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Microfoundations of dynamic coopetition capabilities in firms from a microbrewery cluster

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Abstract

Purpose – The objective of this research is to analyze the microfoundations of dynamic capabilities used by microbreweries in Porto Alegre (Brazil) in their coopetition strategies.

Design/methodology/approach – A case study with a qualitative approach was developed. Data were collected during interviews with owners of 11 microbreweries, via analysis of documents and nonparticipatory observation. The authors used the content analysis technique to infer knowledge.

Findings – The authors identified the microfoundations of dynamic coopetition capabilities including collective purchases, shared distribution expenses, shared production, education of consumers and other beer producers, group interaction and a business roundtable with entrepreneurs from the food and drink sector in the hospitality industry.

Research limitations/implications – The authors developed a framework that considers the relationship between the microfoundations of dynamic capabilities and coopetition regarding the paradox between competition and cooperation. It is relevant to identify different actors' movements and the potential outcomes of coopetitive strategies, which yield a competitive advantage for the cluster.

Practical implications – Together, the microfoundations of dynamic capabilities contribute to the competitive advantage of the cluster.

Originality/value – The study highlights how small companies can jointly develop competitive advantage in a market dominated by a large company.

Keywords Coopetition, Dynamic capabilities, Microfoundations, Case study, Microbreweries

Paper type Research paper

1. Introduction

An emergent perspective in the business environment is coopetition, which describes situations in which there is dynamic trust between collaborators and competitors (Bouncken, Gast, Kraus, & Bogers, 2015). The definition of coopetition is simultaneous cooperation and competition between firms to create value (Gnyawali & Charleton, 2018). This definition considers that firms should be capable of managing coopetition and the tensions involved.

The tensions involved in coopetition have been widely studied in recent years, mainly regarding the paradox between competition and cooperation (e.g. Lundgren-Henriksson & Tidström, 2021). Only recently scholarly research has focused on coopetition capabilities, in an attempt to explain how firms can deal with the tensions and paradoxes arising in the context of coopetition (Bengtsson, Kock, Lundgren-Henriksson, & Näsholm, 2016; Jakobsen, 2020; Lundgren-Henriksson & Tidström, 2021). Microfoundations and dynamic capabilities have not been considered in conjunction with cooperation and competition. In the best of

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circumstances, these topics have been analyzed separately (e.g. Stadtler & Van Wassenhove, 2016). Eisenhardt, Furr, and Bingham (2010) have defined microfoundations as "underlying individual-level and group-level actions that shape strategy, organization and, more broadly, dynamic capabilities, and lead to the emergence of superior organization-level performance" (2010, p. 1263). In turn, dynamic capability can be defined as "the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments" (Teece, Pisano, & Shuen, 1997, p. 516).

We decided to study the beer industry because coopetition is a common strategy among brewery firms (Kraus, Gast, Klimas, & Stephan, 2019). Specifically, we chose the Brazilian craft beer industry because it has been transformed by competition forces, tracing to the significant increase in demand for premium products (Dias & Teles, 2019). From 2017 to 2018, the Brazilian craft beer market grew by almost 30% (Associação Brasileira da Indústria da Cerveja CervBrasil, 2018). While Brazil is the third largest producer of beer of all types in the world (Beverage Industry, 2019), the craft beer market is characterized by concentration: a large portion of the market is held by a small number of firms. These firms are nonetheless small compared to mainstream breweries. The craft breweries have developed cooperation and competition relationships with each other, but this strategy has not been followed by many of the more consolidated players in the domestic beer market (Stefenon, 2012; Lima, Nastri Neto, & De Carvalho, 2013). In recent years, the emergence of new small business competitors has significantly changed the profile of product supply and distribution in the domestic market. We based this study on a cluster of microbreweries located in Porto Alegre. For the purposes of this paper, clusters are defined as "geographic agglomerations of economic activities that operate in the same or interconnected sectors" (Giuliani & Bell, 2005, p. 47).

The study was designed aiming to answer the following research question: How can microfoundations generate dynamic capabilities for coopetition? The purpose of this paper is therefore to present an analysis of the microfoundations that generate dynamic capabilities for coopetition, as they can be critical for organizations to improve the balance between tensions and performance (Raza-Ullah, 2020). Previous studies have connected dynamic capabilities to coopetition. However, the processes and routines that constitute the microfoundations have been disregarded in this approach to a context-dependent strategy such as coopetition. In this paper, managerial and organizational processes are defined as the way things are done in the company, and play the roles of coordination, learning and reconfiguration (Teece *et al.*, 1997). Processes shape the company's current positions and its possibilities for evolutionary paths and are at the core of dynamic capabilities. Further, we consider organizational routines to be execution of interdependent tasks, performed by actors in a stable manner. In turn, "interdependent tasks pose coordination and cooperation challenges in combining individual inputs to create value and generate performance" (Becker, 2016, p. 2129). In this sense, understanding routines in the coopetitive context helps to delineate the coopetition capability.

Our findings make several contributions to the debate around coopetition and the microfoundations of dynamic capabilities. First, we develop an approach combining the microfoundations of dynamic capabilities (Teece, 2007) to coopetition strategy. Dynamic capabilities are developed from individual processes and routines that are specific to the context analyzed, explaining its operationalization (Silva, 2020). Thus, we present processes and routines that are configured as capabilities of dynamic transformation for developing competitive advantage. Second, instead of analyzing coopetition separately, we developed a theoretical framework that considers the relationship between the microfoundations of dynamic capabilities and coopetition in the light of the paradoxical relationship between competition and cooperation. Coopetition is a paradoxical strategy because cooperation and competition are two contradictory yet interrelated strategies (Gnyawali & Park, 2011). In this sense, the paradox cannot be divided into antecedents, processes and outcome relationships, but must be studied as a dynamic process (Hargrave & Van de Ven, 2017). Consequently,

players create value through cooperative processes and dispute this value in the competitive process (Bouncken, Clauß, & Fredrich, 2016; Shen, Gao, Liu, & Chen, 2021). Thus, we believe it is relevant to identify different actors' movements and the dynamics and potential outcomes of coopetitive strategies.

Next, we present the theoretical background of coopetition regarding microfoundations and dynamic capabilities.

2. Dynamic capabilities for coopetition

Studies of coopetition can be divided into three research areas: antecedents and motives; dynamics, tensions, value creation and value appropriation; and outcomes and evaluation (Peng, Yen, & Bourne, 2018). This study focuses on value creation and value appropriation because we are interested in microfoundations and their influence on coopetitive advantage through dynamic capabilities.

Coopetition is based on competition and cooperation. Consequently, its strengths and weaknesses are paradoxical (Chen, 2008). Firms that can integrate their knowledge and resources and diminish uncertainty, develop coopetitive advantage in their markets (Klein *et al.*, 2020; Monticelli, Silveira, & Silva, 2018; Padula & Dagnino, 2007). Four mechanisms yield coopetition from cooperation and competition: mutual pursuits, resource leverage, safeguarded resources, and relevant commitments (Gnyawali & Charleton, 2018).

It is relevant to study the microfoundations of coopetition because coopetitive partners aim to increase the value of their businesses, surpassing the results they would be able to obtain individually. The issue that is crucial to the success of these relationships is how firms divide up the results that they have obtained through coopetitive strategies.

Despite the process of consolidation that coopetition studies have undergone over the last few years (Bouncken, Fredrich, Ritala, & Kraus, 2018; Zacharia, Plasch, Mohan, & Gerschberger, 2019), few studies have observed the phenomenon through the theoretical lens of dynamic capabilities. Since dynamic capabilities are conceptualized as the ability to integrate, build and reconfigure internal and external competencies to deal in rapidly changing environments, and their primary goal is generating sustainable competitive advantage (Teece *et al.*, 1997). Dynamic capabilities enable a range of different organizational movements, such as entering new markets or expanding existing markets through internal growth, acquisitions and alliances (Helfat *et al.*, 2007).

Coopetition requires organizational dynamism (Ricciardi, Zardini, & Rossignoli, 2016) to establish a competitive advantage. In this field, coopetitors must "interact to create, adapt and combine exchange interfaces to achieve efficiency, renewal and development" (Waluszewski, Snehota, & La Rocca, 2019, p. 234). Routines can boost performance and provide a source of sustained performance because they promote a stable behavior pattern over time (Becker, 2016; Melo & Machado, 2020).

The knowledge generated by the cooperating firms requires dynamic capabilities for detection (Sensing), capture (Seizing) and consequent reconfiguration (Transforming) of products or processes. Aggregation (Barney & Felin, 2013) and cognition are recognized types of microfoundations that can occur at the individual, social process, interaction and structure levels (Felin, Foss, Heimeriks, & Madsen, 2012). Much of the potential for gaining competitive advantage lies in the microfoundations of dynamic capabilities, as explained in the next subsection.

2.1 Microfoundations of dynamic capabilities in coopetition

Alongside coopetition studies, the dynamic capabilities perspective emerged as a research avenue intended to improve resource-based view (RBV). Studies taking this approach seek to understand the mechanisms that enable transformation of resources into competitive advantage. The dynamic capabilities framework details these mechanisms through their

microfoundations. In these terms, microfoundations can increase firms' knowledge about individual actions, particularly on how they leverage resources to improve firm performance (Bengtsson *et al.*, 2016).

Studies of microfoundations in the context of coopetition analyze how individuals make sense of the situations necessary to deal with the paradox between conflicting and agreeing demands, enabling them to leverage the intensity and balance of competitive and cooperative strategies (Stadtler & Van Wassenhove, 2016). The outcomes of these relationships are the value created, the additional benefits yielded by coopetition and the value captured, which constitutes the benefits achieved by each firm (Gnyawali & Charleton, 2018; Volschenk *et al.*, 2016).

Clusters were traced in coopetition studies for the first time by Marshall (1920), who found they were characterized by lower costs of transportation between buyers and suppliers, larger labor pools and intellectual spillovers. Clusters can stimulate coopetition because they include direct competitors or existing collaborators, which may become competitors over time as they develop dynamic capabilities. Firms need to orchestrate their network of relationships and leverage resources to create and extract value from the network (Dhanaraj & Parkhe, 2006), such as scale gains, learning, shortening innovation times, access to solutions, cost reductions and social connections (Cusin & Loubaresse, 2018).

The crucial point is how to divide the results that the firms obtain through their coopetitive strategies. The gains accrued from the relationship, which are obtained through learning and through firms' exercise of their individual power in the relationship strategy, will not always be proportional to what firms have invested (Abdallah & Wadhwa, 2009). Moreover, firms that use coopetition are motivated to create new additional benefits and divide these benefits to capture the value (Brandenburger and Nalebuff, 1996; Gnyawali & Charleton, 2018).

The coopetition strategies embodied in these microfoundations enable firms to coordinate in identifying opportunities, seizing opportunities and transforming the cluster in which they coopete, maintaining their individuality and competitive position (Teece, 2007; Inigo, Albareda, & Ritala, 2017).

This study focuses on the processes and routines of microbreweries in Porto Alegre (the state capital of Rio Grande do Sul, Brazil), relating them to the nature of their dynamic capabilities. Taking a case study approach, we understand that analyzing the microfoundations of dynamic capabilities is an effective method for understanding how this group of firms has succeeded in obtaining coopetitive advantage.

3. Method

We conducted qualitative research using an exploratory-descriptive case study approach (Flick, 2014), with the objective of identifying the microfoundations of dynamic capabilities. The qualitative method was used because it is an appropriate way of describing the process in detail and analyzing the dynamic capabilities identified in coopetition. We used a case study to determine whether – and understand how – a complex and little-explored phenomenon occurs (Yin, 2018). Since the relationship between coopetition and dynamic capabilities can be considered a complex, dynamic and context-dependent strategy, the case study method is well suited to the purpose.

The population of interest in this research comprises 36 microbreweries producing craft beer in the state of Rio Grande do Sul. These breweries participated in a brewery cluster project ran in conjunction with Sebrae (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas [Micro- and Small-Firms Brazilian Support Service], 2015), which is a nonprofit agency in Southern Brazil. The study sample comprised five of these breweries: Babel Brewery, Portoalegrense Brewery, Seasons Brewery, Ferraro Brothers Microbrewery and Malvadeza. Managers of these microbreweries gave permission for their firms' real names to be used in this paper. They were chosen because of their know-how and their pioneering role in the cluster, and proactive leadership of the association's coopetitive strategies (see Figure 1).

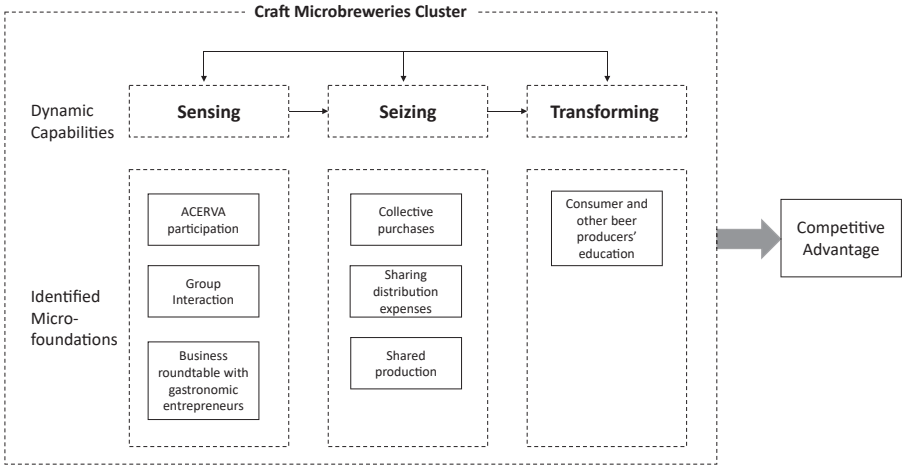

Figure 1.
Dynamic coopetition capabilities

We used three data collection techniques: interviews, examination of electronic documents and nonparticipatory observation. The first step was to conduct five semi-structured interviews (see Figure 2) with the managers of the chosen microbreweries to understand the existing coopetition relationships and how the project is managed. Three of these interviews were conducted over the phone and two in person at the microbreweries. All were recorded, with the permission of the interviewees and later transcribed. The purpose of using a semi-structured interview was to gain insights and achieve a deeper understanding of the firms

Firm	Respondents	Techniques employed	Interview duration
Babel Brewery	Director/Co-owner	Phone interview; conversation at an industry event	45 minutes
Portoalegrense Brewery	Director/Sales	Face-to-face interview at the microbrewery premises; conversation at an industry event	70 minutes
Seasons Brewery	Director/Owner	Phone interview; conversation at an industry event	35 minutes
Malvadeza	Director/Sales	Face-to-face at the microbrewery premises; conversation at an industry event	50 minutes
Ferraro Brothers	Director/Co-owner	Phone interview; conversation at an industry event	65 minutes

Source(s): The authors

Figure 2.
Respondents' characteristics and techniques used

chosen to represent the industry regarding the research question, and to avoid missing information if the conversation moved too far from the interview guide (Flick, 2014). This triangulation of methods is a key element in exploratory research and can reach understanding through several different approaches, such as observations, conversations, dialogs and relationships that support multiple views of a single phenomenon (Flick, 2014; Yin, 2018). Initial data collection was carried out in November, 2016. A second round of data collection was carried out from February to April, 2017.

The authors developed an interview script to guide the interviews that covered the two most important categories for this study: coopetition and microfoundations. Subcategories (named subnodes) of each category were also identified using the main theoretical references (Figure 3).

Second step was data collection from secondary sources, such as firms' websites, news websites and other recent articles that analyze the same context. Third and final step was an exploratory investigation using primary sources and nonparticipatory observation at the 3rd Management Seminar for Craft Microbreweries in Porto Alegre (Brazil). The researchers engaged several different respondents in conversations at this event, discussing the context of their trade association. These observations yielded 20 transcription pages. The nonparticipatory observation was conducted at the trade event attended by microbrewery managers and Sebrae consultants in 2016: collaborative actions, exchange of information and speeches delivered by managers speaking at the event were observed.

The authors used the content analysis technique to infer knowledge (Bardin, 2011). Qualitative data were analyzed in the following three steps: (1) pre-analysis, (2) exploration of the material and (3) treatment of results, inference and interpretation. According to Bardin (2011), the pre-analysis is the stage during which organization takes place. The material was organized through selection of documents, transcription of interviews and notes made in the field diary. The first step was to choose, eliminate and organize the data according to the study design and the two major pre-established categories. Thus, the data were open coded according to the analytical categories.

Written materials (transcripts, documents and diary notes – more than 40 pages) were input to NVivo12 Pro 12® software. NVivo considers categories as nodes and subcategories

Categories (nodes)	Sub-categories (sub-nodes)	References
Coopetition	Creation and capture of value; complementarity and asymmetry of resources; opportunities and difficulties; opportunistic behavior	Bouncken *et al*., 2015; Brandenburger and Nalebuff, 1996; Klein *et al*., 2020; Padula and Dagnino, 2007; Volschenk *et al*., 2016
Microfoundations	Construction, integration, and reconfiguration of internal and external competencies; processes and routines; sensing, seizing, and transforming	Barney and Felin, 2013; Eisenhardt *et al*., 2010; Teece *et al*., 1997, Teece, 2007

Source(s): The authors

Figure 3.
Categories used for the interview script

as sub-nodes. Sub-nodes were created during the process of critical reading of the verbatim transcripts and other text material. These sub-nodes were based on the analytical categories, and each of the sections considered necessary to the analysis were allocated to sub-nodes. Therefore, the connections between data, content, ideas and concepts supported implementation of the first open coding cycle (DeCuir-Gunby, Marshall, & McCulloch, 2011; Saldaña, 2015).

The next step was categorization. One of the assumptions of content analysis is definition of analytical categories, seeking to make the content analyzed objective. The categories constituted the backbone of the interview script and are the two main subjects of the study: coopetition and microfoundations. NVivo qualitative coding software (NVivo Pro 12® system) was used for categorization. We held a meeting with three researchers to identify nodes that could be merged or separated according to the content of the transcripts. The ideas and themes that emerged from the data and content allowed the development of sub-codes recorded in memos on Nvivo Pro 12®: using memos, helped to generate more detailed consultations and analysis for a better understanding of the questions and dimensions proposed in the study. Thus, the dimensions were openly coded and guided by empirical data (DeCuir-Gunby *et al.*, 2011; Saldaña, 2015). The first cycle of open coding using raw data resulted in 10 nodes. After this process, a second round was carried out to synthesize similar nodes, resulting in six sub-nodes. Thus, similar nodes were grouped and combined into the two categories. Within this perspective, "grouping" and "division" of the text can occur at different places, allowing a node to consist of a line, sentence or paragraph as long as the essence is the same (DeCuir-Gunby *et al.*, 2011; Saldaña, 2015). Therefore, the main study nodes were grouped and combined into two categories (coopetition and microfoundations), and other sub-nodes were found after open coded analyses (e.g. collective purchases, sharing distribution expenses, shared production, education of consumers and other beer producers, group interaction and business roundtable with hospitality entrepreneurs).

The last step was treatment of results and interpretation, which refers to the moment of reflective and critical analysis (Bardin, 2011). By using the three data collection techniques (interviews, documents and nonparticipatory observation), it was possible to analyze the data using triangulation, in which a combination of different sources and data collection methods are employed to produce various assessments of the same phenomenon (Yin, 2018). The authors used the literature background to develop this research.

The next section describes the empirical case analyzed in this research.

4. The case of microbreweries in Porto Alegre

The origin of the Porto Alegre brewery cluster can be traced back to the foundation of the Associação de Cervejeiros Artesanais do Rio Grande do Sul [Association of Craft Brewers of Rio Gande do Sul] (Acerva Gaúcha) (2016) – a regional craft brewers' association. Acerva grew out of a mailing list started in 2004 on a website, which grew into a fraternity and, in 2007, spawned an association of local brewing culture enthusiasts aiming at studying, researching, tasting and producing beer by hand.

In a second phase, this process evolved significantly as leading figures in the association became increasingly socially connected, generating new synergies and leading to the founding, in 2012, of the Rio Grande do Sul microbreweries' association (Associação Gaúcha de Microcervejarias (AGM), 2016), with the mission of integrating and developing relationships among firms. In a third stage, in 2014, cluster leaders began to be supported by Sebrae to access suppliers and innovate to reduce costs, and to identify market opportunities for small-business entrepreneurs.

The first five microbreweries started working together, forming the cluster:

(1) Babel Brewery: Founded in 2013, produces both world-renowned styles and unique exclusive creations.

(2) Portoalegrense Brewery: Founded in 2011, uses the owner's grandfather's recipes for German beers.

(3) Seasons Brewery: Founded in 2010, prepares beers using the most diverse ingredients and processes to add flavor.

(4) Malvadeza: Founded in 2007, known for its high-value product with a strong brand identity.

(5) Ferraro Brothers: Founded in 2012, has several award-winning labels.

These leading microbreweries initiated the cluster and influenced the first movements to encourage others to join it and gain relevance in all markets.

These microbreweries face competition and conduct their businesses in a market nonexhaustively characterized by:

(1) Competition that has emerged in response to the great demand for premium products: the key characteristic of this market is the share concentration by some large companies (Stefenon, 2012). New microbreweries have significantly changed their offer and distribution in the domestic market in recent years, increasing competition. They achieve this through growth of the overall market size, creating new markets and through efficient use of resources, or improvement of competitive positions (Bengtsson *et al.*, 2016).

(2) Competition for foreign suppliers: several essential inputs are imported, such as hops, barley and yeast. They are tied to international commodity prices and subject to import duties. For this reason, AmBev (largest beer manufacturer in the world, and controls about 69% of the Brazilian beer market) maintains control over the entire production chain, in contrast with microbreweries, which can be subject to suppliers' inordinate bargaining power. Thus, coopetition generates different levels of interactions in the chain, depending on the resource asymmetry between competitors (Monticelli, Garrido, & de Vasconcellos, 2018).

(3) Substitute products: microbreweries have adopted premium positioning, competing with other premium products from large breweries and with products such as wine, *cachaça* [typical Brazilian brandy], and other distilled beverages. To achieve this, the microbreweries needed to adjust their prices and expand marketing investment, encouraging consumers to increase beer consumption. In this sense, changes in the environment can weaken companies, which can affect the coopetitive strategy (Padula & Dagnino, 2007).

To minimize the impacts of those market characteristics, the cluster has developed specific processes and routines, which generated the microfoundations of dynamic capabilities. Those capabilities, on their turn, strengthened partnerships because of different integrations among the microbreweries: sharing and exchanging information, and jointly perfecting operational activities. In contrast to traditional clusters, the microbrewery cluster was built on different microfoundations regarding externality gains and customer value capture, yielding collective gains for the microbreweries in purchasing, distribution and production processes. Furthermore, within the craft beer cluster there are also micro-relations among founders, producers and consumers, with direct relationships that are independent of the cluster.

In other words, this case study shows that the network externalities in a cluster can motivate coopetition, as firms integrate for inter-firm and inter-competitor collaborations (Monticelli, Silveira, *et al.*, 2018). Thus, these organizations promoted and disseminated the coopetitive process and routines, increasing access to creation of solutions, learning and collective resources for all members of the microbrewery cluster.

4.1 Main processes and routines of the coopetition cluster

This case study identified several processes and routines that emerged from the data analysis (interviews, documents and observations). These routines and processes are part of the relationship among firms that compete and collaborate simultaneously, that is, between firms in this cluster (Cusin & Loubaresse, 2018). Thus, we classified these routines and processes as sub-nodes in our content analysis.

The contents of the interviews and in-person and online observations helped to define sub-nodes such as: sharing the purchase of inputs, sharing distribution costs, sharing production, educational actions targeting consumers and new beer producers, group interaction and partnership with other groups (restaurants and bars, i.e. hospitality entrepreneurs). Content analysis was used to define these categories while describing how coopetition among microbreweries in Porto Alegre occurs through dynamic capabilities.

The following sub-nodes describe the coopetition process and explain what happens, with examples illustrating the craft microbreweries' microfoundations process, involving interactions between founders, partners, suppliers, consultants and market.

4.1.1 Collective purchases. Negotiation with domestic suppliers and better quality of raw material refer to the buying and negotiation relationship among microbrewers, which began informally through WhatsApp conversations. Within the Brewers' Association (Acerva), a group was created to exchange information about raw materials, costs, best products, and experiences. The first firms to engage in this process were Ferraro Brothers, Seasons and Babel.

> We carry out many projects with the local brewing community, [. . .] In 2013 we started a project in partnership with Sebrae and the other breweries in the Anchieta hub to purchase inputs for our production. This joint collaboration brought returns for the entire chain of producers through the purchase of packaging, bottles, raw materials, and production equipment. (Director of Ferraro Brothers).

Acerva later incorporated this process with the directors of Ferraro Brothers microbrewery, who developed an integrated process to supply the whole network with data on harvests, prices, suppliers and product partners to assist and promote the group, or to collectively negotiate to get better deals. This process occurs through messages via messaging applications, email, and AGM websites that consolidate all suppliers and prices. Additionally, monthly, high-season and weekly production meetings are held with representatives from the most important firms in the cluster to jointly analyze purchase opportunities and future negotiations to purchase inputs, bottles and other production equipment. Thus, coopetition allows them to obtain economies of scale and scope, besides defining the industry (Gnyawali & Park, 2011; Bouncken *et al.*, 2016).

4.1.2 Sharing distribution expenses. When the microbrewery cluster was in its infancy, distribution processes and the costs involved were all separate, and each microbrewery had its own sales strategy and distribution costs. Since the AGM was founded, initiatives have been taken to unify these processes, particularly associated to costs of producing bottles and lids and of bottling the finished product. The owners of the Portoalegrense and Abadessa microbreweries came together to adapt and refine these processes, to fill the bottles and manage their distribution in conjunction.

> We share information about inputs and products and apportion some of the costs ... Also, we distribute together to gain scale and make our product better known... We have a common delivery person who works at the beer hub (Director of Portoalegrense).

The director of Ferraro Brothers confirmed this statement:

> We have an informal relationship among the breweries, which provides the synergy to exchange information, processes, productions, raw materials, and equipment (Director of Ferraro Brothers).

Gradually, the Association took over this process and reached an agreement under which one or two microbreweries manage the bottle ordering and the bottling process in scale, while distribution for large networks is carried out jointly, under Abadessa management: that is the brewery holding greatest commercial expertise in the cluster. Thus, coopetition allows costs to be shared and risks to be reduced through value creation and appropriation across firms (Hoffmann, Lavie, Reuer, & Shipilov, 2018), where individual interests overlap (Bouncken, Fredrich, & Kraus, 2019).

4.1.3 Shared production. Interviewees were unanimous in stating that the proximity of the Porto Alegre wine cellars (approximately 10 companies) in the same block in the Anchieta neighborhood of Porto Alegre led to cooperation ranging from shared production and exchange of information about production processes, going through exchange of equipment and raw materials, to the process of negotiating sales to large clients and markets.

> We negotiate inputs such as bottles and equipment. Besides, we share raw material for both own and shared production. We recently produced collaboratively [...] (Director of Babel)

The AGM fosters this relationship in workshops within the network. The joint production initiatives are already ongoing, mainly among Babel, Ferraro Brothers, Malvadeza, and Portoalegrense. In this sense, coopetition involves mutual benefits and collective interests (Bengtsson *et al.*, 2016), legitimized by the participants' adherence to strategy formulation and execution.

4.1.4 Education of consumers and other beer producers. In the first phase of the process, Acerva was created to foster integration between craft beer producers to exchange practices and information, and to generate discussion groups, workshops, courses and lectures.

> We work together to run events that can provide us increased sales[...] The partnership with the School of Beer also has greatly helped us with its courses and lectures focused on regional consumers and producers (Director of Seasons).

A second phase, which constitutes a significant evolution of the process, is linked to interorganizational learning. In this phase, there was an increase in the trust built among competitors. New interactions and synergies among production chains were generated, seeking to aggregate and provide services, techniques and experience exchange among those involved in microbrewing.

> We help the group to conduct courses for consumers and producers. For example, for consumers, we carry out tastings with gastronomy courses, while with producers, we take courses in marketing management, sales, innovation, and hold fairs and events together with gastronomic hubs in the south of the country (Manager at Sebrae).

The Porto Alegre School of Beer (Escola da Cerveja, 2016) was created in 2010 to further the above objectives. Coopetition therefore yields intangible benefits, mainly when this strategy generates spillovers for other participants in the network, developing externality gains (Monticelli, Silveira, *et al.*, 2018).

4.1.5 Group interaction. Interaction takes place through tools like WhatsApp (informal) and at monthly meetings (formal). There are groups for information exchange on inputs and marketing.

> There are several forms of interaction between nodes participating in the hub, [. . .] We use different ways of interacting, for example, email, phone calls, and meetings, but currently the WhatsApp group includes all the producers of the Porto Alegre hub[. . .] In this group, we share ways of operating in the market and production techniques to help everyone maintain our market share [. . .] (Director of Malvadeza).

Additionally, there is a group managed by AGM and Sebrae to assist with company management. In this sense, formal institutions are sources of competitiveness for the firms' business development. Thus, individual strategies can be leveraged through joint strategies based on coopetition (Monticelli, Garrido, *et al.*, 2018).

4.1.6 Business roundtable with hospitality entrepreneurs. The process involving other companies in the food and drink sector started in 2015, with the support of Sebrae, which already assists these microentrepreneurs in the State.

> [. . .] brewery entrepreneurs are participating in business roundtables and fairs, carrying out joint actions in supermarkets and shopping malls, in addition to conducting negotiations with the gastronomic sector across the State (Manager at Sebrae).

There is a pre-arrangement and agreement among microbreweries to focus on these markets and segments, because they can offer a better view of the value added to their products than by competing in the same space as the big producers, that is, in supermarket chains. Moreover, in these niche segments are more profitable, and breweries can develop a stronger partnership with less pressure on price and distribution and scale.

> We are engaged in several initiatives and actions to educate the public and even beer producers through workshops, beer week, courses, and lectures and the other partners from the cluster, AGM, and Sebrae RS (Director of Seasons).

In this sense, there is a strategy to develop firms' ability to collaboratively create and appropriate value, individually capturing a more significant portion of the value (Gnyawali & Park, 2011).

We have developed a framework from the highlighted processes and routines that considers the microfoundations of the dynamic capabilities identified, which allow firms to generate competitive advantage (Figure 1). We identified the coopetitive processes and routines developed to sense and take advantage of opportunities and enable transformation of the microbrewery cluster, and then we allocated each of them to their respective sub-nodes that constitute the dynamic capabilities.

In the sensing dimension, we found that the group's interaction and discussions with gastronomic entrepreneurs enabled the microbreweries to identify and create new opportunities. Therefore, this sensing dimension emerged after the craft microbreweries joined another group in events, congresses and concerts moving people around Porto Alegre city.

Recognition of opportunities permeates the knowledge of managers and their interpretation of information that is acquired in various ways, such as in conversations at fairs, news and information from customers (Teece, 2007). Thus, sensing through these routines and coopetitive processes enables more in-depth research and monitoring of opportunities and potential threats.

In the structure of dynamic capabilities, the environmental context has a broader character and considers the entire community of which the firms make part (Teece, 2007). As a result, the analysis of opportunities and threats is expanded and allows us to outline the most likely scenarios regarding the market and customer needs. Thus, when cluster members interact through different means and conduct business roundtables with food and drink sector entrepreneurs, they enhance creation and absorption of knowledge, as well as learning about market opportunities.

In the seizing dimension, we found that cluster members took advantage of opportunities by performing joint operational activities, which led to gains for all members. In the first step, these clusters generated joint participation, sharing knowledge about production and market processes and disseminating the beer culture in the regional market. A second phase constituted a dynamic evolution of this process and is linked to the existing social proximity that generated new synergies as well as the establishment of the Association of Microbreweries in 2012. In the third step, these organizations began to share information, processes, resources and knowledge to develop solutions, products, marketing actions, and distribution processes together (Silveira *et al.*, 2019). Thus, the microbreweries exchanged resources and capabilities, mainly knowledge, aiming to reduce costs and uncertainty, accelerate knowledge creation and increase performance in the network for inter-firm collaborations (Chung & Cheng, 2019). We emphasize that it was in the third phase that the cluster facilitated development of these routines, generating gains in terms of time and money, for example, in the exchange of equipment. The managers of microbreweries were able to develop and maintain a competitive advantage through coopetition strategies that permeate the structure of these companies' business model. Business models imply processes and incentives and help define how the company delivers and captures customer value, which is fundamental to the structure of dynamic capabilities (Teece, 2007). The craft microbrewery cluster analyzed has developed a business architecture that allows customers to increase their value and increase their competitiveness through collective gains in purchasing, distribution and production.

In the transforming dimension, we observe education of consumers and other beer producers as a process delivering evolution and reconfiguration of the cluster over time. The gains in confidence and new interactions in the productive chain enable the strategic flexibility essential to the cluster to be maintained and is illustrative of the development of dynamic coopetition capability. One example of this is consolidation of the flexibility to produce by exchanging information on inputs and resources, such as the move to bottle and distribute products together, yielding joint gains for the entire cluster. The trust built among interfirm actors ameliorates competition between them while allowing collaboration to make space for itself in the market.

The coopetitive and integrated scenario of the cluster highlights the importance of learning and knowledge management microfoundations to the transforming dimension. Creation of learning procedures that allow for sharing and integration of knowledge is of fundamental importance to business performance (Teece, 2007). Integration of internal and external know-how is essential – particularly in the context of systems and networks. Thus, the path traveled by this cluster illustrates transforming capabilities, mainly through integration of knowledge and the strategic flexibility of its structures. The processes developed by the cluster can therefore be considered dynamic transformation capabilities that facilitate generation of competitive advantage. Strategic flexibility was observed in several situations, supporting operational, marketing, sales and logistic processes among these craft microbreweries that exchanged critical information and consolidated the trust needed for business partnerships (Monticelli, Silveira, *et al.*, 2018).

The next section presents our conclusions, including theory and management implications.

5. Conclusion

The goal of this study was to analyze the microfoundations of dynamic capabilities for coopetition. We identified several processes and routines for sensing, seizing and transforming that have been adopted by the microbreweries and other actors. This study makes two main contributions to the literature. First, we present an approach combining

microfoundations with dynamic capabilities and employ it to understand the processes and routines of Brazilian craft beer producers, and how they deal with coopetition strategies in the changing business environment. Second, we developed a framework that considers the relationship among dynamic capabilities, microfoundations and coopetition.

Our results show the relevance of interaction among microbreweries to attaining a common goal and constructing competitive advantage, leveraging overlapping individual interests. Such a strategy must analyze and balance capabilities to deal with the paradox and tension inherent to coopetition (Gnyawali, Madhavan, He, & Bengtsson, 2016). Moreover, analysis of capabilities to manage coopetition tension contributes to the firms choosing the best strategy.

Hitherto, little attention has been paid to this issue in the literature (Bengtsson *et al.*, 2016). Focusing on cooperation or on competition in isolation is no longer sufficient. Moreover, it is necessary to consider other perspectives in conjunction with coopetition because it is a complex strategy that is dependent on the differing tensions faced in each industry, network or group of stakeholders. This complexity has been highlighted by Crick and Crick (2021), who identified a reduction in innovation level when there is a strong strategic network.

The routines and processes used to sense are mainly related to interaction among competitors in the cluster, while also interacting with other stakeholders searching for knowledge and information. Cluster members developed some processes, such as collective purchases and shared distribution expenses and production, to seize the knowledge they needed to progress. Finally, they transformed their cooperation, educating consumers and other beer producers. Consequently, they became capable of being more competitive, obtaining larger market shares. Thus, the dynamic of the cluster confirms that coopetition capability can offer opportunities for increasing the competitiveness and performance of both firm and network (Gnyawali & Park, 2011) because they can take better advantage of the opportunities created through collaboration and shape their business to obtain coopetitive advantage (Monticelli, Silveira, *et al.*, 2018).

This study expands the discussion about the applicability of microfoundations of dynamic capabilities to the construction of competitive advantage. The microfoundations presented by Teece (2007) to support the theory of sensing, seizing and transforming capabilities consider the logic of analyzing the external environment in a broad manner and foreground the importance of interactions among different actors. However, the coopetition perspective that we present in this article further extends understanding of the importance of processes and routines that constitute microfoundations in more complex and interactive contexts. We can therefore conclude that the structure proposed by Teece (2007) is applicable to the coopetition context and can yield positive results for firms' development and profitability.

One managerial (empirical) result of this study is our description of processes and routines, here identified as the microfoundations of the dynamic capabilities of the cluster of craft microbreweries in Porto Alegre. In this sense, we contribute to other firms and clusters that intend to coopete because coopetition capability can be seen as an accumulated managerial competence in terms of coopetitive interactions. Consequently, the coopetitive capability can deal with conflicts, create value and accrue superior results for individual firms (Gnyawali & Park, 2011).

Despite its contributions, this study is subject to boundary conditions. The main one is its focus on a single industry, the Brazilian craft beer industry. Thus, our results may be limited to this case. Moreover, we collected cross-sectional data, making it difficult to develop a historical analysis of the facts. There is also awareness that interview bias can occur because our research is dependent on the interviewees' current perceptions. Since the study is cross-sectional in nature, respondents' answers reflect their perceptions at the current point in time. Prospective research could contrast the respondents' perception with those of other agents in

the market such as trade associations, industrial agencies, government bureaus and supporting organizations. It would thus be possible to evaluate whether the relationship between formal institutions, international performance and coopetition is enduring.

To pave new avenues for research into coopetition, microfoundations and dynamic capabilities, it is necessary to compare another coopetition cluster's dynamic capabilities and microfoundations. Moreover, we suggest that future research could extend this approach to include the role of institutions and strategy-as-practice. Such an approach could highlight interaction among firms, institutions and strategies. It could also make sense in turbulent environments, since coopetition may be a fuzzy phenomenon because of causal ambiguity and path dependence. Another interesting opportunity to be explored is analyzing the different political practices of private institutions and government, using strategy-as-practice approaches. Finally, we believe it is also relevant to understand the learning processes involved in development of dynamic capabilities through coopetition, because they can be considered accumulated managerial competence.

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