.1.2. Strategic profile
While data were being gathered, company 1 was undergoing a period of retraction as a result of shrinking activity, both at the level of size and costs.

One of the differentiating aspects of company 1 is the close relations it maintains with its customers. Apart from enabling customers' needs/expectations to be considered more easily, this also allows rapid feedback on the firm's activity and a more precise perception of the business. The firm considers this to be an important advantage because it enables it to stay ahead of its competitors. A second relevant aspect in the marketing and sales policy is the existence of an international strategy; the fact that the company belongs to an international cooperation network has made a considerable contribution to this.

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[1] Given the small sample size, the data were analysed used using non-parametric tests, mainly the Mann-Whitney (for two independent samples), and the Kruskall-Wallis (for more than two samples).

The product line is diversified: the company produces a wide range of clothing, but with a focus on sports and leisurewear. There is also a flexible specialization strategy, i.e. it tries to satisfy old demands that have evolved, at the same time as preserving key skills. The R&D department was shut down as part of the organizational restructuring; but its activities have been transferred to the design centre of the same firm in London.

Although lowering costs is important, it does not guide the production policy; in fact, there is clear concern with producing a product that adapts to customer requests/needs at the same time as keeping production processes efficient.

The capacity and willingness to acquire technological knowledge seems to be the basis of the entire strategic plan: production units are constantly renewed. However, the belief that this is merely one aspect of a company's technological base means that it is complemented by internal skills development in order to maximise the use of the equipment/machines purchased. In this way, there is a focus on qualifying human resources and vocational training.

The company shows orientation towards its competitors in that it seeks to anticipate their actions rather than just deal with them: the restructuring process was designed to prepare the company for the fiercer competition the textile and clothing industry has been witnessing since 2005.

There is a connection between the cultural appreciation of learning and development and the strategy adopted: the environment and the customers are perceived as a source of learning and adaptation. The company seeks to incorporate and import knowledge for its own benefit, making it more efficient and better adapted to the environment.

4.1.3. Isomorphic mechanisms

Coercive isomorphic mechanisms are observed when the reasons underlying the expansion in the firm's structure are analysed. As explained by one interviewee, the increase in structure was dictated by customer demands and pressures: *"we grow, we are always growing in accordance with our customers' requests"; "the company has learnt through its customers, from the requests made directly by its customers"; "pressured by customers we already had for more and better deliveries (...) We were pushed a bit by the market"*.

Despite considering that sharing experiences and knowledge with competing companies is positive, he considers that this type of learning has no place in the context of his company: *"in Portugal we work very separately from each other, companies are divorced, the individualistic spirit is predominant"; "no information is passed between companies. From time to time there is a gathering sponsored by this or that brand, but there's never any dialogue or exchange of experiences between competing companies"*. This means that the influences arising from mimetic mechanisms are unimportant for organizational practices.

4.2. Case 2
4.2.1. Cultural profile

As in Case 1, there are no striking differences when the cultural styles are considered; however, Case 2 recorded the greatest difference between the norm with the highest average value, "Achievement" (to recall: belonging to cultural orientation C - constructive) and the norm with the lowest average value, "Avoidance" (which belongs to cultural orientation P/D - passive/defensive). "Avoidance" includes items such as "encourages the employees to delegate responsibilities to colleagues" and "avoid accountability for any problems".

The results also show that employees have difficulty in conveying the image that they have of the company: 60% of the respondents mention the values which they consider guide the organizational action as well as the adjectives they think best characterise the company. 40% of the respondents think that the company products are the object that best symbolises the business. As for the meanings attributed to the identified objects, the most common answer mentions an instrumental connection: *"with these resources I produce this"*. One reason for this is the meaning attributed to product characteristics and to the response used to complete the phrase: *"with these resources the objects manufactured are..."*. Nevertheless, since most respondents did not express the image they have of the company and/or business, it can be understood that the meanings given are divided between answers associated with management and with organizational climate.

In line with the trend, many of the respondents (46.4%) used words from the category relative to the values that underscore organizational action to describe the company. With regard to the business, the

most common response refers to organizational growth (19%); there is, however, a wider range of responses.

Most of the respondents (68%) chose people who occupy management posts. The descriptions given were based mainly on the professional conduct of these people. The person named by the largest number of respondents is the company's general floor manager (39%).

Management is based on a set of traditional assumptions which are reinforced by a hierarchical structure. There is a clear belief that organizational competitiveness must be based on rigour and on making simple, quality products in detriment to flexibility and innovation. The principle expressed is: *"simplicity but with quality, meeting deadlines, serving well"*.

Views on employee training are consistent. In other words, the way in which employees are provided with the skills necessary to do their jobs is also conservative: *"when we have a new employee, he spends some time watching our best worker in the area he's going to be employed because in order to learn, you have to be with the best"*.

The loyal customer portfolio allows the company to shield itself from the turbulence of its environment and to feel settled. It has allowed the company to shut itself inside an "artificial cocoon". This is clear in several of the responses given: *"each company has its own business and no-one knows what goes on anywhere else... I've never been governed by what was happening in someone else's house"; "we forge our own path. What works in one place might not work in another"*.

The perception that this form of organizational sustainability is viable, i.e., one that does not involve change or at least any radical modifications, is latent throughout the organizational activity. This has been driven by a need for security and stability: *"I've never been very daring when it comes to experiments"*. The need for stability can also be seen when the interviewee mentions how he has tried to maintain not only customers, but also his working team: *"I've always had the same team, most of them have worked here from the start - I've never had to fire anyone"*. This kind of practice allows them to be *"capable of trusting our colleagues. That's the only way things work!"*

4.2.2. Strategic profile

Company 2 is passing through a stable period since nothing has been undertaken to modify the structure, company positioning, or organization of the production process. There is clear orientation towards the customer, or rather the company's capacity and willingness to respond to the customer's needs. An extremely close and attentive relationship has been established with the customers: they are perceived as true partners with whom to establish close ties, since the company's success is considered to be closely related to the capacity for finding good customers and making them loyal to this relationship. There is a greater focus on satisfying the requests and orders than identifying and analysing needs. In other words, the main concern is to carry out the customer's request in the most perfect way.

The product line is limited: the company follows a strategy of strict specialisation in which the company's activity is limited to a specific product: making pajamas. They focus on simple but good quality products. The product range developed by the company is stable. Any changes that are made are related to updating the products to keep up with fashion trends. Activities related to R&D of new products or production processes are non-existent. They opt for a visit to international trade fairs to get to know the market trends and then apply these to their line of products.

Orientation towards competition is practically non-existent due to the belief that each company is unique and therefore the practices of competing companies are not suited to the realities of other firms. This means that the dimension of strategic elaboration is neglected.

The capacity to acquire and use new technological knowledge is limited. Equipment suppliers are sources of privileged information when there is the need to purchase new equipment. However, the administration prefers to purchase equipment that *"has already been proven"* or has already been validated by the market even when they have been given positive information by suppliers.

It is therefore clear that the organizational strategy is closely related to the cultural profile. The results obtained through the outlined strategy contribute towards reinforcing the cultural beliefs that underlie them.

4.2.3. Isomorphic mechanisms

The interviewee gave no indications in his answers of coercive mechanisms that would have influenced organizational practices. By closing itself in, the firm has become immune to these kinds of pressures and demands.

Although the interviewee stated at various points that the specific nature of each company does not allow for experiences to be compared or knowledge to be imported, there are some inconsistencies in his statements. The divergence arises when he mentions that he only purchases equipment that has shown practical results. He therefore uses the experience of other companies to offset the uncertainty concerning technical needs or problems. This suggests that mimetic isomorphic mechanisms are at play in this situation.

The way the interviewee perceives the internal and/or external environment seems to be associated with his 20 years of administration experience. This was preceded by experience in a different segment of the industry. According to the interviewee, the existing demands are so different that applying this experience is of little use: *"the branch is the same but the concerns are totally different. In resale we buy the ready-made product and all we have to do is place it in the shops"*.

4.3. Comparative Analysis
4.3.1. Cultural profiles
The data shows that in both cases the "Achievement" norm is that which obtained the highest average value, while it was "Self-actualising" (cultural orientation C - constructive) in the pilot company. The latter denotes the workers' involvement in the work, as well as a critical attitude which enables/facilitates their involvement in new tasks and the justification of demands. Both factors show an orientation towards tasks, with the former highlighting greater orientation towards the work group. However, analysis shows that while in company 1 the second norm ("self-actualising") coincides with the first (since it fosters involvement in new tasks) in company 2 the second (and third) norm contradicts the first since it stimulates an attitude of resignation towards work ("Dependent" and "Approval", both belonging to cultural orientation P/D - passive/defensive).

In all three cases, the life of the company was characterised by an initial scarcity of resources. However, for both companies 1 and 2 the initial limitations are associated with a state of bankruptcy. The pilot company analyses its path from an individualist perspective, while the others associate their recovery with the customers. Company 1 differs from the others in that its recovery was guided by a plan established a priori, and resorted to state funds and subsidies. The others followed the path that opened up as they expanded.

The beliefs expressed relate to different management practices, although their underlying purposes are similar: they all aim to develop a product and a quality image. Nevertheless, it is the employees of the pilot company who show greater understanding of the objectives identified by their managers, since it is these workers who more often associated the concept of quality with their company. The pilot company highlights efficiency and orientation towards the task, while in Case 1 it is the need for learning, organizational development and adaptation to changes in the environment that are stressed. In Case 2, customer loyalty is highlighted as being a key factor for its subsistence and is attained by producing simple but good quality goods which satisfy its customers' needs.

In short, the most marked differences are between Cases 1 and 2. Company 1 adopts an open attitude towards its environment, and perceives this as an advantage for its growth, as well as develops an attitude of anticipation and of pro-activity. Company 2 has shut itself in a cocoon of its own creation, shielding itself in this way from the turbulence that surrounds it. Company 1's orientation towards development is contrasted by the need for stability and security in company 2. The pilot organization falls between the two: despite having a culture which values stability and organizational control, it does not shut itself off completely from its surroundings. Nevertheless, its conduct differs from that of the first company as it limits itself to reacting to the changes that occur.

4.3.2. Strategic profiles
The strategies adopted by the three companies are heterogeneous. While the pilot company shares with number 2 the fact that it is passing through a stable period and has a limited and relatively unaltered product line, they differ in their relations with customers and in their attitudes towards competitors and technologies. The pilot company has a distant and relatively recent "relationship" with its customers, maintained by means of intermediaries; Company 2, on the other hand, maintains a long-lasting and close relationship with its customers, considering them to be its partners. Company 1 has a more diverse group of customers, which also determines the diversification of its products. Regardless of the duration of the commercial relationship, there are very close ties, which are considered to be a competitive advantage. It can therefore be concluded that it is Company 1 which uses the information

provided by its customers most visibly for its own benefit.

The pilot company is that which expresses and places the most importance on technologies and on updating them as this is the way it runs the other strategic orientations. Company 1 also values them. However, their importance is not expressed so explicitly because they are so deeply entrenched in the firm that the top management does not consider them worth mentioning. Company 2 is more reticent about purchasing new equipment. On the one hand, it does not consider more advanced equipment to be necessary and, on the other, the purchase of new equipment is mediated by a set of measures which guarantee that it is a secure investment.

The company that pays most attention to the competition is number 1, and it attempts to anticipate its competitors' movements. The same pro-activity was shown by the pilot company, although the strategy developed was more rudimentary and less elaborate. Company 2 is found at the opposite extreme, which can be explained by the association with its loyal customer portfolio: it has no immediate need to compete with other companies.

4.3.3. Isomorphic mechanisms

The pilot organization shows more evidence of coercive isomorphic mechanisms because if it fails to satisfy its customers' demands, the contractual bond might break. While structural alterations were carried out initially in company 1 in order to meet customer demands, this is currently not the case, or at least not with the same intensity. Once again, company 2 is apparently in the opposite position: no evidence of this kind of pressure was found.

On the other hand, it is company 2 that manifests more mimetic isomorphic mechanisms. Its need for security and its aversion to risk and to change makes the organization more susceptible to this type of mechanism. Although company 1 believes that exchanging experiences can bring countless benefits to firms, it does not consider the conditions to be right for doing so. The pilot company pays little attention to this issue as it considers that it will be unable to take advantage of the benefits because it tends to be copied by its competitors.

In sum, despite the existence of a few isomorphic mechanisms in the three cases, they do not seem to be powerful enough to create the type of homogeneity described by some authors [3] in a cluster. In fact, the data show that there is greater evidence for these three companies to have their own language, culture, strategy, and so on.

5. DISCUSSION AND CONCLUSIONS

5.1. Discussion and contributions

This research allowed examination of the strategic orientations and cultural profiles of companies in a cluster in Portugal. The results indicate that the companies having two distinct commercial attitudes belong to distinct groups of cultural profiles: while the sub-contracted company has a set of practices and beliefs that lead to development, learning, and innovation, the second company has a culture aimed at stability and security. The differences at the level of strategic orientations are also very clear, which is in line with the work of Laroche and Nioche [26]. In fact, according to these authors, there is a profound connection between strategy and organizational culture, since the dominant paradigm is at the heart of a cultural web. Despite the differences, in this study the companies belong to the same cluster.

This result departs from the work of Pouder and St. John [5] as there is no evidence of common and/or shared cultural and strategic profiles. The work of Hampden-Turner [40] offers some hints with regards to why cultures are dissimilar. The author explains that organizational cultures are subject to a "break up" process, resulting in a series of different sub-cultures. This phenomenon of differentiation arises because sub-cultures are built around different functions and roles. In the observed companies, one can therefore hypothesise that in an initial phase there was a culture common to all the organizations, and only later the different commercial attitudes dictated the break up process described by Hampden-Turner [40]. However, the cases showed that differences in the case cultures are too large to be explained by this differentiation process.

Additional explanations for the differences can be put forward when one looks at the people in charge of the companies and the managers' professional experiences, as well as at the role that the founders and administrators play in developing firm culture [38]. In reality, the administration of the sub-contracted company consists of an English textile group, which may have influenced the firm's culture as well. This explanation of a national company profiling different values from those of the national culture is worth examining in future studies. According to Hofstede [41], British culture has a

greater control of uncertainty than Portuguese culture. The processes of development, change, and innovation are considered to be rather unstructured situations that involve risk and ambiguity. If the English administration has succeeded in mitigating this resistance, it might be possible to understand why it is different to the others. On the other hand, most of the professional experience of the founder and administrator of the pilot company comes from Germany, which, like Portugal, has a low control of uncertainty [41]. The similarity with company 2 at the level of orientation towards stability and security can therefore be understood.

This company's affinity with company 1 in terms of the pattern of action it reveals (which is clearly more assertive and competitive than the pattern of company 2), might be explained by the fact that Germanic and British cultures are male, while Portuguese culture is female [42].

The pilot company and company 2 do not value the sharing and exchange of experiences among companies, which may be explained by the fact that they are family businesses. According to Porter [11] this feature, which is common to around 70% of Portuguese firms, is associated with their individualist attitudes. Portuguese managers do not like working in a team, as mentioned in one of the interviews [43]; this evidence, together with the individualism characterising Portuguese culture, may make forming a cooperative relationship less likely since culturally there are no incentives or necessary motivations. The consequences of this may be significant at the level of firms' competitive capacity and development.

As shown by documentary analysis, cooperation between companies and the exchange of experiences are also essential if the Portuguese TCI is to join more developed textile industries. This is indeed pointed out as a weakness of the Portuguese TCI in the report Textile and Clothing Industry: Environment, Energy and Strategy.

At a cluster level, the results clearly show both a strategic and a cultural heterogeneity, which runs against the predicted isomorphism said to characterise a cluster [5]. The pressures for coercive organizational homogeneity can be seen most intensely in companies that work in sub-contracting. This is because their customers require (and even oblige) that certain requirements must be met in order to fulfil their orders. This situation cannot be transposed to the group of companies which sell their own products: on the one hand, this is because buyers do not exert so much influence as their volume of orders is substantially lower and, on the other, because the product sold is already designed a priori. If this is what theory proposes, the results from this study only partially support such assertion: the pilot company does show evidence of coercive isomorphic mechanisms, but the same was not so clear with regard company 1.

Company 2, on the other hand, is expected to react differently to customers. Its customers are perceived as partners rather than customers and therefore their demands are not considered as such. Relationships with customers are very often of an informal character, and informality has to take place before formality sets its way. This is also in line with the national culture, in which relationships between people are key even in professional settings [44]. Such informal relationships are widespread even across companies competing in the cluster, since both managers and employees often come across with each other in the villages and towns in which they live. Although such informal relationships may be used to strengthen and motivate the aspects of the business that unite the cluster, there is no reason to believe that they are the basis for formal and professional relationships. Rather, they are likely to be limited to primary functions such as building trust and sharing information and knowledge regarding certain non-important business matters. This is an important future venue for research, since there is not much available theory that explains the interplay between formal and informal relationships within clusters.

In relation to the factors that contribute to organizational heterogeneity, the academic path of the interviewees, which is considered fundamental in analysing these issues, was very different. They do share some thoughts, however. For example, they all seem to agree that the TCI is facing its "toughest test" ever. When they are asked how their companies need to cope with such "test" (i.e. how to respond to the environment), the divergences again materialise.

Since this is the region with the highest rate of educational failure and school drop-outs, as well as a level of primary and secondary education below the national average, some of the ways of transmitting the normative rules of professional action never took effect. Nor does this educational scenario do anything to encourage new learning and professional requalification.

5.2. Conclusion and future studies

Overall, these results suggest that although clusters share some features, characteristics and functions, as initially suggested by authors such as Porter, they nevertheless are composed of companies operating with different moods, attitudes, and even strategic and cultural orientations. In other words, clusters might share the same outcomes and reveal similar performance, but they are different in the way entities in it are combined. This is an extension of the concept of equifinality [45] to the literature on clusters, which may help explaining why similar clusters show distinct compositions at the level of involved entities.

It would be interesting to replicate this study so as to understand how the phenomenon observed can be extended to other firms located within the Ave Valley and to other clusters. In these future studies, it would be interesting to map out the mental models of the interviewed directors/managers so as to access the elements and concepts which make up these maps. To do so, Kelly's repertory grid [20] could be used, which would enable the competitive environment to be defined and the nature of the choices made to be understood.

Finally, a longitudinal observation of clusters would offer a unique opportunity to assert how cultural and strategic profiles react and interact with the cluster's environment, and how they change in time. Furthermore, such complex study would allow observing how isomorphic mechanisms influence the development of the various entities in the cluster.

To conclude, the case study strategy reported in this text gave some important insights with regards to the psychological and social basis which underly clusters and clustering processes; however, an even larger number of questions emerged from the research results, which are worth taking into account in future studies.

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