

# Coopetition: A Systematic Review and Research Guidelines

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**Abstract:** *This work has as its central theme the strategy of coopetition, that is, the simultaneous relationship of cooperation and competition between different economic agents. Since the 1990s, various works have been developed in order to advance in the theoretical and empirical fields about coopetition, consolidating it as an effective business strategy, derived, but distinct from pure theories about cooperation or competition. Due to the scope and complexity of cooperative relationships, it is necessary for researchers to pay attention to the levels of analysis; contexts and application of basic theories in a way that is congruent with the study that the authors intend to carry out. This research presents the results of a systematic review of rigorous literature, in which the main objective was to broaden the understanding about the competition strategy in order to contribute to the coherent development of future research in this field of study.*

**Keywords:** competitiveness, business strategy, strategic management, research agenda

## 1. Introduction

Coopetition is a business strategy in which elements of collaboration and competition, simultaneously integrated. This subject has been developing amid academic research mainly since the 1990s. Empirically, however, there are reports from the beginning of the 20th century, such as the book *Advertising as a Business Force* by Cherington (p. 144) in that coopetition was already presented as a type of collaborative relationship between competitors [1]. In the 1980s, the term coopetition described the collaborative relationship between suppliers in a given North American software industry [2]–[5]. Academically, the term gained relevance and became known after the publication of the book *Co-opetition* [6]. Since then, numerous researchers have dedicated themselves to advancing the understanding of the concepts that involve strategy [2], [5], [7]–[21].

Research around coopetition strategy covers different economic sectors, as well as different levels of analysis and internal and external environmental contexts. As Bouncken et al., summarizes, research on coopetition has already been observed in sectors such as petrochemical, port, retail, health or hospital, biotechnology, transportation, finance, insurance, education, technology in general, several segments of engineering, tourism, among others [21]. As for the levels of analysis, research varies mainly between intra-organizational, inter-organizational and network, and may present sub-levels at each level [4], [7], [21]–[24].

As for theoretical contributions, research has been observed from numerous perspectives. There are a number of works developed from game theory [6], [14], transaction cost theory [2], [19], resource-based view [2], [25] [26], dynamic capabilities theory [27], [28], relational view [26], behavioral theory [24], among others.

Coopetition has evolved into a current research field and has consolidated as a business strategy widely applied in the constantly changing corporate environment. According to Le Roy, Dagnino and Czakon (p.131) “the main driving force behind the development of the issue was the straightforward observation that the analytical lenses rooted in competition and in cooperation had proved increasingly inadequate to interpret the high-speed shifting business reality of 2000s” [29]. Therefore, not only the industrial logic of observing the firm's internal resources supports cooperative strategy, but also its ability to integrate external environmental resources [4], [30]. Due to the logic of contradictory interaction (competition versus cooperation), some researchers consider coopetition as a revolutionary business strategy [6], [31]. They even find it difficult to understand.

One can note that coopetition is different from traditional forms of cooperation observed in the corporate environment, so one should avoid reducing it to an analysis of cooperation between competitors. When differentiating the coopetition of relationships formed in horizontal alliances, Bengtsson and Raza-Ullah (p.33) state: “for an alliance or an inter-firm relationship to be cooperative, future studies need to first establish and explicitly show that cooperation and competition (i) simultaneously exist, (ii) interact and influence each other, (iii) engender tension, and (iv) cause dynamic changes in such relationships over time” [5]. Therefore, the strategy analysis must take the simultaneity of the elements into account.

Coopetition gained space in the midst of organizational research and as a business strategy [21], [30], [32]. According to Bouncken et al., (p.597), coopetition “is an accepted and growing stream of research in its own right on the intersection of strategy and several neighboring research fields (such as e.g. innovation, management,

entrepreneurship etc.)” [21]. This expands the horizon of interdisciplinary research in this context.

In coepetitive relationships, competition and cooperation are no longer analyzed separately [27], and start being observed in parallel through collective actions aiming to achieving common goals[33]. The concept of coopetition adopted in this work is aligned with Bouncken et al., (p. 591) in which “coopetition is a strategic and dynamic process in which economic actors jointly create value through cooperative interaction, while they simultaneously compete to capture part of that value”[21]. In other words, it is a dynamic strategic process, in which the actors involved are coepetitively allied in order to achieve congruent objectives. Thus, it is possible to see that coopetition is not restricted to cooperation between competitors and may even occur along a supply chain.

As briefly explained, the literature on coopetition can occur in different contexts, sectors or levels of analysis, which requires a careful choice of categories and basic theories for the development of research on this subject[23]. In fact, the complexity and variety of works observed can hamper the understanding by the researcher and incur the wrong use of elements of the strategy[22]. This study was then motivated by the researchers' perception of the scope of this field of study and the need for a better understanding of the topic, which will assist in forwarding future research based on the synthesis of the studies and the indication of a basis judicious referential.

## 2. Methodological Procedures

This section presents a detailed research protocol, with all the steps held to prepare the work. This procedure is important due to the increase of the transparency of all means adopted during the research process, and allows the replication of the study's methodology in future research. This work is configured as a systematic literature review.

Systematic literature review is a research method widely used to carry out syntheses of scientific materials already published, which involves various stages and criteria of analysis[34].

This work is of qualitative approach, with (articles analyzed) collected in the international scientific database Scopus®, through the identification of keywords.

To aggregate works that eventually were not revealed in the search for keywords, the snowball technique was included[35], [36], which allowed researchers to include relevant references pointed out in the analyzed literature.

Google® online spreadsheets organized article collection and, in parallel, Mendeley® software created a database with PDF files, through which the automatic management of the references mentioned in the work was possible.

### 2.1 Research Construction Steps

Aiming a detailed presentation of the procedures adopted in this research, one sought to highlight each of the steps

followed by the researchers, which will make it possible to replicate the method in several fields of study. The adopted protocol followed six steps:

#### 1) Selection of the database for material collection:

Some databases have information on scientific materials indexed on a given subject. Thus, choosing a database that contains relevant materials on the topic to be studied is necessary. The researchers chose to search the Scopus® database, as it is an international database with a wide variety of indexed works and the possibility of researchers accessing it.

Choosing only one basis for data collection may represent a limitation in systematic review works. In the context of this research, the authors added snowball technique and other systematic reviews already published, reason why the adoption of the selected base is justified.

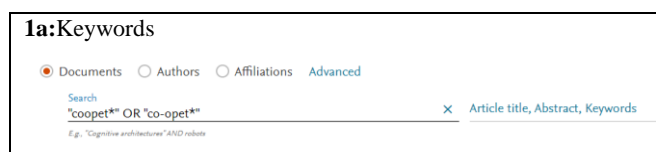
#### 2) Identification of search keywords:

Keywords are guiding to find the works already published on a given topic. Thus, based on the topic to be studied, appropriate descriptors should be found to search in a database. In this research, previous works on coopetition [8], [21], were important for the identification of the appropriate keywords, thus, the descriptors “coopet\*” OR “co-opet\*” limited to the title, abstract and keywords (Figure 1a) and then the search was limited to revisions (Figure 1b), resulting in 46 documents.

Scopus® database allows to download a file in CSV format with information contained in the materials indexed in the database, thus, in the Export option, data was selected (Figure 2), to fill out a spreadsheet shared between the researchers. This research selected data such as author, journal, year, abstracts and keywords. Expert elements must be consistent with the objectives of each survey.

Still at this stage of the research, the authors performed a second search to capture literature reviews possibly not identified in the previous search, using the descriptors: coopet\* OR co-opet\* AND syst\* AND revie\*, limited to the title, abstract and keywords (Figure 3a). The search found 39 papers (Figure 3b) then the authors applied journal filter, which resulted in 34 documents (Figure 3c). The asterisk (\*) used at the end of each word allowed the identification of all possible suffixes for words used.

The authors performed the procedure shown in Figure 2, again. Then, they added the 34 works found in the second search to the spreadsheet already created in the first search. Thus, the worksheet was composed of 80 works: 46 identified in the first round and 34 identified in the second round.



**1b: Review works**

46 resultados do documento

TÍTULO-ABS-KEY (coopet\* ou co-opet\*) E (LIMIT-TO (DOCTYPE, "re"))

**Figure 1:** Keywords search - first search round

Source: Images extracted from Scopus® database, access August 13, 2020.

Caption: The asterisk (\*) added at the end of "coopet\*" OR "co-opet\*", is a boolean operator that allows the identification of the word stem with several possible suffixes. There may be other operators, which may also vary from base to base.

Export document settings ⓘ

You have chosen to export 46 documents

Select your method of export

☐ MENDELEY ☐ ExLibris RefWorks ☐ RIS Format EndNote, Reference Manager ☒ CSV Excel ☐ BibTeX ☐ Plain Text ASCII in HTML

What information do you want to export?

<input type="checkbox"/> Citation information	<input type="checkbox"/> Bibliographical information	<input checked="" type="checkbox"/> Abstract & keywords
<input checked="" type="checkbox"/> Author(s)	<input type="checkbox"/> Affiliations	<input type="checkbox"/> Abstract
<input type="checkbox"/> Author(s) ID	<input type="checkbox"/> Serial identifiers (e.g. ISSN)	<input type="checkbox"/> Author keywords
<input type="checkbox"/> Document title	<input type="checkbox"/> PubMed ID	<input type="checkbox"/> Index keywords
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<input type="checkbox"/> EID	<input type="checkbox"/> Editor(s)	
<input type="checkbox"/> Source title	<input type="checkbox"/> Language of original document	
<input type="checkbox"/> volume, issue, pages	<input type="checkbox"/> Correspondence address	
<input type="checkbox"/> Citation count	<input type="checkbox"/> Abbreviated source title	
<input type="checkbox"/> Source & document type		
<input type="checkbox"/> Publication Stage		
<input type="checkbox"/> DOI		
<input type="checkbox"/> Access Type		

**Figure 2:** Data download procedure for filling out the spreadsheet

Source: Images extracted from the Scopus® database, access 13/08/2020.

**3a: Keywords**

☒ Documents ☐ Authors ☐ Affiliations ☐ Advanced

Search  
coopet\* OR co-opet\* AND syst\* AND revie\* X Article title, Abstract, Keywords  
E.g. "Cognitive architecture" AND robots

**3b: Number of documents**

39 document results

TITLE-ABS-KEY (coopet\* OR co-opet\* AND syst\* AND revie\*)

**3 c Papers indexed in journals**

34 document results

TITLE-ABS-KEY (coopet\* OR co-opet\* AND syst\* AND revie\*) AND (LIMIT-TO (SRCTYPE, "j"))

**Figure 3:** Material selection search criteria

Source: Images extracted from the Scopus® database, access 13/08/2020.

**3) Data selection**

Before starting to read the abstracts of the works exported to the spreadsheet, the authors excluded 10 repeated works appearing in both searches. When verifying the existence of only 10 repeated works, one found that the addition of the descriptors syst\* AND revie\* proved to be efficient in capturing works that had not appeared in the initial search.

The second step of the data analysis read the remaining 70 abstracts.

After the identification of the works, it was necessary to apply the inclusion and exclusion criteria in the materials, in order to select only the works adhering to the purpose of this research. Thus, the initial criterion adopted by the researchers made reference to the objective expressed in the identified document, which should directly relate to the term coopetition to proceed to the stage of complete reading and content analysis (reading of the complete material). This research phase can be done based on the abstracts of the identified articles.

From this reading, 46 works from the sample were excluded. Thus, 29 papers went on to read and analyze content, 2 more papers were included as explained below, resulting in 31 papers, it was not possible to access the complete material of 1 of the articles, so the total of full papers analyzed was 30 articles.

**4) Organization of references and full texts:**

All references used in this study were organized using Mendeley® software, which among other features, allows the management of references cited throughout the text and file indexing in PDF format, allowing taking notes and highlighting parts of the texts. Mendeley® is a free software and allows research through a login and password registration. Full papers were located using the Google Scholar® search engine, with a student login and password from the researchers' educational institution of origin. This procedure was necessary because the Scopus® database does not have the complete works indexed.

**5) Content analysis:**

After reading the abstracts and downloading the references and the full texts, the authors started reading the full materials, reviewed three times, as per described below:

- In the first reading, a greater understanding of the text and its dealings was sought, possible categories of analysis were identified, and the application of the snowball technique;
- During the second reading, the texts have been recorded, and the categories of analysis, main discussions and identification of research gaps were reviewed.
- In the third reading, we sought to validate the data collected, verifying whether the transcribed understanding of the texts was in accordance with what the author of the analyzed text wanted to say.

In the first reading of the materials, the authors identified the need to apply the lens of conceptual and empirical rigor in research on coopetition due to its complexity and variety of exploration possibilities [23]. According to Gnyawali and Song (p. 8) "A paper that is rigorous in its theory, methods, and analysis helps other researchers clearly understand the author's theoretical perspective and reasoning, methodological and analytical choices made, and reasons for the choices"[23]. Thus, consistently advancing the theory is possible.

By reading the articles, the authors identified categories of analysis and grouping of works according to similar themes.

The criteria used initially for the classification of these works was the observation of the structure of the articles, objectives, methods, main results presented an indication of future research, the extent to which this information was identified throughout the 3 readings of the materials in full, were in parallel added to the data analysis spreadsheet. In addition, the authors identified systematic literature reviews [4], [21], [22], [41], which helped in the general understanding of the theme of coopetition and its initial directions.

6) Inclusion of works using the snowball technique.

Snowball, a technique of data collection adopted in qualitative research and literature reviews, consists of adding works cited in the analyzed materials to the research in course [36]. Although the searches have not shown the two works integrated into the data to be analyzed, they were frequently mentioned in the works read because their incorporation into the analysis was found important.

### 3. Results and Discussion

Based on the reading of the selected articles, researchers were able to categorize the papers to present the research results. Thus, one decided to make three time cuts on the evolution of the identified works. The results presented in this research were elaborated taking 30 works as a basis, as presented in chronological order in Table 1. The authors elaborated the chart based on the three data collection wheels mentioned in section 2.1, the first stage as shown in Figure 1, the second stage as Figure 2 and, third step according to the sixth step referred to in the methodological procedures. To make it evident the stage in which the data were collected, the column R\* was added to the table, which represents the round in which the work was integrated into the analyzed article bank.

**Table 1:** Papers identified for reading of the full material.

N	R*	TITLE
1	3 <sup>a</sup>	Co-opetition [6]
2	1 <sup>a</sup>	Multifaceted relationships under coopetition: Description and theory [2]
3	1 <sup>a</sup>	Co opetition: Competitive and cooperative business strategies for the digital economy [14]
4	1 <sup>a</sup>	Cross-functional "coopetition": The simultaneous role of cooperation and competition within firms [17]
5	2 <sup>a</sup>	Identifying and prioritizing critical success factors for coopetition strategy [31]
6	2 <sup>a</sup>	Coopetition and business ecosystems in the information technology sector: The example of Intelligent Mobile Terminals [18]
7	1 <sup>a</sup>	Perspectives on value creation and Coopetition [37]
8	2 <sup>a</sup>	Mapping the perspectives of coopetition and technology-based strategic networks: A case of smartphones [38]
9	3 <sup>a</sup>	Coopetition—Quo vadis? Past accomplishments and future challenges [4]
10	1 <sup>a</sup>	Systematic review: an analysis model for measuring the coopetitive performance in horizontal cooperation networks mapping the critical success factors and their variables [39]
11	1 <sup>a</sup>	Coopetition as a development stimulator of enterprises in the networked steel sector [40]
12	1 <sup>a</sup>	Coopetition: a systematic review, synthesis, and future research directions [21]

13	2 <sup>a</sup>	Coopetition research: Towards a better understanding of past trends and future directions [41]
14	2 <sup>a</sup>	A systematic review of research on coopetition: Toward a multilevel understanding [5]
15	2 <sup>a</sup>	Levels, phases and themes of coopetition: A systematic literature review and research agenda [22]
16	2 <sup>a</sup>	Pursuit of rigor in research: Illustration from coopetition literature [23]
17	2 <sup>a</sup>	In search of coopetition consensus: Shaping the collective identity of a relevant strategic management community [42]
18	2 <sup>a</sup>	The coopetition perspective applied to tourism destinations: a literature review [43]
19	1 <sup>a</sup>	Coopetition as the new trend in inter-firm alliances: literature review and research patterns [8]
20	1 <sup>a</sup>	Implementing the right project structure to achieve coopetitive innovation projects [9]
21	2 <sup>a</sup>	Modeling Simultaneous Cooperation and Competition Among Enterprises [44]
22	1 <sup>a</sup>	Interactional and procedural practices in managing coopetitive tensions [10]
23	1 <sup>a</sup>	Moderators affecting the relationship between coopetition and company performance [26]
24	1 <sup>a</sup>	Incorporating coopetition into the entrepreneurial marketing literature: Directions for future research [45]
25	2 <sup>a</sup>	Coopetition as an emerging trend in research: Perspectives for safety & security [11]
26	1 <sup>a</sup>	Coopetitive dynamics and inter-organizational knowledge flow among venture capital firms: A systematic literature review [46]
27	2 <sup>a</sup>	Behavioral antecedents of coopetition: A synthesis and measurement scale [12]
28	1 <sup>a</sup>	Coopetition and trust: What we know, where to go next [24]
29	2 <sup>a</sup>	Towards a research agenda on how, when and why trust and distrust matter to coopetition [47]
30	2 <sup>a</sup>	Exploring the role of ambidexterity and coopetition in designing resilient fashion supply chains: a multi-evidence-based approach [28]

Source: Research data (2020).

\* Caption: N = Number; R \* = round (first round - keywords; second round - keywords; third round - Snowball).

Starting from subsection 3.1, the results presented the content analysis of the selected articles. The articles, grouped in chronological order, will ease the understanding of the evolution of the subject over the years. Therefore, the seminal works published in the 1990s are presented, followed by works published throughout the 2000s and, finally, works published after 2010. One can note that the most robust synthesis works dated from 2014, which created the need for a data segmentation from that period according to similar approaches. Finally, the most recent review works were grouped into categories by analysis and by thematic affinity.

#### 3.1 Analysis of works on coopetition

The 1990s marked the beginning of academic research on coopetition. Game theory was widely discussed in the field of business strategies and supported the initial logic for the development of studies on coopetition[6]. Thus, an approach to the competitive advantage of reach based on competitive relationships, simultaneous cooperation by different firms at first considered contradictory, began to form. Brandenburger



and Nalebuff, showed the value of the proposed network as a dynamic model for coopetition [6]. Through value, network analysis can identify game players as well as the interdependence between them. In this sense, relationships can occur horizontally or vertically. The work of Nalebuff and Brandenburger [14] synthesizes elements from the work of 1996[6].

Simultaneously with the work of Brandenburger and Nalebuff [6] and without any apparent connection, Dowling et al., [2] presented another seminal work on coopetition. The term, conceptualized as types of multifaceted interorganizational relationships, "incorporate elements of both traditional competitive relationships and collaborative relationships, posing new concerns about the management of interorganizational relations that have not been addressed by organization scholars" (p. 155) [2]. Thus, the theoretical bases used by Dowling et al., [2], for the development of his work were the resource-based view and the theory of transaction costs [2], [6].

Dowling et al., [2] then described three formats of interorganizational cooperative relationships (horizontal and vertical) in which: a) buyers or suppliers engage in direct competition; b) buyers or suppliers engage in indirect competition; and c) between competing partners. When exploring theories' characteristics (view based on resources and transaction costs), they formulated eleven affirmative questions with a view to cooperative relationships [2]. The researchers presented examples of empirical cases to exemplify the competitive and cooperative relationships between different, technology-based firms.

In the 2000s, Luo, Slotegraaf and Pan [17], focused their research on multifunctional coopetition, guided at the intraorganizational level, between departments of the same firm[17]. The research seeks to identify the role of such departments in the transfer of knowledge from firms. Thus, they argued that coopetition between functional areas of the company improves financial performance and increases customer loyalty within an organization. The researchers prepared a questionnaire, was applied to 163 managers of high-tech companies. The work presented demonstrated paths for discussions about coopetition with a view to the development of strategic marketing and the integration of the company's multifunctional units.

According to Chin, Chan and Lam [31] the multifaceted characteristic of the coopetition strategy allows for numerous approaches and different levels of analysis[31]. These researchers presented coopetition as a revolutionary mentality. Thus, through the application of the Analytic Process Hierarchy (AHP) methodology Chin, Chan and Lam, identified seven critical success factors, distributed in three major categories, for the management of coopetition. This table shows that seventeen sub-factors were listed as well. Among the main findings of the research, management leadership and trust stood out as the main elements for the success of cooperative relationships [31].

According to Chin, Chan, and Lam (p. 438) "the factors of coopetition could help the organization to understand the nature of the critical success factors so that they can

investigate their current situations of coopetition strategy for improvement" [31]. The analysis framework proposed [31] is presented at four hierarchical levels based on: 1) objectives; 2) categories; 3) factors for each category; and 4) sub-factors. It worth mentioning that the research was developed only in high-tech companies in Hong Kong, with a focus on the coopetition defined such as high competition and low cooperation [48].

Understanding of business ecosystems [18] coopetition as an inevitable strategy in technology sectors. Thus revealing important relational aspects "within" and "between" business ecosystems of five major technology companies. The concept for business ecosystem adopted by the researcher synthesizes approaches based on strategically modeled business networks.

As of 2010, there is a greater proliferation in the flow of research on coopetition. In the work presented by Rusko [37] perspectives on value creation through coopetition are addressed, with an emphasis on supply chains. Thus, the researcher approaches elements of Porter's value chain, in studies on competitive advantage, and shows the similarities between both chains (value and supplies) [49]. On the other hand, the researcher adds elements of cooperation, based on the approaches of Doz and Hamel [50], when observing the creation of value in the midst of the formation of strategic alliances.

Rusko then analyzes Coopetition from a conceptual framework, in which, the business environment that has been forming does not allow following purely competitive or cooperative logics. The framework elaborated [37] presents different types of possible connections between cooperation and coopetition at the supply chain level. When presenting the multifaceted coopetition, the researcher presented the win-win-win understanding in which all members of the chain win in some way.

Just as Chin, Chan and Lam [31] previously did Petter et al.,[39] they also sought to identify critical success factors in the coopetition strategy. The focus on relationships that took place in the midst of horizontal cooperation networks, brought to light the differentiation of strategy in the midst of these networks, based on interdependence and the possibility of competing at the same time as cooperation[31], [39].

When analyzing the benefits of coopetition in the steel sector (steel industry), Cygler et al., highlighted that the cooperative relationships in this sector drive the growth of the firms involved. Resulting benefits from the relationship, observed both internally and externally, become sources of competitive advantages, which can be measured by analyzing the financial returns of each company[40].

As research on coopetition began taking shape, research frameworks with an emphasis on different analysis groups started being observed [38]. A research in the smartphone industry, showing that the theoretical framework of coopetition divides into two large clusters, a contextual and a procedural one. The contextual scope emphasized issues related to the business environment and its global perspectives. Procedurally, relationships are observed at a

micro level. The results of the research led to the understanding that the same company may present both contextual and procedural characteristics [38].

In a special edition of the journal Industrial Marketing Management, [4] presented their perception of ambiguities in the application of the concept of coopetition in previous studies. Thus, they presented a broad concept of coopetition, providing for the possibility of multilevel interactions and a synthesis of research grouped at the levels of individual, organizational, interorganizational and network analysis. Bengtsson & Kock [4] defended the need for a concept that would capture the essence of strategy, in addition to daily relationships, thus providing for the possibility of integrating multiple actors in coopetitive relationships. At this point, the paradoxical nature of coopetition stands out, which differs from pure cooperation or competition strategies. Hence, Bengtsson and Kock (p. 182) conceptualize that the “coopetition is a paradoxical relationship between two or more actors simultaneously involved in cooperative and competitive interactions, regardless of whether their relationship is horizontal or vertical” [51]. Therefore, the complexity of the possible relationships between the actors involved in coopetition is recognized.

Following a similar perspective to Bengtsson & Kock [4] other researchers also had the perception of conceptual disparity applied in research on coopetition. In this way, Bouncken et al., [21] argued that coopetition needed a conceptual definition that at the same time was operational, as this would be more easily evidenced in practice. Referring to weaknesses in previous studies Bouncken et al., [21] performed a systematic review of the literature with a view to applying transparent search strategies with the possibility of replication, as directed by Tranfield, Denyer and Smart [34]. Bouncken et al., [21] identified that coopetitive relationships could occur at different levels of analysis (interorganizational, individual, intraorganizational and at the network level), corroborating the previous research developed by Bengtsson & Kock [4].

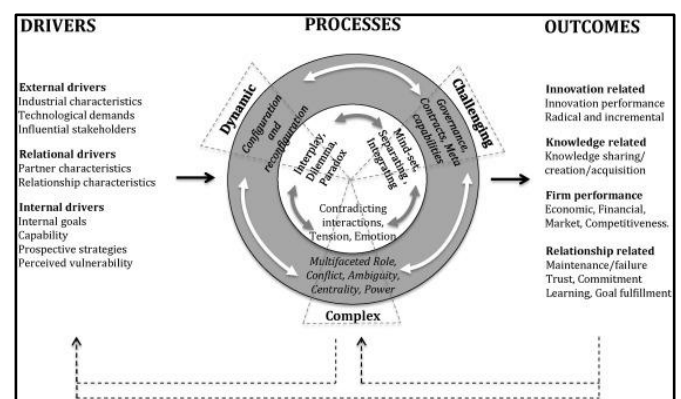
Thus, Bouncken et al., [21] sought to understand the scope of the research developed so far on coopetition, its strategic and management elements, reaching four dimensions of analysis related to the strategy to: a) gain market power; b) innovation processes; c) supply chain relationships and e) general competition. Moreover, three other dimensions related to strategic management: i) in the management of the elements of cooperation and competition simultaneously; ii) benefits and; iii) the risks of relationships, referring to a broad understanding of the strategy and covering the different levels of analysis possible.

In parallel with the research carried out by Bouncken et al., [21], and still following calls for greater understanding of coopetition, Gast et al., [41] analyzed citations, followed by a systematic review, to identify past and present researches, as well as possibilities for future research on the topic. Thus, researchers identified research clusters in the bibliometric research observing the applied theories, nature and scope of coopetition. The combination of quantitative bibliometric techniques and systematic literature review opened space for: a new paradigm of coopetition; for the analysis of

coopetition from specific contexts; and, for the relationship between coopetition and innovation. Gast et al., [41] agreed that coopetition is a hybrid form of relationship between firms, which encompasses both competition and cooperation. However, “to advance the field by means of future research, scholars should find a common definition that acknowledges the nature and scope of coopetition” (p. 510) [41]. This definition, together with the discussions presented by Bouncken et al., [21] and Bengtsson & Kock [4], represent the initial step for carrying out more judicious analyzes.

Dorn Schweiger and Albers [22] also signaled inconsistencies in research so far carried out, and drew attention to the analysis of interfirm levels, intra-firm and network level. Through a systematic review of literature, presented a concept map with future research directions. A model of antecedents and stages of initiation, management and evaluation for each level of analysis of coopetition (interfirm, intra-firm and network level) based survey analysis. From the analysis of the data, Dorn, Schweiger and Albers [22] identified five areas relevant to the advancement of research on coopetition based: on the nature of the partnership; governance formats; the results of the partnership; the characteristics of the actors; and, on environmental characteristics.

Proliferation of research on coopetition, combined with fragmented discussions observed in some works, has led Bengtsson and Raza-Ullah [5], to an in-depth investigation of the levels of analysis of coopetition. Through a systematic literature review, the researchers identified two main schools of thought to explain coopetition as a multi-level model: the actors' school, related to network studies in a broad way; and schools of activities, concerns relationships. When observing the interactions of both schools, they developed a dynamic model in which both schools interact in an integrated manner, which they called DPO (drivers-process-outcome), giving rise to the school of combined thinking, in which levels and sub-levels are integrated., as shown in Figure 4.



**Figure 4:** multi-level model of coopetition  
*An overarching and dynamic multi-level model of coopetition.*

Source: Bengtsson & Raza-Ullah (p. 33) [5].

“This model specifies the interactive linkages among drivers, processes, levels, and outcomes, and further demonstrates that a deeper investigation of such link-ages may be critical in providing a fuller understanding of where coopetition comes from, how cooperative processes are dynamic, complex, and managerially

challenging in both schools but in different ways, and how it matters to performance" (p.24)[5].

According to Bengtsson and Raza-Ullah [5], although the schools of thought actor and activities are similar in some terms, it is necessary to be thorough when conceptualizing the level of coopetition studied, to avoid the misuse of basic theories. Bengtsson and Raza-Ullah [5] stressed that the school of actors relates to the context of coopetition, but is limited to exemplifying cooperative relationships in a practical way. When mentioning the limitations of the Bengtsson and Raza-Ullah (p.27) actors' school of thought, one points out that "It does not provide keen insights on how to create successful cooperative relationships in practice with other firms, how to deal with the risks and tensions of 'sleeping with the enemy', and how to successfully make or break forced marriages between firm" [5]. The activity school, on the other hand, refers to the established cooperative relations and thus allows a better understanding of the nature of the coopetition. Although similar, the concepts have different phenomena.

Inductive research methods and literature review sought to identify the collective sense of researchers about the meaning of coopetition, highlighting the emergence of the topic in the scientific community and its relevance for strategic management. Thus, among the indications for future research, Minà and Dagnino [42] suggested verifying the cooperative dynamics and the evolution of coopetition and the ties and actions of coopetition and their relevant effects on the company's performance. They also suggest a study on cooperative capacities and the verification of the extent to which coopetition can be considered a managerial innovation and can help to advance the research field.

Under the application of the cluster analysis methodology, Devece, Ribeiro-Soriano and Palacios-Marqués [8] examined trends in research on coopetition. Thus, they found two independent trends in relation to the flow of publications: one aimed at stimulating cooperative scenarios and the other on the dynamics of tensions. The theoretical basis of this work were governance mechanisms, as shown in DornSchweiger, & Albers [22] directions. In their findings, the researchers found that the dynamics of the alliance stand out as an integral part of most works on coopetition and there is a need to expand research methods, highlighting the importance of comparative analysis of case studies.

Up to this point, one found that research on coopetition directed towards understanding the dimensions of coopetition itself as a business strategy distinct from pure competition or cooperation. The verified works clearly demonstrate an evolution in the analysis field. From the year 2016, one observed the addition of related themes to the research on coopetition. The selected works kept the focus on coopetition, seeking to link it with other themes already identified in previous research gaps.

### 3.2 Research agenda

Place illustrations (figures, tables, drawings, and photographs) throughout the paper at the places where they are first discussed in the text, rather than at the end of the

paper. Number illustrations sequentially (but number tables separately). Place the illustration numbers and caption under the illustration in 10 pt font. Do not allow illustrations to extend into the margins or the gap between columns (except 2-column illustrations may cross the gap). If your figure has two parts, include the labels "(a)" and "(b)".

#### 3.2.1 Context-based coopetition

Coopetition is easily perceived when related to innovation, high-tech and / or knowledge-intensive sectors. However, it is possible to find it among countless other contextual environments. A good example to approach to exemplify this case are the tourist destinations, closely related to the local and regional development itself. From a theoretical review applied between 1996 and 2015, Chim-Miki and Batista-Canino [43], sought an association of coopetition with tourist destinations. Tourist destinations, characterized as complex units of analysis and management, which have a large number of stakeholders with individual objectives; however, there is also a congruence of objectives with a view to improving the competitiveness of the sector.

One can conceptualize tourism coopetition as a dyadic behavior coopetition, where there is involvement of two or more players in the same destination, in order to promote the development of a specific destination. Chim-Miki and Batista-Canino [43] highlighted three main elements for future research on tourist destinations: based on general models, performance models and coopetition as a form of business. Thus, one emphasizes that the tourism sector is a promising field for studies on coopetition.

#### 3.2.2 Supply Chain

Using combined research methods, based on systematic review and data mining, Bin Makhshen et al., [28] sought a greater understanding of ambidextrous coopetition in the development of resilient supply chains in the fashion market. With the help of the theoretical lens of dynamic capabilities and the resource-based view, the researchers presented an analytical framework for ambidextrous coopetition. The object of study of the researchers was the supply chains of the fashion market, which shows itself as a promising environment for research on coopetition, given the volatility of this market, traditional resilience strategies are not sufficient to exploit the resilience capabilities of fashion supply chain. As an indication for future research Bin Makhshen et al., [28] presented a research agenda specifically on ambidextrous and a suggestion to expand the performed research, in order to empirically validate his proposition.

#### 3.2.3 Entrepreneurship and new businesses

When approaching entrepreneurship and new businesses, some research paths look promising. Previous work has signaled the need to explore coopetition in the context of startups [41], and in relation to knowledge flows [17]. The work of Sindakis Aggarwal and Chen [11] deals with entrepreneurship in startups, presenting a review about the coopetition and knowledge flows in venture capital companies. Thus, researchers start from the premise that knowledge sharing is one of the elements inherent to coopetition. The research gap explored [11] relates to the transfer of knowledge between venture capital companies



and the development of innovation in new ventures. Future research needs to take into account: the ability of venture capitalists to grow new ventures remains unclear [11].

Advances in the literature on coopetition include works linked to entrepreneurial marketing. Studies on coopetition were incorporated into the marketing literature [45] who presented the proposal for a conceptual framework, to assist the expansion of empirical research on coopetition. Thus, one based on the seven dimensions of entrepreneurial marketing theory, stimuli for proposing future research. Its indications and studies of the variables raised and imply in the development of research in industrial contexts in which it is preexisting with a coopetitive mentality. Chan and Lam [31], in previous research, addressed elements of coopetitive mentality.

Another research carried out by Crick [26] in the field of studies on entrepreneurial marketing is incorporated into the literature on coopetition. Thus, under the theoretical lens of Resource Based View and Relational View, Crick [26] presents his concept of organizational performance. The objective of the research in question was to examine moderating factors that affect the relationship between coopetition of organizational performance. The results of Crick's research [26] indicated that the competitive environment represents different effects on the performance of firms, when observed through coopetitive activities. For future investigations, Crick [26] suggests the inclusion of the competitive environment, resources, capabilities and confidence in the research, mentioning that such propositions must be converted into hypotheses and quantitative research to test the claims. They also suggest the application of theoretical lenses such as the Contingency Theory, to better understand the role of the competitive environment, and Agency Theory, for moderate confidence factors.

### 3.2.4 Behavioral factors

The research of Lascaux [24] has observed elements, in the levels of intra-firm analysis (interpersonal and intergroup), to examine elements on the development of trust in coopetition. Czakon, Klimas and Mariani [12] adopted behavioral vision in order to investigate the perceptions of managers about coopetition the background in order to understand how organizations adopt a coopetition. In this way, the researchers developed and empirically tested a measurement scale for the behavioral antecedents of coopetition, based on strategic logic and coopetitive mentality.

In their findings, Czakon, Klimas and Mariani [12] incorporate elements of trust, previous experience in coopetition and cooperative guidance, which converge to form the construct of antecedents called coopetitive mentality. Thus, researchers advance in the coopetition literature, adding to the analysis processes the cognitive factor of individual managers, until then not treated in the literature on coopetition.

To Czakon, Klimas and Mariani [12] behavioral approach implies coopetitive strategy in rational decision-making. Thus, the researchers' suggestion is that partners of similar

minds should forge coopetitive relationships. The coopetitive mentality implies the managerial capacity to work with actors in both orientations (competitive and cooperative). The coopetitive mindset also allows managers greater capacity to take advantage of opportunities to create value.

As an indication of future research, Czakon, Klimas and Mariani [12] suggested the use of scales, developed by them, in various geographical and industrial contexts, thus helping to build and accumulate a coherent body of knowledge about coopetition strategies and their motivators. These authors also find interesting the expansion of studies on organizational processes that contribute to the adoption of a coopetitive mentality.

### 3.2.5 Tensions in relationships

Previous works discuss tensions arising from co-op relationships [8], [13]. To deepen these issues, Tidström, Ritala, & Lainema [10], dedicated themselves to exploring specific issues observed in coopetitive relationships. Therefore, the researchers analyzed the tensions inherent in coopetitive relationships, in the sharing of knowledge and in the allocation of resources and tasks. To structure this analysis, one points out procedural and interactional practices that provide for formal and informal levels in coopetitive relationships. The concept of coopetition as a practice helped to build a structure for managing the tensions arising from the relationship. From the illustrative analysis of two case studies Tidström, Ritala, & Lainema (p. 952) "coopetitive tensions are related to resource and task allocation, knowledge sharing and strategizing" [10], in this way they presented ways for managing such tensions, through the combination of formal and informal interaction practices.

According to Tidström, Ritala, & Lainema [10], managing tensions in the coopetitive strategy in procedural and interactional practices requires transparency in communication and formalization of agreements between the parties. The researchers also pointed out that the analysis of tensions is a fertile field in the development of future works on coopetition, given the empirical managerial implication of this approach, emphasizing the need for investigations at the level of the individuals involved. Thus, they suggest research with purely competitive and purely collaborative elements, as well as more in-depth case study approaches. The field of research on tensions in coopetition can benefit from further research from the perspective of the network, with a focus on the activities carried out.

### 3.2.6 Trust in relationships

Another element of the elements strongly addressed in research on coopetition is trust between partners [5], [22]. Thus, Lascaux [24], sought theoretical contributions on the role of trust in coopetitive relationships to develop a framework of antecedents, processes and results of trust at four levels of analysis. Lascaux [24], adopted the perspective of *Drivers, Process and Outcomes Framework* suggested by Bengtsson & Raza-Ullah [5], to create a structure capable of explaining the role of trust in coopetition, taking into account the different levels of analysis possible. The research carried out by Lascaux [24]



took into account the levels of intra-organizational, inter-organizational and network level, subdividing, however, the intra-organizational level into interpersonal and intergroup, thus providing for the capture of elements related to the behavior of these individuals, which will reflect in confidence.

Aspects of trust in coopetition were explored by Kostis & Näsholm [47], adding the element of mistrust as a relevant factor in the analysis. Kostis & Näsholm [47], just as Lascaux [24], guided their research in the structure Drivers, Process and Outcomes Framework [5]. From the analysis performed, [47] identified that trust can become a harmful element in coopetitive interactions, however, mistrust is a distinct phenomenon, and the synergy between trust and mistrust can be productive for the success of coopetition. They also stressed that trust is a relevant direction for future research, and may include types and dimensions, trust versus mistrust: in the light of uncertainty and the risks of coopetition, checking the good and bad sides of each, among others.

### 3.2.7 Decision-making and security criteria

Rapid changes faced by companies to remain competitive can lead organizations to make the wrong decision. In this perspective, Shvindina [11], explored in his research elements related to security and protection in future investments in research and development. When mentioning two air accidents that occurred with aircraft of the type Boeing 737 MAX8, Shvindina [11], said that excessive competition linked to the reduction of time and allocation of resources could lead to wrong decisions increasing the risks to the safety of users. Therefore, [11] sought to align the strategy of coopetition security elements to identify beneficial elements in both areas. In its results, it identified possibilities for future research involving, for example: safety in Industry 4.0, cybersecurity in sharing economies, supply chain management, solutions for interactions between sensors in a multi-sensor environment.

## 4. Final Considerations

The main objective of this systematic literature review was to understand the forwarding of studies on the coopetition strategy and to formulate an agenda to assist in future research. Therefore, one found that coopetition is a business strategy in which elements of both competition and cooperation integrate themselves simultaneously. It is important to pay attention to the concept adopted for carrying out research in this field, so as not to incur in reducing the concept of cooperation between competitors.

In the development of research on coopetition, the authors suggest the adoption of a broad concept, in which it is possible to cover the complexity and multifaceted dynamics of coopetition, without restricting it to collaborative relationships between competitors [4], [21]. After defining the concept, identifying the level of analysis to be studied (individual, organizational, interorganizational and network) is key. From the definition of the object of study, understanding the environmental context in which such object is inserted is crucial. From there it is possible to identify the most adequate basic theory for the intended

analysis (for example: Game Theory; transaction costs, the resource-based view, the Dynamic Capabilities Theory, the Relational View, Agency Theory, Theories behavioral, Contingency Theory, among others). The schools of thought of actors and activities presented by Bengtsson & Raza-Ullah [5] present themselves as a useful tool in the initial research phase. From the analysis of the articles, one presented referral for future research, verifiable in the research agenda subsection.

Another contribution of this work concerns its adopted methodological aspects, which stand out for their transparency and the possibility of replication, for the development of systematic literature reviews with a view to understanding a specific theme. The protocol established for conducting the systematic review does not extinguish the subjectivity of the method, but helps to reduce this subjectivity and qualify the analyzed sample. The suggestion for future work is the observation of the theme from the protocol described in this work in other databases of scientific articles, as well as the complementation with bibliometric research. The authors also suggest a more detailed look at how the theme of coopetition addresses from the year 2020, since changes in the structures and strategies of companies occurred due to the challenges caused by the COVID-19 outbreak.

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