

ABSORPTIVE CAPACITY OF THE CLUSTER RESOURCES AND THE LOCAL BUZZ PROMOTED BY PARTNERING AMONG GOATISH PRODUCERS AT CARIRI PARAIBANO REGION

A PROMOÇÃO DA CAPACIDADE ABSORTIVA DOS RECURSOS DE CLUSTER E O LOCAL BUZZ ATRAVÉS DAS ASSOCIAÇÕES DE PRODUTORES DA CAPRINOCULTURA NO CARIRI PARAIBANO

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ABSTRACT

Purpose – This paper contributes to the literature on local buzz and the absorptive capacity of firms aiming the competitiveness of the local productive agglomerations. The associations of producers of goat's milk and derivatives of Cariri Paraibano were analyzed. They form a cluster of 881 partners and are responsible for the production of approximately 8,631 liters of goat milk per day. The research objective was to identify, based on the local buzz, the participants' awareness about the clustering benefits and the absorption of cluster resources.

Design/methodology/approach – It used a qualitative methodology based on a case study. Various sources of evidence were used to guarantee the reliability of results. So, it performs triangulation of in-depth interviews, direct observation, and content analysis of documents.

Findings – The results indicated the existence of knowledge about goat production, a similar level of absorptive capacity between the producer associations, and a degree of awareness of the advantages of being agglomerated. Also, findings evidenced external knowledge not absorbed by the producers that could be linked to the incompleteness of the association's role as cluster vectors.

Originality/value – The sector dynamics depend on the organizations' view on the importance of information and its use in the operation of firms in order to increase their absorptive capacity.

Keywords: Absorptive capacity; Local buzz; Clusters; Cluster resources.

RESUMO

Proposta - Este artigo contribui para a literatura sobre *local buzz* e a capacidade absorptiva das empresas visando a competitividade dos arranjos produtivos locais. Analisou-se as associações de produtores de leite de cabra e derivados do Cariri Paraibano que formam um aglomerado produtivo de 881 parceiros responsáveis pela produção de aproximadamente 8.631 litros de leite caprino por dia. O objetivo da pesquisa foi identificar a partir do *local buzz* a consciência dos participantes sobre os benefícios de integrarem este cluster e a absorção dos recursos do cluster.

Desenho Metodológico - A metodologia aplicada é qualitativa, sendo um estudo de caso que realiza a triangulação de fontes de evidências, entrevistas em profundidade, observação direta e análise de conteúdo de documentos.

Resultados - Os resultados indicaram a existência de conhecimento sobre a caprinocultura, similaridade no nível de capacidade absorptiva entre as associações do cluster, e um grau de consciência das vantagens de estar aglomerado. Também indicaram que existem conhecimentos externos que não estão sendo absorvidos pelos produtores e que podem estar vinculados a incompletude do papel das associações como vetores do cluster.

Originalidade - A dinâmica do setor depende da visão das organizações sobre a importância da informação e consequente, seu uso na operação das empresas a fim de ampliar a capacidade absorptiva das mesmas.

Palavras Chaves: Capacidade absorptiva; *Local buzz*; Aglomerados produtivos; Recursos do cluster.

1 INTRODUCTION

Few constructs have received as much attention from academics and managers of the regional economy as the concept of Cluster, emphasizing a widespread belief that productive groups can generate economic prosperity (Spencer, Vinodrai, Gertler, & Wolfe, 2010). One of the premises that support this belief comes from the geographical proximity that enables local interactions and the production of valuable tacit knowledge, the resources of the cluster and that can be propagated through the so-called local buzz (Bathelt, Malmberg, & Maskell, 2004; Musil & Eder, 2016).

Co-located companies tend to share formal and informal information that is accentuated by geographical proximity (Ganesan, Malter, & Rindfleisch, 2005), and when they get closer, they start to show similarities in resources, cost structure, mental models and competitive behaviors while differentiating themselves from companies that are out of that concentration (Molina-Morales, & Martínez-Fernández, 2004). This derives from dynamic knowledge flows in the face of multiple interdependencies and difficult to control (Tallman, Jenkins, Henry, & Pinch, 2004), but which can be the drivers of regional competitiveness.

The success and maintenance of the structure of the productive arrangement make it necessary for the participants of the cluster to realize the advantages of participating in a specific agglomeration (McCann & Folta, 2008). The external resources of the locality are accessed through the internal resources of the companies, showing continuous learning processes through the combination and accumulation of knowledge that denotes the absorptive capacity of the firms. This absorptive capacity is crucial to effectively exploit external know-how and obtain benefits from the complementarities between internal and external resources (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009; Hervas-Oliver, Sempere-Ripoll, Rojas Alvarado, & Estelles-Miguel, 2018).

Studies involving the microeconomic level of companies in the cluster have received less attention from the mainstream among studies in the area (Hervas-Oliver & Boix-Domenech, 2013),



which reinforces the need to investigate the absorptive capacity of cluster companies to access knowledge enhanced by the local buzz. Currently, in the database of Web of Science, one of the largest repositories of peer-reviewed scientific research and which brings together articles from different countries, there are 289 scientific articles relating to both themes, local buzz or atmosphere of the cluster and clusters. All this in the SSCI, CPCI-SSH, and ESCI indices, with the Bathelt et al. (2004) paper being the most referenced. Although the cluster literature has received attention from researchers, this reduced number of scientific articles that address the effect of the local buzz on the absorption of cluster resources is still low, leaving a gap in the area.

Thus, this article was developed to contribute to the theoretical deepening of issues related to local buzz and the absorptive capacity of co-located companies to improve competitiveness added to the need to commit to applied research for regional economic development.

The objective of the research was to identify, from the local buzz, the participants' awareness of the benefits of integrating a cluster aiming at the absorptive capacities between producers of goat's milk and derivatives of Cariri Paraibano. The state of Paraíba in Brazil, the region called Cariri, has a relevant concentration of producers linked to goat farming, with particular emphasis on the production of goat's milk and derivatives, which are represented by associations, responsible for processing (pasteurization and packaging). The analysis of the local buzz was based on the perception of the five groups of cluster resources proposed by Moreira, Moraes, & Pereira (2019), which are Production Resources, Demand, Supply and Support Industry, Relationships at the horizontal level within the cluster, and, Relationship with local institutions. Therefore, it is a descriptive study of qualitative methodology, being a case study for which primary data were obtained predominantly through in-depth interviews with participants in producer associations.

2. CREATING VALUE THROUGH THE CLUSTER: FROM TRAINING TO RESOURCE CAPTURE

Michael Porter, considering the criticisms of his initial contributions (Porter, 1979), reviews his work towards the development of a dynamic theory of strategy. The author starts to consider the managerial choices arising from the analysis of the external and internal environment. Besides, he recognizes the contribution of game theory models, as he realizes that the pattern of the strategic choices of the competitors is also dynamic; the influence of environmental commitments and uncertainties; and, the contributions of resource-based theory (Porter, 1991).

It is deduced from the Porterian work that success can be geographically located, being what this author called the competitive advantage of nations, serving as a basis to explain clusters of competitive industries. A structure is established, captured by the Diamond Model, composed of four extended attributes of the environment close to the firm and which influence the ability to innovate and develop an *upgrade*. Thus, the conditions of the factors, terms of demand, related and support industries, and, strategy, structure, and rivalry of the firm were attributes that establish interdependence relations and mutual reinforcement, and, when analyzed, point out the way in which firms must perceive opportunities and be aware of the pressures they suffer to act and remain competitive.

The analysis of the competitive advantage of nations occurred in a period similar to the advances in the Theory of Industrial Districts, which highlight the perspective of co-location and its impact on regional development, as well as the formation of productive clusters (Pyke, Becattini, & Sengenberger, 1990). The competitive advantage becomes as one derived from activities that interrelate and form value chains, as it improves the use of resources and facilitates the acquisition of capabilities (Porter, 1998).



In turn, an inspiring perspective for organizational researchers comes from studies dealing with Internal Resources but also seeking to understand the influence of the territory on the performance of companies (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009; Hervas-Oliver & Albors-Garrigos, 2009; Molina-Morales, & Martínez-Fernández, 2004). This analysis is especially necessary when one wants to understand the dynamics of value creation of geographically concentrated companies, in which strategic resources cannot be understood without considering the influence of shared resources or local resources (Bathelt et al., 2004). The interactions between the internal resources of the companies and the resources of the locality enable them to be heterogeneous, given the contextual aspects in which the resources and capacities are combined, in addition to other dynamic interactions that they establish in the environment in which they operate (Hervas-Oliver & Albors-Garrigos, 2014; Hervas-Oliver et al., 2018).

Local resources represent those intangible resources and capacities shared by companies in the same industrial district (cluster), and suggest the application of the same logic aimed at achieving sustainable competitive advantage (Barney, 1991), being difficult for companies that are external to the cluster. This type of knowledge is based on routines linked to the history of companies, business practices, specific institutions, and the multiple links between the actors (Molina-Morales, & Martínez-Fernández, 2004). This perspective of the cluster resources is strongly influenced by the Knowledge-Based Theory, in English, *Knowledge Based-View* (KBV), which emphasis is on the interactions and exchanges of knowledge between the companies of the cluster, which ultimately represents the Local Buzz (Malmberg & Maskell, 2002; Tallman et al., 2004). Thus, it is through the local buzz that dynamic capabilities emerge from resources, producing from KBV a new understanding of the sustainability of competitive advantage for clusters and the companies within them, subsidizing the reasoning built to understand the resources of the locality.

In order to understand this logic, the existence of stocks of specific knowledge from the company and the cluster is admitted, understanding that the specificity of each level is protected, in part, by the asymmetry in the knowledge flows. These asymmetries result from the interaction dynamics of knowledge within the company and between the company and the dynamics of the cluster that surrounds it (Arikan, 2009; Tallman et al., 2004). Tallman et al. (2004) show two types of knowledge: those specific to companies and those specific to the cluster.

In each of these modalities, it is possible to access the type of component knowledge (identifiable elements in the body of knowledge, relatively transparent, ranging from technical to systematic and relatively easy to move between companies) and architectural knowledge (refers to a complex system of organizational routines that coordinates and integrates the component knowledge, whether of the company or the cluster, has a rooted nature, is not transparent and has ambiguous causes, in addition to being relatively immobile among organizations). From the perspective of companies, these contents run through the concepts of routines (Nelson & Winter, 2002), organizational resources (Barney, 1991), and dynamic capabilities (Eisenhardt, & Martin, 2000; Teece, Pisano, & Shuen, 1997).

The assimilation of cluster knowledge by member companies will depend on the absorptive capacity of each company and its resources and capabilities that moderate the combination and the accumulation process (Hervas-Oliver & Albors-Garrigos, 2009; Hervas-Oliver et al., 2018). Even considering the distinct differences in knowledge of each firm, their absorptive capacity within the cluster tends to be close, given the strength of the multiple and dynamic interdependencies that happen within it (Tallman et al., 2004). On the other hand, when compared with companies outside the cluster, the differences tend to reveal themselves more apparently rooted in a component of systematic and tacit knowledge, which requires a deep understanding of their meanings, much more than simple technical know-how, going in addition to what is agreed as market compensation



and not being formally transmitted, representing part of common knowledge to members, whose control of the flow of information is virtually impossible (Tallman et al., 2004).

The fact that the companies are geographically close suggests that the sharing of knowledge due to the industrial atmosphere (Marshall, 1920), or local buzz, (Bathelt et al., 2004) makes them get closer to each other, bringing their competitive behaviors together (Pouder & St. John, 1996). That means that they are different from companies that are outside this concentration, as they do not have access to the cluster resources (Molina-Morales, & Martínez-Fernández, 2004).

The integration between the presented approaches allows systematization of value creation sources by the geographically concentrated companies, as seen in Table 1, showing the cluster's groups of resources according to the division proposed by Moreira et al. (2019), and which represents a consistent theoretical survey in search of the recognition of the sources of knowledge coming from the local buzz.

Table 1 - Cluster's resource groups

Cluster resources/knowledge
<p style="text-align: center;">PRODUCTION RESOURCES (Malmberg & Maskell, 2002; Marshall, 1920; Nelson & Winter, 2002; Porter, 1991; 1998)</p> <ul style="list-style-type: none"> • The region's natural resources (climate, water availability, etc.); • Human resources (specialized, qualified and experienced); • Capital resources; • Infrastructure resources (physical, administrative, information, scientific and technological);
<p style="text-align: center;">DEMAND RESOURCES (Gereffi, Humphrey, & Sturgeon, 2005; Porter, 1991, 1998)</p> <ul style="list-style-type: none"> • Reputation and attractiveness of the location for the national buyer market; • Knowledge of current and future needs of national and international markets; • Knowledge of the demand characteristics of the different markets; • Incentives for differentiation in production, processing, and marketing; • Access to global buyers and their production and marketing protocols; • Marketing complementarities;
<p style="text-align: center;">SUPPLY RESOURCES AND SUPPORT INDUSTRIES (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009; Bathelt, Malmberg, & Maskell, 2004; Eisingerich, Bell, & Tracey, 2010; Malmberg & Maskell, 2002; Porter, 1991, 1998)</p> <ul style="list-style-type: none"> • Availability of knowledge capable of reducing transaction costs; • Base of suppliers and specialized and solid support teams; • Suppliers favor organizational flexibility in the face of different markets; • Supply of machinery and availability of specialized services; • Encouraging innovation and creating new businesses; • Dissemination of best practices (benchmarking);
<p style="text-align: center;">RELATIONSHIP RESOURCES AT THE HORIZONTAL LEVEL INSIDE THE CLUSTER (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009; Bathelt et al., 2004; Dyer & Singh, 1998; McEvily & Zaheer, 1999; Moreira, Moraes, Hervas-Oliver, & Laurentino, 2019; Porter, 1991, 1998; Tallman et al., 2004; Ter Wal, 2013)</p> <ul style="list-style-type: none"> • Cooperation between companies to exchange market information and technical issues; • Physical proximity enhances close contact between companies and the development of bonds of trust; • Sharing inputs and physical structure; • Cooperation in search of collective achievements for companies in the region/sector; • Competition and cooperation between companies; • Complementarities resulting from cooperation;



RELATIONSHIP RESOURCES WITH LOCAL INSTITUTIONS

(Gereffi, Humphrey, Sturgeon, 2005; Hervas-Oliver & Albors-Garrigos, 2014; Hervas-Oliver & Boix-Domenech, 2013; Malmberg & Maskell, 2002; McEvily & Zaheer, 1999; Molina-Morales, & Martínez-Fernández, 2004; Peng, Wang, & Jiang, 2008)

- An offer of new technologies associated with the improvement of products and services;
- Support in the qualification of labor;
- Actions aimed at strengthening business competitiveness vis-à-vis, external competitors;
- Research and development activities to ensure higher productivity;
- A joint production of knowledge, with the possibility of financing innovations;
- Institutional standard offer;
- International production and commercialization support.

Source: Elaborated by the authors from Moreira, Moraes, & Pereira (2019)

Knowledge flows in this environment are dynamic in the face of multiple interdependencies, and their control is virtually impossible (Tallman et al., 2004). Access to knowledge results from the different levels of absorptive capacity, showing continuous learning processes through the combination and accumulation of knowledge (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009).

Although knowledge is potentially transparent and mobile, not all components move among companies within the same cluster in the same proportionality (Tallman et al., 2004), that means local knowledge is not “free” in space, being limited by the ability which each company has to learn and take knowledge as an advantage (Hervas-Oliver & Boix-Domenech, 2013; Hervas-Oliver & Albors-Garrigos, 2014). Consequently, it is possible, even, that some companies do not perceive advantages when participating in a particular agglomeration (McCann & Folta, 2008). In this way, the cycle identified by KBV, generated in clustered companies, and which involves the relationship between clusters’ resources and the dynamic resources, leveraged by Local buzz, is not completed in the same way for all companies in the cluster, as it varies according to the absorptive capacity of each one.

3. RESEARCH METHODOLOGY

The case study methodology is appropriate when there is little research on the subject (Larínaga & Rodríguez, 2010; Yin, 2012), allowing to use a variety of data sources, such as interviews, which serve as a highly efficient method of collecting rich empirical data (Eisenhardt, & Graebner, 2007). Both as a teaching and research methodology, case studies came to be used in the early twentieth century in American business schools, led by Harvard, to study business phenomena (Stoecker, 1991) and have since been frequently used for cluster analysis.

This qualitative case study analyzes the absorptive capacities of producers of goat’s milk and derivatives of Cariri Paraibano regarding the knowledge potentialized by the local buzz. This analysis derived from the categories defined by Moreira’s model (2019), that is, Production resources, Demand, Supply and Support Industry, Relationships at the horizontal level within the cluster, and Relationship with local institutions.

Respondents represented organizations such as business associations. The sampling was intentional non-probabilistic, that is, one in which the selection of elements of the population depends in part on the researcher’s judgment. However, to ensure the validity and reliability of the results, the identification of the associations was based on information obtained from support institutions, with emphasis on the Agribusiness Incubator of Cooperatives, Community Organizations, Associations and Rural Settlements in the Paraíba Semiarid Region (IACOC), and the Program for Studies and Actions for the Semiarid Region of the Federal University of Campina Grande (PEASA / UFCG).



Thus, nine in-depth interviews were conducted with leaders of five associations. Although there is no census record, it is estimated, based on crucial institutional information, that the researched associations represent a volume of more than 50% of the region's producers, guaranteeing the external validity of the research, as indicated by Larrinaga & Rodríguez (2010).

Table 2 presents a summary of the characteristics of the associations participating in this study. From these data, it is possible to infer that the time of activity of the five organizations is over ten years, with approximate foundation periods. Also, the organizations studied a total of 881 participating producers located in the small area of Cariri Paraibano, thus generating a geographical density of APL. This set of information demonstrates a degree of consolidation of APL in the form of associations of small producers.

Table 2 – Sample characterization

Association/ Cooperative	Location	Operating time	No. of em- ployees	No. of pro- ducers
ACCOP (Association of Goat and Sheep Breeders)	Prata – PB	17 years	12	70
Amparo Agroindustrial Condominium – PB	Amparo – PB	17 years	10	200
AGUBEL (Management Association of the Dairy Processing Plant)	Sumé – PB	14 years	7	280
ASCOMCAB (Association of Goat and Sheep Breeders of the Municipality of Cabaceiras)	Cabaceiras - PB	19 years	6	300
APOCCA (Cariri Sheep and Goat Producers Association)	Caturité - PB	16 years	4	31

Source: Elaborated by the authors.

The data collection privileged interviews with at least one officer from each association/cooperative, and nine in total. The interviews were in person and place, having been carried out in March 2017, based on a script of semi-structured questions (Yin, 2012), with an average duration of 50 minutes. The elaborated questions represent an adaptation of the theoretical model of Moreira, Moraes, & Pereira (2019), regarding the analysis of groups of resources/knowledge of the cluster, already presented in the theoretical basis of this study.

As for internal validity, as a way to increase the reliability of the case studies, Larrinaga & Rodríguez (2010) recommend triangulating data sources. Thus, besides the development of interviews, there was an analysis of public and private documents related to the organizations surveyed and the analyzed cluster, in addition to technical visits to the site and associations. Table 3 shows a summary of the survey's technical data.



Table 3 - Technical data for qualitative research on Local Buzz in productive agglomerations of goats in the Cariri Paraibano region, Brazil

	WHO?	HOW?	WHY?
Semi-structured in-depth interviews (March / 2017)	Nine interviews with directors of goat farming associations in the Cariri Paraibano region.	50-minute interviews; topics related to the interviewee's perception of cluster resources, and advantages of association between producers.	To identify the local buzz, and therefore how companies perceive the advantages of co-location, generating collective value that can be absorbed by companies on an individual level
Documents From the year 2010 onwards	Constitutive documents of the goat breeding associations in the region; performance reports; minutes of meetings, local public policy documents for the sector.	Most of the documents were provided in print by the organizations, and a small number of items related to the public policy were available online.	To identify patterns of behavior, conceptions of ideas, creation of value from the action of the group, as well as the perception of the advantages of the formation of productive groups, to highlight the categories proposed by Moreira et al. (2019).
Direct non-participant observation	Visit associations and the region of goat farming.	Participate in association meetings and technical visits to the goat farming region.	Direct observation to identify evidence of the items commented by the interviewees.

Source: Source: Elaborated by the authors.

Scientific rigor and analytical depth were present in the data analysis, probably the most problematic phase in the development of a qualitative case study (Flick, 2018). In this research, we opted for the development of content analysis, which, following the paths of Bardin (1977), consists of three stages of analysis of the material: 1) pre-analysis; 2) exploration of the content; 3) treatment of results, inference, and interpretation.

The theoretical and methodological triangulation demanded constant reflexivity from the researchers, with the saturation occurring as the constructions became more robust and stable (Flick, 2018).

4. CASE STUDY: APL OF GOAT'S MILK AND DERIVATIVES OF CARIRI PARAIBANO, BRAZIL

Ovinocaprinocultura is an activity of high relevance in the primary sector of the economy of the state of Paraíba, Brazil. These Clusters or Local Productive Arrangements (APLs) are in the regions of Cariri, Curimataú / Seridó, and Sertão, and constitute one of the primary sources of income for the population of these locations (IBGE, 2015). For this research, only the Caprinocultura do Cariri Paraibano was used, which concerns the exclusive production of goat's milk and its derivatives. In Paraíba, since the year 2000, dairy goat farming has received incentives through the purchase of milk production by the state government and the actions of the "Pact New Cariri" (Pacto Novo Cariri) which, among other activities, promoted a system of acquisition, industrialization, and distribution of milk, the "Milk Program" (Programa do Leite), aimed at distributing milk to low-income children and the elderly. According to reports and documentary analysis, given many small goat milk producers, the alternative used by the region was to form associations that would support the milk production process. The producers are responsible for removing the milk from the goat and forwarding it to the associations that carry out the milk's pasteurization and packaging activities for later commercialization.



The information extraction presented in this section was aimed at the groups of resources in the cluster, as shown in Figure 1 (Moreira et al., 2019).

4.1 Production resources

This group of resources, considered production, deals with the natural attributes of the region for the development of the proposed activity, in addition to humans, capital, and infrastructure (Moreira et al., 2019). In the perception of the production resources for goat farming in the Cariri Paraibano region, the interviewees highlight the typical climatic problems of this Brazilian region - low levels of rain and much sun - but that the activity, despite everything, has proved to be resistant and has consolidated as an essential source of income for them. Rainier years enhance higher milk production. Also, through the interviews, it is extracted that the presence of qualified labor in the region, as well as resources of physical, administrative, and information infrastructure offered by the local associations and public organizations. Besides, the interviewees show pride in this traditional productive activity in the region, as can be seen in the speech of Director 1 transcribed below:

(...) nobody in Brazil produces like us. Our milk is different because our producers have been doing this for years; it is a tradition that has spanned many generations. The love for the goat culture started back there; I wasn't even born. Producers usually deliver their production to associations, which process and process milk (Agroindustrial Condominium_director 2).

According to the interview with ACCOP (director 1), *"the roads in the region are excellent, and this has facilitated the transport of milk between the producers and the association, as well as delivery to the consuming public."* Besides, most respondents indicated that the condition of the associations' machinery was very favorable, enhancing a good volume of processing. The interactions between the absorptive capacity of companies concerning cluster resources and the existence of strategic resources favor the process of creating value and competitive gains for the company and location (Albors-Garrigos, Hervás-Oliver, & Hidalgo, 2009).

The analysis of documents related to the sector and local plans indicated the existence of formal and informal meetings, which generate tacit knowledge exchanges around the culture of goat farming (*Local buzz*). These meetings take place on farms, associations, public squares, among others. Also, the region has labor training centers such as universities, which offer courses related to the municipalities' economic vocation. These aspects end up enabling a physical, administrative, information, scientific, and technological infrastructure that favors specific and quality factors (Malmberg & Maskell, 2002).

4.2 Demand resources

Demand resources are related to serving the market, thus considering the reputation and attractiveness of the group of clustered companies, as well as knowledge about the characteristics of the markets to be helped. Also, this group includes marketing incentives, differentiation, processing, and commercialization (Moreira et al., 2019).

The Demand Resource Group of the Goat Farming Cluster of Cariri Paraibano is related to the regional traditions that generated the reputation and attractiveness of the locality to the buyer market. That also drives demand for existing associations, both from producers and buyers.

It was identified that the primary buyer is the Federal and State Government, through the Milk Program, which absorbs the milk produced for a fixed price, ensuring a particular destination for production. The associations carry out the processing (pasteurization and filling) to be passed on



to the Government, which distributes it free of charge to low-income children and the elderly. Evidence extracted from the interviews indicates that the managers consider the guarantee of demand to be a positive point. However, there is awareness of the high dependence generated by the only buyer, as can be seen in the excerpts of interviews set out below:

“We only have the Government that buys from producers, and we do the rest for them to distribute to the needy population. It’s good because we survive on their own, and it’s bad because if they cut the program, we have no one to produce it for.” (ASCOMCAB_Director 4). “I believe that dependence on the Government is a big problem, but I can’t help but consider that thanks to this program, producers can have their family income right. We have plans to expand production to have other buyers, but that depends on some decisions that still need to be considered”. (AGUBEL_Director 3).

Although the existing demand is mostly related to the Government, the associations have projects to diversify what is currently produced, evidencing the presence of incentives for differentiation in production, processing, and commercialization. It was verified that some associations even have enough physical space and machinery for milk derivations. However, according to the reduction in the production of goat milk due to drought, there is no surplus or remainder, making it impossible to execute diversification projects, as stated below:

“We have an excellent plan to start making milk products like cheese and yogurt again, but what is missing is to have a surplus in production. For that to happen is that case that I already talked about, there is a lack of rain for more goats to be raised and produce more milk, so we could have enough for us to produce milk products”(AGUBEL_Director 3). “We have all the machines to make cheese; we even received training and everything. We are well prepared to diversify. We only need a surplus of milk for this”(ACCOP_Director 7).

All associations are aware of the production protocols and the rules for marketing the production, given the continuous relationship with inspectors who monitor the activity. There is support from research institutions on the quality of milk and insistence on channeling business efforts towards diversification. Successful initiatives were commercialized in the region in the sale of goat’s milk derivatives with high added value on larger family-owned farms. These results indicate that the fact that the associations are located in a traditional region in terms of goat farming, there are advantages of information, in line with the findings of Bathelt et al. (2004). With this, the local buzz in the analyzed cluster enables knowledge about the existing demand and how to act in the face of future demand. Information that is contained in the “cluster atmosphere” as the previous theories mention, regarding the current dependence within the APLs and the ease of information sharing (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009).

4.3 Supply resources and support industries

According to Moreira et al. (2019), the resources of the offer and support industries include the availability of knowledge, supplier bases, machinery, benchmarking, and innovation to reduce costs and serve new markets.

Thus, regarding the supply resources and support industries of goat farming in the Cariri Paraibano, the quality of the inputs, and the excellent relationship with suppliers as well as with the support industries, the sharing of the practices used and the knowledge capable were identified to reduce transaction costs.

All associations corroborated that the existing suppliers meet the expectations on the inputs and raw materials offered and that they allow production to happen, as can be seen below:



“Our suppliers do meet our expectations because we have a good relationship. They also go through some tests like acidity and density, for example, to know if they are supplying us only goat milk or if they are mixing with cattle milk. So to avoid any problems, they prefer to act right”. (ASCOMCAB_Director 4).

“(...) they are committed because they know that they need us, and we need them, so if one fails, everyone is harmed. But we never had any problems with them”. (APOCCA_Director 5).

It was observed that in the region, there are agricultural technicians and professionals who work to support the various associations, monitoring, and adjusting the production processes to guarantee quality and superior returns. These professionals, commonly with actors linked to local institutions, are responsible for disseminating innovation among producers (Hervas-Oliver & Albors-Garrigos, 2014). Another identified aspect regards the sharing of standard practices used by the associations with support industries. That allows the knowledge which can reduce costs of the transaction, production among others as described: *“This is good because the best practices of one Association, can be taken to another and thinking about the collective, it can develop the region as a whole”* (AGUBEL_Director 3).

The results of the factor analysis are in line with the theoretical perspectives (Albors-Garrigos, Hervas-Oliver, & Hidalgo, 2009), as they indicate that the mentioned support industries enable the development and production of the goat farming in Cariri Paraibano. That promotes the transformation of knowledge and practices in the local buzz, increasing the absorptive capacity of companies, thus consolidating the productive arrangement and the economic and social development of the region.

4.4 Relationship Resources at the Horizontal Level within the cluster

This group of resources defined by Moreira et al. (2019) deals with cooperation among companies that are enhanced by physical proximity, which generates the sharing of inputs, information and enables the complementarity of operations between the companies in the cluster.

The analyzed aspects that stood out in the Cariri Paraibano's goat farming were: the high competitiveness of the region, the cooperation between associations, the benefits of physical proximity, the existence of associations for the collective good, the sharing of inputs and physical structure and complementarity activities of those involved. The data extracted from the interviews showed no rules, incentives, or norms that govern rivalry or cooperation between associations in the region. However, something related to the limit that producers must produce per day was mentioned; yet, this decision was not entirely linked to competition rules, but as a measure of production control in the region. Therefore, producers can only produce up to 13 liters of milk per day, regardless of their production capacity as reported:

“There is no rule. It (the Government) does not interfere if we cooperate or compete. What they want to know is what we can produce to deliver to them and meet the needs of the project”(AGUBEL_Director 3).

This result shows that the government currently buys all production from producers, but there may be potential to produce more than what is offered. Two issues extrapolate from this information: first, the existence of a limiting rule both at the individual and collective level, because with an increase in production, the surpluses would make it possible to meet other demands and expand the benefits for everyone in the cluster; second, a rule of control by the associations, since the surplus produced could be the target of individual actions by producers, directly serving the local market, for example. However, the interviewees did not demonstrate a negative perception associated with this rule imposed on the participants in the cluster.

Geographical proximity is a predominant feature of APLs that generates advantages (Ganesan, Malter, & Rindfleisch, 2005). The interviews showed a perception of the benefits derived from co-location, in line with what was pointed out by Mccann and Folta (2008), as the evidence indicates that the participants are aware of the potentialization of contact and the bonds of trust, being a sample of a local buzz, as can be seen in the excerpts of the interviews: *“It’s really good, everyone’s close, because it’s easier for us to have contact with them”* (ACCOP_Director 8); *“(…) they (other goat’s milk associations) are in the neighboring cities, so it’s only a few minutes, that’s why we are so close to each other”* (Agroindustrial Condominium_Director 2).

Another benefit of the location, observed by the documentary analysis, is related to the other support industries that are geographically located and develop projects together. A strong point in the studied APL is the sharing of inputs and structure. Their cooperation is so stable that if any machinery breaks down, they can use the ones of another industry association. Also, the documentary analysis indicates that they are old associations, with stable and lasting links.

“The good thing about having a good relationship is that in any need we can count on others. I even had a problem with our machine, and our milk was being stored in Amparo. Thanks to God, he helped us, and that always happens among all” (ACCOP_Director 1).

The reduction in transaction costs is another factor perceived by the interviewees according to evidence extracted from both documentary analysis and interviews. Combined associations make deliveries to surrounding cities to use the same transport and thus significantly reduce expenses with the logistics of distribution of milk to the towns served by the Government. That indicates a degree of maturity in the combination of simultaneous competitive and cooperative behavior and a focus on the group’s common goal, on creating collective value and improving absorptive capacity (Hervas-Oliver & Albors-Garrigos, 2014. Information confirmed by the reports:

“We get together and send the milk to neighboring cities, you know? Because it avoids sending a lot of trucks and can only be one that takes mine and Sumé’s, for example. Then we don’t spend as much, and it’s delivered the same way” (Agroindustrial Condominium_Director 2).

The evidence of relationships between the associations that were found reinforces the existence of constant knowledge exchanges, which are often not structured but encompass the information that exists among producers, clearly demonstrating the strength of the multiple and dynamic interdependencies within it (Tallman et al., 2004).

4.5 Relationship Resources with Local Institutions

Relations with local institutions are cluster resources defined by Moreira et al. (2019), including support for commercialization, qualification of labor, technology offerings, financing, and research activities to strengthen the competitiveness of the clustered.

The relationship with local institutions is significant given the influence they have on the growth and development of companies contained in the clusters, as well as in the formation of advantage at the state, municipal, or even national level (Toledo & Szafir-Goldstein, 2008). In the Cariri Paraibano’s goat farming, analysis of this group’s resources highlighted aspects such as the existence of public or private institutions involved in goat farming, the presence of institutional support, and the support in the qualification of the workforce.

The Government is an example of a public institution involved in producing and marketing the produced goat milk. This involvement happens because of the inspectors who monitor the pro-



duction, and the aspect of the commercialization of milk being directed to the Government itself. SEBRAE (Brazilian Micro and Small Business Support Service), EMATER-PB (Technical and Rural Assistance Company), and Universities in the region are examples of public institutions involved in the goat farming activities of Cariri in Paraíba. Embrapa (Brazilian Agricultural Research Corporation) has coordinated its work, alongside with other prominent local institutions, in order to qualify milk and strengthen diversification, with strong incentives for the culture of goat cheese and yogurt, which should appear as an alternative for producers seeking, in differentiation, the path to superior gains.

Another analyzed aspect refers to the joint production of knowledge with the possibility of financing innovations, actions that are not carried out by the associations. Financing is obtained individually by each association, and not through joint ideas in favor of innovations to improve production or commercialization. We have: *“When we want to finance a new machine, for example, we go to the bank and ask for it individually”* (ACCOP_Director 6); *“We do not have joint actions to create something innovative, at most we have meetings in order to decide on something we will ask the Government, for example”* (ASCOMCAB_Director 4).

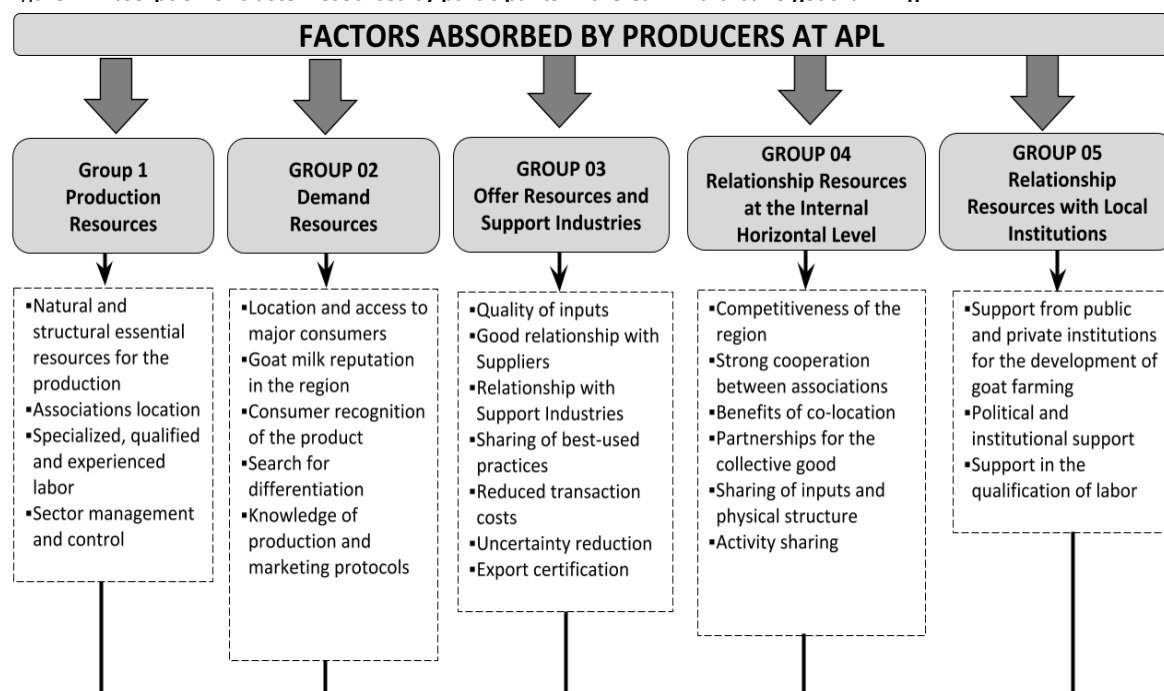
As the current production is geared to meet the Government’s “Milk Program,” there is no production geared to international demand. However, some associations mentioned having the necessary seal for export despite not being used. The following reports state this information: *“We have the support, and we ended up not using it. We even have a stamp for export”* (AGUBEL_Director 3); *“We have all the information to sell, we have a seal, we have everything but the product to be exported”* (ASCOMCAB_Director 9).

4.6 Synthesis of the absorptive capacity of associations concerning the local buzz

The results show the perception of the actors on the advantages derived from the factors of co-location, as pointed out by McCann and Folta (2008), highlighting several ways in which the local buzz provides the necessary support for the transformation of a traditional activity into a promising cluster (Hervas-Oliver & Albers-Garrigos, 2009), in this case, managed through producer hubs that organize themselves in the associations. Figure 1 summarizes the benefits that the Cariri Paraíba goat farming cluster companies can absorb, both individually and collectively, as extracted from the evidence found in the three analyzed sources, interviews, documents, and direct non-participant observation.



Figure 1- Absorption of cluster resources by participants in the Cariri Paraibano goat farming APL



Source: Source: Elaborated by the authors.

The interviews also resulted in the identification of missing or inadequate resources according to the interviewees' perception, which they consider as limiting factors for their development (Table 4). That represents the asymmetry in the knowledge flows resulting from the interaction dynamics that is also influenced by Local Buzz (Arikan, 2009), and also, the duality between the specific knowledge of the companies and that of the cluster, which ends up expressing the absorptive capacity of firms (Tallman et al., 2004).

Table 4 - Evidence of the lack of absorptive capacity of the participants in the APL of goat farming from Cariri in Paraíba

Identifying elements	Unabsorbed resource
PRODUCTIVE RESOURCES	
<p><i>"In the beginning, when we had a lot of water, production was up there. With this drought, there is no way to invest in raising a lot of goats, even to wash the machines in the right way becomes more complicated. If the water we had returned, that would certainly be a significant point for us to produce more."</i> (ASCOMCAB_director1).</p> <p><i>"We know producers can produce more milk, but they are afraid because of the little water we have. And another thing is that even for us to diversify production, we need more water, and that ends up becoming an unfavorable point for us to grow"</i> (AGUBEL_director2).</p>	<p>Scientific and technological information of the region</p> <p>Structure conditions</p> <p>Capital supply for infrastructure</p>
DEMAND RESOURCES	
<p><i>"We need to expand the offer to the private buyer market and reduce dependence on the government. We have a structure for that; we even have an export label"</i> (AGUBEL_Director 3).</p> <p><i>"We have all the information to sell; we have a seal, we have everything but the product to be exported"</i> (ASCOMCAB_Director 4).</p>	<p>Consolidate the practice of consuming goat's milk derivatives</p> <p>Extend efforts to the national and international market</p>
SUPPLY RESOURCES AND SUPPORT INDUSTRY	

Inexistence of planning for new related businesses based on the relationship with these Support Industries.	Stimulating innovation New opportunities and related businesses
RELATIONSHIP RESOURCES AT THE HORIZONTAL LEVEL INSIDE THE CLUSTER	
<i>"There is no rule. It (the Government) does not interfere if we cooperate or compete. What they want to know is what we can produce to deliver to them and meet the needs of the project" (AGUBEL_Director 3).</i>	Rules governing rivalry
RELATIONSHIP RESOURCES WITH LOCAL INSTITUTIONS	
<i>"We do not have joint actions to create something innovative, the most we have are meetings to decide what to ask the Government, for example" (ASCOMCAB_Director 4).</i>	Research and Development (R&D) Financing of innovations International marketing support

Source: Source: Elaborated by the authors.

Given the theoretical perspective adopted in this work, these items represent a degree of absorptive disability on the APL part. Some are items related to macro-environmental variables not controlled by associations such as climatic conditions, economic instability. However, certain situations could be minimized by creating value in collective APL resources, to be later absorbed by producers, such as, for example, the lack of water caused by the climatic conditions of the region.

There is a balance between benefits and limitations for the production resources of goat farming in Cariri in Paraiba APL. The perception of benefits subsidizes the absorptive capacity, as indicated by Cohen and Levinthal (1990), and these items refer to the existence of essential resources for the production of goat milk, plus the absorption of the local buzz that propagates and consolidates the social capital of a traditional activity in the region of Paraíba.

The limitations show the degree of absorptive incapacity of the producers, who point out that the current water crisis prevents higher production and processing. Based on Porter's (1998) perspective, it represents the individuals' perception of gaps in products and services within the cluster. However, the existence of rules not perceived by producers that establish daily production limits should also be noted, which may impede the natural expansion of the sector. There are technological solutions for the water crisis to minimize the situation, but it requires a joint effort to raise capital.

The location and workforce with knowledge applied to the existing sector in the region are also perceived as benefits by the APL, emphasizing the tradition of the activities developed in the area. That represents organizational resources, according to Barney (1991) or dynamic capabilities of the region (Eisenhardt & Martin, 2000). However, there are problems in the absorptive capacity of the production resources, for example, in the lack of scientific and technological information in the region which is mentioned by the interviewees, since the support and development agencies, such as SEBRAE, EMATER, the State and Municipality provide information and studies on the region and its productive activities.

Another problem indicated by the interviewees concerns the supply and flow related to the region's Goat Breeding by government programs and the promotion of the sector. That can also be referred to an inability to innovate and attract investments on the part of participants, which supports the findings of Cohen and Levinthal (1990) and Huang and Wang (2018) that it is not enough for the company to be exposed to the flow of knowledge, it is necessary to develop awareness about the importance of information and knowledge to appropriate it to your production process, as well as to develop strong institutional ties.

As for the absorption of Demand Resources, the benefits outweigh the limitations of the

Associations. The benefits include the participation of residents in the purchase of what is produced, whether in recognition of the sophistication of the product or the reputation developed by them. However, the production is still very dependent on the State Government's public policies, thus being a limitation related to the Group of Resources in question. It is also an absorptive incapacity of the participants since there is a national and international market that is not being explored. The lack of increased competitiveness of producers through new products and, thus, reducing the dependence on current channels is observed in APL. For example, to add value through the production of differentiated cheeses that can go to a premium, regional, national, and, who knows, international market. It seems to be missing what Albors-Garrigos, Hervás-Oliver, and Hidalgo (2009) indicate as continuous learning processes through the combination and accumulation of knowledge.

Regarding the absorption of APL's Offering Resources and Support Industries, the benefits of this Group are absorbed satisfactorily by the associations. However, a point of improvement would be the search for a more significant link with the institutions so that innovative projects to improve production are effectively applied. The interviews indicate that visitation and studies are carried out. Still, there is a failure in the application of everything that was analyzed, and this could be a starting point for the development of new businesses. That shows the lack of absorptive capacity of companies. According to studies by Huang and Wang (2018), focal institutions have spin-off effects on the business lea. They are fundamental for the creation of innovation networks and, therefore, for the absorption of know. And in this case, associations are not exercising the full role of focal organizations in the cluster.

It was noted that cooperation between producers deserves to be highlighted regarding the absorption of Relationship Resources at the horizontal level of the studied goat farming APL. The physical proximity makes the associations help each other reach their goals, being in the sharing of inputs; the complementarity of activities, reducing logistics costs, for example, or even in sharing of physical structure in the eventuality of any eventuality, such as broken machinery. Hervás-Oliver and Boix-Domenech (2013) already indicated that the interactions between the companies' internal resources and the locality resources are the source of combinations that generate appropriations of knowledge.

Finally, there was a demand for more considerable attention to this group regarding the absorption of Relationship Resources with Local Institutions of the studied APL. It was concluded that there is a support of public or private institutions in the production and especially the hand of qualifying work of associations and producers. However, associations and producers are not managing to carry out R&D or financing for innovations, which contribute to the growth of goat farming in Paraíba's Cariri region. In some cases, for the realization of R&D, investment is often required, which is considered beyond the limits of associations. The lack of funding for innovations prevents this activity from being carried out. Once again, it appears that associations are not completing their spin-off role, of focal organizations in the cluster, as promoters of absorption capacity at the firm level (Huang & Wang, 2018).

6. CONCLUSION

This study aimed to analyze how the associations producing goat's milk and derivatives of Cariri Paraibano perceive the benefits of integrating the local productive arrangement of goat farming. The application of the Cluster resources grouping methodology developed by Moreira et al. (2019) enabled a vision aimed at meeting the objective set. Data collection was primary, and triangulation was carried out among information obtained from the bibliographic review on the subject, in-depth interviews with leaders of associations responsible for the filling and pasteurization of goat's



milk from small producers, and documentary analysis. Five associations were interviewed, covering around 881 producers accountable to produce approximately 8,631 liters of goat milk per day.

The absorptive capacity of companies is defined as the ability to recognize the value of external knowledge, assimilate it, and apply it to their operation (Cohen & Levinthal, 2000). In this sense, the results of the research were able to show that the relationships between associations, the formation of the local buzz, and the absorption of collective benefits generate significant mutual benefits, showing the interdependence of resources and cluster factors in the value creation process. That represents the intersection between cluster resource theories, KBV, dynamic capabilities, and Local Buzz.

In general, from the Local Buzz, it is concluded that there is a similar absorptive capacity between associations in the goat farming cluster of Cariri Paraibano, such as Hervas-Oliver and Boix-Domenech (2013). This indicates that it is common in clusters, and that, a good part of the knowledge not absorbed by the companies may be linked to the incompleteness of the role of associations as focal organizations in the cluster, as defined by Huang and Wang (2018). In the total computation, it is observed that the Cariri region has high-order capacities on goat farming available to local firms, which according to the perspective of Bathelt, Malmberg, and Maskell (2004), explains the dynamics of the sector. This dynamic can be improved. Because, although the results indicate a level of awareness about the advantages of being in a productive cluster, there is still external knowledge that was not perceived by the participants. This reduces the organization's view on the importance of information and, consequently, its use in companies' operation, reducing the absorptive capacity of companies.

Likewise, it was observed that the grouping of existing resources indicated by Moreira et al. (2019) is apt to analyze the creation of value from the resources that surround the companies that are part of the Clusters or APLs. Its adaptability to the studied case allowed us to analyze the importance of the dynamics of resources and the best use for creating value before the market in which small associations of producers operate. On the other hand, Moreira's Model (2019) could cover more constraints, such as financial indicators that help to understand the financial result of the proposed benefits. Thus, the number of analyzed factors was a limitation of the present study. The main limitation of this study was the lack of direct access to goat milk producers, with only access to association leaders being possible.

Considering the limitations, future research is indicated to expand the contributions to the theoretical and managerial fields of the absorptive capacity of companies in productive clusters and the local buzz. Suggestions for further research are:

1. development of models for measuring the competitive advantages generated and absorbed in the productive clusters, with an expansion of the items to be measured;
2. analysis of the APLs existing in the three sectors that Caprinocultura covers in the Northeast: Cariri, Curimataú / Seridó, and Sertão;
3. comparative analyzes of the results from Brazil's southern region, for example, which is the second largest in goat farming.



REFERENCES

- Albors-Garrigos, J., Hervas-Oliver, J. L., & Hidalgo, A. (2009). Analysing high technology adoption and impact within public supported high tech programs: An empirical case. *The Journal of High Technology Management Research*, 20(2), 153-168.
- Arikan, A. T. (2009). Interfirm knowledge exchanges and the knowledge creation capability of clusters. *Academy of management review*, 34(4), 658-676.
- Bardin, L. (1977). *L'analyse de contenu* (No. Sirsi) a456144).
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in human geography*, 28(1), 31-56.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 128-152.
- Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of management review*, 23(4), 660-679.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1), 25-32.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they?. *Strategic management journal*, 21(10-11), 1105-1121.
- Eisingerich, A. B., Bell, S. J., & Tracey, P. (2010). How can clusters sustain performance? The role of network strength, network openness, and environmental uncertainty. *Research policy*, 39(2), 239-253.
- Flick, U. (2018). *Designing qualitative research*. Sage.
- Ganesan, S., Malter, A. J., & Rindfleisch, A. (2005). Does distance still matter? Geographic proximity and new product development. *Journal of Marketing*, 69(4), 44-60..
- Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of international political economy*, 12(1), 78-104.
- Hervas-Oliver, J.-L., & Albors-Garrigos, J. (2009). The role of the firm's internal and relational capabilities in clusters: when distance and embeddedness are not enough to explain innovation. *Journal of Economic Geography*, 9(2), 263-283.
- Hervas-Oliver, J. L., & Boix-Domenech, R. (2013). The economic geography of the meso-global spaces: Integrating multinationals and clusters at the local-global level. *European Planning Studies*, 21(7), 1064-1080.
- Hervas-Oliver, J. L., & Albors-Garrigos, J. (2014). Are technology gatekeepers renewing clusters? Understanding gatekeepers and their dynamics across cluster life cycles. *Entrepreneurship and Regional Development*, 26(5-6), 431-452.
- Hervas-Oliver, J. L., Sempere-Ripoll, F., Rojas Alvarado, R., & Estelles-Miguel, S. (2018). Agglomerations



- and firm performance: who benefits and how much? *Regional Studies*, 52(3), 338–349.
- Huang, C., & Wang, Y. (2018). Evolution of network relations, enterprise learning, and cluster innovation networks: the case of the Yuyao plastics industry cluster. *Technology Analysis & Strategic Management*, 30(2), 158-171.
- Larrinaga, O. V., & Rodríguez, J. L. (2010). El estudio de casos como metodología de investigación científica en dirección y economía de la empresa. Una aplicación a la internacionalización. *Investigaciones europeas de dirección y economía de la empresa*, 16(3), 31-52.
- Malmberg, A., & Maskell, P. (2002). The elusive concept of localization economies: towards a knowledge-based theory of spatial clustering. *Environment and Planning A: Economy and Space*, 34(3), 429-449.
- Marshall, A., & Marshall, M. P. (1920). *The economics of industry*. Macmillan and Company.
- McCann, B. T., & Folta, T. B. (2008). Location matters: where we have been and where we might go in agglomeration research. *Journal of management*, 34(3), 532-565.
- McEvily, B., & Zaheer, A. (1999). Bridging ties: A source of firm heterogeneity in competitive capabilities. *Strategic management journal*, 20(12), 1133-1156.
- Molina-Morales, F. X., & Martínez-Fernández, M. T. (2004). Factors that identify industrial districts: an application in Spanish manufacturing firms. *Environment and Planning A*, 36(1), 111-126.
- Moreira, V. F., Moraes, W. F. A. D., Hervas-Oliver, J. L., & Laurentino, S. B. B. (2019). Geographic concentration of companies and relationship resources at the horizontal level. *Revista Brasileira de Gestão de Negócios*, 21(SPE), 706-721.
- Moreira, V. F., de Moraes, W. F. A., & Pereira, Y. V. (2019). Integrando e ampliando a base teórica da criação de valor por empresas geograficamente concentradas. *Revista Ciências Administrativas ou Journal of Administrative Sciences*, 25(1).
- Musil, R., & Eder, J. (2016). Towards a location sensitive R&D policy. Local buzz, spatial concentration and specialisation as a challenge for urban planning—Empirical findings from the life sciences and ICT clusters in Vienna. *Cities*, 59, 20-29.
- Nelson, R. R., & Winter, S. G. (2002). Evolutionary theorizing in economics. *Journal of economic perspectives*, 16(2), 23-46.
- Peng, M. W., Wang, D. Y., & Jiang, Y. (2008). An institution-based view of international business strategy: A focus on emerging economies. *Journal of international business studies*, 39(5), 920-936.
- Porter, M. E. (1979). The structure within industries and companies' performance. *The review of economics and statistics*, 214-227.
- Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic management journal*, 12(S2), 95-117.
- Porter, M. E. (1998). Clusters and competition: New agendas for companies, governments, and institutions.
- Pouder, R., & St. John, C. H. (1996). Hot spots and blind spots: Geographical clusters of firms and innovation. *Academy of management review*, 21(4), 1192-1225.



- Pyke, F., Becattini, G., & Sengenberger, W. (Eds.). (1990). *Industrial districts and inter-firm co-operation in Italy*. International Institute for Labour Studies.
- Spencer, G. M., Vinodrai, T., Gertler, M. S., & Wolfe, D. A. (2010). Do clusters make a difference? Defining and assessing their economic performance. *Regional studies*, 44(6), 697-715.
- Stoecker, R. (1991). Evaluating and rethinking the case study. *The sociological review*, 39(1), 88-112.
- Tallman, S., Jenkins, M., Henry, N., & Pinch, S. (2004). Knowledge, clusters, and competitive advantage. *Academy of management review*, 29(2), 258-271.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Ter Wal, A. L. (2013). Cluster emergence and network evolution: a longitudinal analysis of the inventor network in Sophia-Antipolis. *Regional Studies*, 47(5), 651-668.
- Toledo, G. L., & Szafrir-Goldstein, C. (2008). Vantagens competitivas em clusters industriais: estudo de caso no setor cerâmico paulista. *Revista de Economia e Administração*, 7(2).
- Yin, R. K. (2012). Case study methods.

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2. Development of hypotheses or research questions (empirical studies)	√	√	√
3. Development of theoretical propositions (theoretical work)			
4. Theoretical foundation / Literature review	√	√	√
5. Definition of methodological procedures	√	√	
6. Data collection			√
7. Statistical analysis			
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9. Critical revision of the manuscript	√	√	
10. Manuscript writing	√	√	√
11. Other (please specify)			

