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OPPORTUNISM SANCTIONS
IN DIVERSE AND INTERNATIONAL CO-OPETITION :
THE CASE OF FRENCH BOATING COMPANIES

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EXECUTIVE SUMMARY

There are many firms that now engage in co-opetition projects, during which they have relationships with competitors that are simultaneously competitive and collaborative, in order to combine the advantages of both positions. However, co-opetition remains a risky strategy because of the opportunistic intentions of some of the participants. This study asks this original question : does the threat of opportunism grow with the scope of a co-opetition project? To answer this question, an empirical study of 106 French boating companies offers a descriptive and explanatory analysis of co-opetition and opportunism. The results of the study indicate that extended co-opetition in several markets is particularly associated with the preparation and deployment of sanctions to deter opportunistic tendencies in co-opetitors. During co-opetition, firms are more vigilant in maintaining a competitive balance, particularly when the collective project environment is a complex one.

KEYWORDS

Multi-market and multi-point co-opetition, opportunism, sanctions.

INTRODUCTION

Coined by Raymond Noorda in the 1980s, 'co-opetition' was a neologism that combined the words 'competition' and 'co-operation' and was intended to evoke the simultaneity of these two relationships between firms (Bengtsson & Kock, 1999). Until the 1990s, competition and collaboration were often seen as two opposing relational modes. However, many competitors are now developing collaborative activities (Brandenburger & Nalebuff, 1995) and, therefore,

environmental co-opetition has become plural (Lacam & Salvetat, 2016). Co-opetition proceeds in a dyadic relationship within a network of multiple rivals that interact on one or more levels of their value chains, markets or territories, and is based on a partial congruence of interests and value creation (Kock, Nisuls, & Soderqvist, 2010 ; Padula & Dagnino, 2007). However, co-opetition remains a risky strategy because of the opportunism of some players (Luo, 2007). Bengtsson and Kock (1999) have highlighted the risk of a conflict of interest between co-opetitors when there is an inability to balance competition and co-operation. Faced with such a threat, financial and legal sanctions against opportunistic firms can be applied (Carpenter, Matthews, & Ong'ong'a, 2004). For Williamson (1985), however, such a mechanism does not provide sufficient security or governance and stems from the inability of firms to understand and anticipate all the intentions and actions of the other parties before and during an agreement. Moreover, a rigid system of governance may put co-operation at risk if co-opetitors perceive it as being too restrictive (Luo, 2007). Co-operation can take various formats according to the needs of the stakeholders and the organizational, historical or cultural context of their relationship. However, although the literature has been concerned with various opportunistic actions that can occur during co-opetition, the link between the sectoral and geographic dimensions of a project and the instability of the co-opetitive relationship has not so far been addressed. The internationalization of co-opetition and the industry context deserves further consideration (Luo, 2007). It was thought to be interesting to consider the possible influence that the sectoral and geographic scope of the objectives of co-opetitors could have on the degree of rivalry as expressed through opportunism and the use of sanctions as a control instrument.

Much of the research on co-opetition is conceptual and qualitative studies have focused on understanding the co-opetitive processes within a single company or a limited sample, often within technological markets (Depeyre & Dumez, 2007). However, according to a study by

PricewaterhouseCoopers (2012), the French boating industry is gradually developing collaborative policies to support actors in the defense of their local markets or the conquest of foreign ones. The market has certain favorable characteristics for the development of co-opetition. Therefore, this empirical study of 106 firms from a traditional market provides a descriptive analysis and an original and detailed explanation of the dual nature of co-opetition and the environmental determinants of opportunism sanctions. The results show that the risk of a return to confrontation between firms is particularly significant in co-opetition. Opportunistic risk requires the existence of a dissuasive sanction mechanism to maintain the co-operative effort of participants. More precisely, sanctions are prepared and applied particularly where co-opetition operates in a diverse (multi-market) and international (multi-point) environment. The complex environment of co-opetition therefore changes the relationship between co-opetitors : the opportunities for being opportunistic are multiplied and the balance is weighted accordingly towards applying sanctions to opportunism. Thus, this study highlights the particular balance of power that is established between co-operation and competition in a sectorally and territorially extended project. In this context, deterrence proves to be a key mechanism for maintaining collaboration.

THEORETICAL BACKGROUND

Co-opetition: An environmental strategy of an unstable nature

According to Bengtsson and Kock (2000), four relational modes can bind rivals : competition, coexistence (a form of avoidance), co-operation and co-opetition. Competitors are defined as players in one or more markets (products/services) and points (territories) who struggle for scarce resources and/or produce and sell similar deals to joint customers. Thus, competition

could involve a single market and territory (a single-market and single-point environment) or a complex environment that consists of several markets and territories (a multi-market and multi-point environment) (Bernheim & Whinston, 1990). A co-operation or co-opetition relationship can also take place in a simple or complex environment, guided by the objectives of specialization or sector diversification and by national or international goals (Lacam & Salvetat, 2016).

In contrast to a classical alliance, in which co-operative gives way to competitive behavior, co-opetition represents the coexistence of these relationships (Bengtsson & Kock, 2000). Several works in the literature highlight the value of a co-opetition strategy for combining the benefits of both co-operative and competitive relationships (e.g. Lado, Boyd, & Hanlon, 1997). Co-operation enables a firm to create greater business potential through collective value creation; at the same time, competition allows the firm to secure personal benefits at the expense of the other co-opetitors. Co-opetition thus ensures competitive emulation and opposes all collusive practices: the relationship does not cancel competition, as it concerns, in any event, increasing market share at the expense of the consumer (Walley, 2007).

Some competitors can, due to their presence in the same markets, identify and decide to manage many of the environmental events that they could not cope with alone. Gnyawali and Park (2009) point out that the majority of projects are carried out co-opetitively between competitors in the same market. Co-opetition between direct rivals may be motivated by access to resources and external expertise in order to strengthen their respective offers vis-à-vis their customers (Bengtsson, Wilson, Eriksson, & Wincent, 2010). The resources they have that are similar, such as their organizational routines and shared environment, facilitate understanding of their interdependence, connections and co-operation (Oxley & Sampson, 2004). Ritala and Hurmelinna-Laukkanen (2009) point out that co-opetition can allow direct rivals to respond collectively to threats from common opponents through, for example, the combined efforts of innovation. Thus,

two French small and medium-sized enterprises (SMEs), the Alu Marine and Nautitech shipyards, created a joint venture (Marine Development) to develop their respective ranges of catamarans. The approach utilizes a complex network composed of multiple members, which feeds collective efforts through a broad mobilization of resources, skills and knowledge (Padula & Dagnino, 2007). The distribution of profits between firms from the exchange, sharing or co-creation of assets can take place only during a project or continue after its close after having reached an agreement (Clarke-Hill, Li, & Davies, 2003). Collaborations can be synergistic via the combination of identical or complementary resources (M'Chirgui, 2005). The combination of similar resources reduces the costs and risks of a proposed sectoral or territorial expansion through the realization of economies of scale. The additional commitment of resources promotes the collective creation of knowledge and innovation to support the development of new activities (Ritala & Hurmelinna-Laukkanen, 2009). Benefits from a large network of assets may, therefore, renew or diversify the activities of co-opetitors in a dynamic and complex environment (Kock *et al.*, 2010). Co-opetition can thus support an offensive strategy, and the diversification and internationalization of the participants (Bengtsson *et al.*, 2010). However, opportunistic behavior can emerge and be a motivation for undertaking co-opetition (M'Chirgui, 2005). Opportunism is involved in the dual and unstable nature of co-opetition, as this strategy is desirable for a firm preparing for future confrontation (Gnyawali & Park, 2009). Despite benevolent motives at the start of a project, there is a strong propensity to compete in a collective project because co-operation increases individual competitiveness (Lado *et al.*, 1997). Indeed, the success of co-operative work strengthens the competitive position of a company in new markets and territories shared with co-opetitors and thus extends their rivalry to being multi-sectoral and global. Co-opetition is used to ensure the establishment of a firm in a new market environment. After reaching this stage, the collective effort can be maintained with the emergence of individual and contradictory tendencies among the

participants. After obtaining the assets required for its establishment and growth, a company can then develop its aggressiveness due to its increasing independence vis-à-vis its co-opetitors. The objectives of the sectoral and geographic deployment of co-opetitors unbalance the competitive relationship and increase the chances of the emergence of opportunistic behavior.

Hence, the following is hypothesized :

H1 : The greater the environmental complexity of co-opetition, the greater the opportunism present during co-opetition.

Sanctions as an instrument of control during co-opetition

Co-operation requires balance and compromise between individual and collective interests, between the advantages of pooling and the risks of opportunism. The combination of co-operation and competition presents different types of co-opetition (Padula & Dagnino, 2007). Bengtsson and Kock (2000) developed a typology of co-opetitors that characterizes the dominant co-operative relations as competitive and balanced. Lado *et al.* (1997) and Luo (2007) reveal four co-opetitive relations through the simultaneity of strong co-operation and weak competition, strong co-operation and strong competition, weak co-operation and strong competition, and, finally, weak co-operation and weak competition. Thus, firms that engage in collaboration face considerable moral hazard problems due to the unpredictable behavior of their allies and the likely costs of opportunistic actions taken by them (Williamson, 1985). Co-opetition poses several risks, such as the loss of strategic and specific resources for the projects of the firms that are left behind. The costs induced may outweigh the benefits of co-operation and cause it to break down (Phelps, 2010). For example, protective mechanisms with regard to a company's own resources and skills might be established (Gnyawali & Park, 2009). The relationship can become unbalanced between co-opetitors and thus strengthen opportunistic initiatives (M'Chirgui, 2005). This is competition in the

form of collective action (Luo, 2007), as the collaboration allows a firm to both reduce the asymmetry of resources and skills vis-à-vis its co-opetitors, and to understand their management precepts and better prepare for their next competitive actions. Co-opetition is, therefore, carried out with a high risk of opportunism (Clarke-Hill *et al.*, 2003).

To prevent or control the risk of opportunism, several forms of co-opetition control can be deployed (Ritala & Hurmelinna-Laukkanen, 2009). As a form of social control, firms choose their co-opetitors and co-operate with them based on their relational networks. Their norms of reciprocity and trust in a common ground guide their selection and regulate their relations. Social control is ensured during a project. Co-opetitors' familiarity with each other promotes understanding and communication, but also the monitoring of behavior. A system of opportunism sanctions can also be deployed by firms (Carpenter *et al.*, 2004). A reduction in rivalry can come from an awareness by companies of a collective ability to detect selfish behavior and enforce punishments. The interdependence among players in the same network can minimize the likelihood of a firm behaving opportunistically due to the implementation of monitoring and the high risk of a collective social sanction (Burt, 2000). Williamson (1985) refers to the pressure placed on corporate reputation as a key means of constraining opportunism. The sanction may also extend to exclusion from a network. The possibility of sanction serves to reassure firms that an unco-operative ally could face losses during a collaboration (Lado *et al.*, 1997). Thus, formal control of co-opetition can be established through a consortium, joint venture, license, etc. (Luo, 2007). This control consists of bonds and organizational mechanisms of co-operation that detail the roles and responsibilities as well as the processes and results that are to be closely monitored. Such an agreement may consist of contractual guarantees that incorporate sanctions for non-compliant behavior (Williamson, 1985). Confidence may stem from the belief that costly sanctions would be applied and exceed the gains made from potential opportunistic behavior. The financial loss could

be enough to deter opportunism, but the moral cost may also be an important deterrent (i.e. loss of reputation or brand image caused by the other members of the same network).

Hence, it is hypothesized that the proliferation of opportunistic action is accompanied by the propagation of sanctions :

H2 : The greater the opportunism present during co-opetition, the more opportunism is sanctioned.

The extent of environmental co-opetition in determining sanctions against opportunism

If the gains from co-opetition come from a collaborative effort maintained despite simultaneous competition among its players, they can also come from opportunistic behavior favored by the sectoral scope and/or territory of a project. For example, international co-opetition presents certain difficulties that differentiate it from domestic co-opetition (i.e. the removal of the difficulty of monitoring operations if actors are in separate territories). The organizational, cultural and informational asymmetry between co-opetitors can promote opportunistic actions. The security aspect of the relationship remains paramount and includes possible political sanctions against co-opetitors that are considered too individualistic.

Violation of a collaborative agreement may trigger sanctions that are either selective or deployed across a wide range of markets and territories (Hemphill & Vonortas, 2003). There could be two reasons for this. First, the sectoral and geographic deployment of co-opetition can increase the vulnerability of a firm to the opportunistic action of a co-opetitor that could attack it in any of its competitive arenas following a collective project. As a result, the firm could establish a dissuasive system of sanctions to secure the relationship. Second, the establishment of a firm in several markets and territories occupied by its co-opetitors gives it the opportunity to apply

sanctions because of the increasing overlap of their competitive environments. Initially, increased contact with various members of the same extended network means the firm can better monitor the behavior of co-opetitors. For example, the firm may be informed of the use of technology developed in co-ownership under a collaborative agreement and yet be exploited by its co-opetitor outside the collective project for self-interested purposes. Then, the extent of the opportunity provides a common network with the incentive to sanction the co-opetitor in several of its strategic markets (e.g. by launching an international price war). The threat of a multi-sectoral and/or worldwide conflict that goes beyond the single collaborative environment discourages opportunism.

In recognizing their interdependence, multi-market and multi-point competitors are open to mutual tolerance because everyone can win by allowing the others to dominate in certain environments in exchange for similar treatment for themselves in other fields or places of activity (Baum & Korn, 1999). This mutual tolerance emerges as a result of familiarity and deterrence. Co-opetitors can thus protect all their gains in response to attacks from opponents they have in common and direct the competitive dynamics of their market share (Ritala & Hurmelinna-Laukkanen, 2009). In this sense, the fear of social and economic sanctions in the face of opportunistic behavior can encourage co-operation (Hemphill & Vonortas, 2003).

Hence, the following is hypothesized :

H3 : The greater the extent of the co-opetition environment, the more opportunism is sanctioned.

The theme of this research connects the sectoral and geographic extent of co-opetition with the opportunism of its participants and the threat of sanctions. It is argued that the environmental complexity of co-opetition leads to confrontation, which was previously under control, returning.

An empirical study of the environment, nature and control of different relational strategies employed by competitors in the French marine market should enable an account and explanation of the peculiarities of co-opetitive exchanges. Figure 1 summarizes the links between the variables considered in this study, the theoretical logic applied and the assumptions presented above.

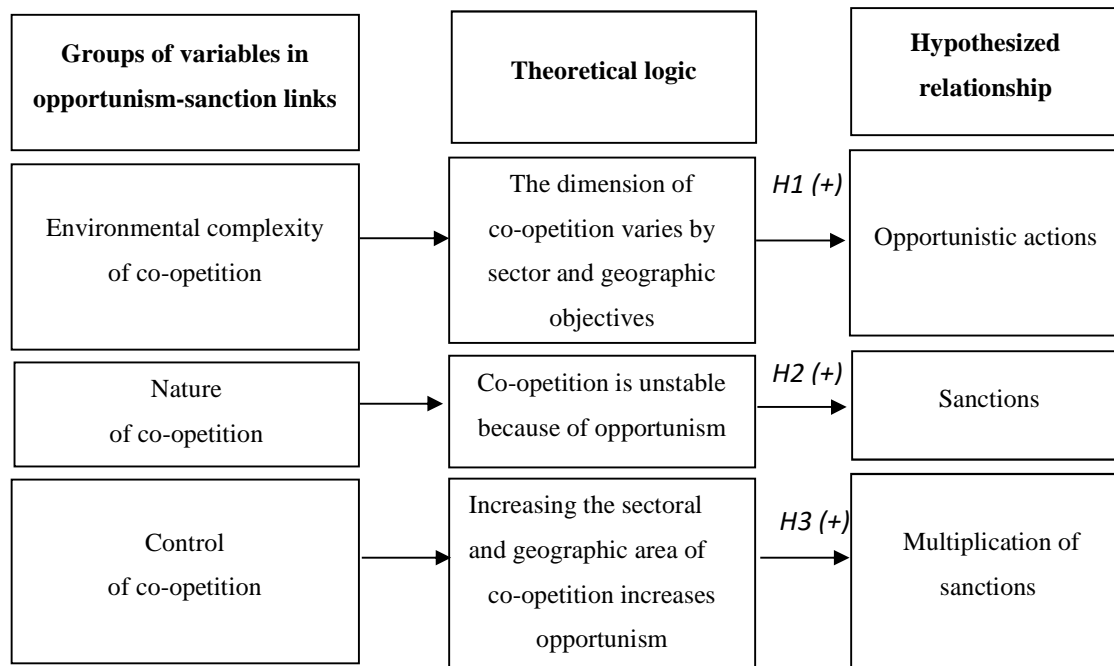


Figure 1. Extent of co-opetition and its influence on opportunism sanctions

METHOD

French boating market and sampling

The majority of work on co-opetition has studied the process through the use of qualitative methods applied to a single firm or a small group of companies selected according to structural criteria (size, age, etc.). Few studies have attempted to describe and explain co-opetition via a quantitative method. To do this, a statistical analysis of the French boating market was performed

that considered eight activities (boat building, etc.). Boating companies were identified using 30 codes from the European Classification of Economic Activities (NACE) Rev. 2.

The research questionnaire was constructed to collect primary data around eight themes : the profile of the respondent and his/her firm, the reasons for collaboration, the management and governance of the project, the nature of the co-opetitors and their exchanges, and the extent of the involvement of the company in the project. The questionnaire was sent to 2,290 French boating companies selected using simple random sampling. This method ensured the representativeness of the sample : each unit in the population had an equal chance of being selected. Consistent with the research objectives, statistical inference thresholds were for at least 30 respondents to ensure descriptive analysis and a minimum of 100 respondents to ensure explanatory analysis. After receiving 115 responses to the survey, 106 companies were selected because of the satisfactory level of information provided in their questionnaires : 93% were SMEs and 85% of the respondents held a position of responsibility within their company. In addition, secondary data were obtained from three databases (Diane, FIN and boating Figaro) to measure four structural variables of the companies : turnover, workforce, age and group membership. Finally, statistical analysis was performed using SPSS and AMOS software.

Data processing

The measurement scales were built in three stages. First, Kaiser-Meyer-Olkin (KMO) and Bartlett tests were performed to ensure that the data were factorable and would allow the realization of principal component analysis (PCA). The KMO test measures the correlation between the variables with the criterion for factorization being a value of at least equal to 0.5. The Bartlett test verifies that the matrix of correlations is not a unit matrix. The test must have a value equal to 0.

Second, the Kaiser rule was mobilized to purify the factors of each variable depending on the quality of their information. Only the factors having a value at least equal to 1 were kept, a value which indicates the degree to which the variable explains the phenomenon measured (total percentage of variance explained). Third, a PCA stress test was carried out in order to strengthen the tri-factor for each variable. The rule of minimum restitution selected the factors that explain at least 50% of the total variance of the phenomenon by the variable.

Items were selected to calculate the best variable by calculating the squared cosine (\cos^2) or commonality. Commonality (an index positioned between 0 and 1) informs us of the level of consideration of an initial variable by the set of factors selected in our analysis. Applied individually, commonality shows the share of the information of this variable explained by each item. Each item was eliminated in turn if its commonality remained the lowest below the value of 0.5 (Carricano, Poujol, & Bertrandias, 2010). The remaining items consisted of new factors that provided a guarantee of quality when measuring the variable. We evaluated the reliability and validity of the internal consistency of each variable by calculating Cronbach's alpha (see Table 2). Cronbach's alpha ensures that the items correctly measure the phenomenon associated with the variable. Convergent validity, which ensures the correlation of all the items together, is achieved when the coefficient is at least equal to 0.5 (Evrard, Pras, & Roux, 2003). Finally, all these items correctly calculate the variable.

To better understand the major components previously selected, five rotations were made for each variable component factor. Provided by the SPSS software, this factorial representation distinguishes the items according to their position and distance to bring together the most informative aspects of each factor for which they provide the most information. To improve the accuracy of the information provided by the factors of the global variable, the information returned

by each rotation was calculated and the rotation whose factor scores were best was retained. This representation of combinations of items guarantees an optimal measurement of the initial variable.

Confirmatory factor analysis (CFA) to increase the reliability and validity of the measuring instrument was conducted through a new treatment of items. AMOS software evaluates the error terms in the links between latent variables and observable variables to reveal the goodness of fit between the empirical data and the theoretical models tested. Evrard *et al.* (2003) classify them into two groups : absolute indicators (chi-square, GFI, AFM, RMSEA and RMR) and the related indices (NFI, RFI, CFI, IFI and TLC) used for the CFA (see Table 2). From the factor scores forwarded by the PCA stress test, the correlation (weight) between the observable variables was calculated and provided clues to eliminate those variables with the lowest correlation. This process was repeated to obtain a satisfactory quality of fit between the relational structures tested and the data observed. After the factor analysis, there were three groups of 12 variables and 60 factors (see Table 2).

Typology analysis (TA) allowed similar businesses to be organized in a finite number of groups. Initially, the aggregative hierarchical classification allows the selection of the number of groups to be retained by reading the dendrogram. Second, non-hierarchical classification (the k-means method) improves the quality of the local rather than global classification. Based on the factor scores from the PCA and the CFA, the analysis of variance (ANOVA) guarantees the overall validity of the classification. Through the results of an F-test, the explanatory power of the factors and their meanings are calculated. The greater the F-value, the stronger the explanatory power. Finally, the results of the typology are validated by discriminant analysis (DA): this identifies a dependent variable (key function) that determines the membership of a firm in a particular group. The quality of the group classification is validated by two indicators : Fisher's F-test and Wilks' lambda. These tests verify the existence of differences between groups and identify the one or more

discriminating variables that allow a company to move from one group to another. Thus, five business groups and four discriminant functions were constructed by analyzing two groups of variables: "Relational modes" and "Environments and networks" (excluding institutional and vertical networks). The significant influence of an explanatory variable on the dependent variable was determined by studying variance (ANOVA). The involvement of each group with respect to the variables studied was raised by multiple comparison tests (MCTs): t-tests, Tukey with unequal group sizes, Scheffé, Bonferroni and least significant difference (LSD).

Finally, an explanation is given of the phenomenon that led to the deployment of an explanatory method to measure the causal relationship between two or more variables (the "dependent variable" and the "independent variable") based on the data from the sample (Evrard *et al.*, 2003). A stepwise model of multiple regression was applied, which sequentially eliminates the independent variables which do not explain the dependent variable ($F > 0.05$) (Evrard *et al.*, 2003). The coefficients of significant regression and determination ($R/R^2/R$ -adjusted) were held to show the links between two variables. Thus, the explanatory variables of "Opportunism sanctions" were designated by the stepwise multiple regression analysis, which incorporated the existence of five groups of firms.

RESULTS

Variables

This work presents a range of co-opetition practices across several variables that address the nature, environmental dimensions and control modes of the phenomenon. To assess the primary data, the questionnaire mobilized nominal (market, territory, etc.) and ordinal (from 1 = "Do not agree at all" to 4 = "Quite in agreement") scales. The items used were mostly from research

gathered during the literature review. The PCA and CFA confirmed the reliability, quality and discriminant validity of the following variables. These variables are discussed in more detail in Table 2.

To measure the response of boating companies to opportunistic co-opetitors, the "Opportunism sanctions" dependent variable was based on eight items from Uzzi (1997) (see Table 2). Sanctions can be established before and during collaboration to muzzle opportunism (Williamson, 1985). These sanctions are expressed through the threat of attack (e.g. launching a price war or a new competing offer) against an individualistic firm or through a defensive action, such as the threat of withdrawal by the firm injured initially (e.g. the protection of certain resources in collaboration or withdrawal from the project). Sanctions were approached in this study as a project control instrument to maintain a co-operative effort despite persistent rivalry between co-opetitors (Hemphill & Vonortas, 2003).

Three groups of independent variables were identified : the nature of co-opetition, the environmental dimension of co-opetition, and the control of co-opetition.

Co-opetition is a many-faceted phenomenon due to multiple balancing acts that can be established between competition and co-operation, given the profile of the firms, their relative strengths, the risks involved, etc. However, the nature of co-opetition has still not been evaluated due to the scarcity of research on the subject and a focus on the process. Therefore, the measure of the nature of co-opetition in this study mobilized 11 items taken from Powell, Koput, and Smith-Doerr (1996) to measure the various relational modes that firms can adopt (competition, alliance, defense and co-opetition); eight items based on partner selection criteria (their skills, market position and collaborative experience); eight items taken from Young-Ybarra and Wiersema (1999) on trust between partners as critical in collaborative engagement; 18 items from the same authors on different types of asymmetry between partners that may cause opportunism (an

imbalance between their resources, their ability to learn, and their position and influence in the common environment); and, finally, 18 items created on the types of risks faced by the partners in a collective project (failure of a partner, loss of resources, and individualistic actions).

The co-opetition phenomenon has still not been explored in any depth in terms of market analysis. Padula and Dagnino (2007) argue that co-opetition evolves within a competitive arena. Conversely, Luo (2007) maintains that the relationship can span different markets and territories. Moreover, debate persists regarding the simplicity or complexity of its networks. However, to our knowledge, no study seems to discuss the influence of the environment on co-opetitive approaches in any depth. In response to this, 10 items in relation to the sectoral and geographic dimensions of co-opetition were mobilized to measure the extent of the environmental dimension of co-opetition (a specialized or diversified market environment, a national or an international environment); 11 items taken from Lambe, Spekman, and Hunt (2002) on the nature of the collaborative networks deployed by firms (vertical networks, horizontal networks of two partners, or more complex ones of more than two partners); seven items taken from Wiklund and Shepherd (2009) on how the activities of value chains may be affected by a collective project (logistics functions and production); 19 items from Young-Ybarra and Wiersema (1999) regarding the contributions and creation of resources between partners during a project (taken from the six categories defined by resource-based view [RBV] theory); 23 items based on information learning and knowledge partners in a project (knowledge related to their human, physical, technological, organizational and commercial aspects); and, finally, 16 items from Todeva and Knoke (2005) on the underlying impetus (i.e. whether a project is suggested or imposed) and objectives of co-opetition (an individual or collective defense market, strengthening a market position, pursuing personal projects and further technological developments).

Finally, scientific debate also continues on the form of control in co-opetition. The theory of transaction costs calls for a formal framework of co-opetition, which must consist of contractual and organizational tools (Williamson, 1985). Conversely, network theory recommends a more relational governance guide, such as the choice of partners (Padula & Dagnino, 2007). Finally, Ritala and Hurmelinna-Laukkanen (2009) advocate the combination of social governance and organizational and legal aspects. Therefore, the measure of control in co-opetition mobilized 23 items created regarding different collaborative project management tools (contractual agreements, operations reports, projects as consortiums, maintaining respect for co-operative engagement); four items based on Todeva and Knoke (2005) on the different profiles of the project participants (partners, competitors and/or non-competing third parties as public actors); and, finally, 15 items created on the periodicity of sanctions on opportunism (at the launch, growth phase, maturity or decline of the project).

Finally, the four control variables were the size of a firm (effectiveness), its turnover, the date the firm was established and its membership of a group. The consultation of various digital databases (Kompass, Diane, etc.) enabled secondary data to be collected for the first three variables. The fourth variable was an item suggested by Belderbos, Carree, Diederer, Lokshin, and Veugelers (2004).

Five groups of firms identified

The scores related to the centroids are given in parentheses (G) below. "Multi-point and multi-market competitors" (Group 1) diversify (G = 0.906) and internationalize their activities (G = 0.735) through defensive relationships (G = 0.065) with their competitors that are competitive (G = 0.058) and complex (G = 0.284). "Mono-point and mono-market partners" (Group 2) conduct

a single activity ($G = 1.023$) in a single domestic market ($G = 0.400$) through collaborative relationships ($G = 0.359$) with their competitors that are defensive ($G = 0.163$) and dyadic ($G = -0.103$). "Mono-point and mono-market co-opetitors" (Group 3) develop a single activity ($G = 0.348$) in a single domestic market ($G = 1.142$) via co-opetitive ($G = 0.137$) and dyadic ($G = -0.248$) relationships with their competitors. "Multi-market co-opetitors" (Group 4) diversify ($G > 1$) without a dominant geographic strategy ($G < 1$) via co-opetitive ($G = 0.626$) and dyadic ($G = -0.464$) relationships with their competitors. "Multi-point co-opetitors" (Group 5) internationalize ($G > 0$) without a dominant sector strategy ($G < 0$) through competitive ($G = 0.663$), defensive ($G = 0.656$), collaborative ($G = 0.438$), co-opetitive ($G = 0.204$) and complex dyadic ($G = 0.295$) relationships with their competitors.

Four discriminant functions identified

The classification of companies into five groups presented a discriminating power of 93.84%. According to the Fisher's and Wilks' lambda tests, the "Mono-environment" and "Multi-environment" variables differentiate more firms (discriminative power of 93.84%). Four discriminant functions were identified (discriminating power of 97.90%).

"Co-opetition committed" (function 1) has positive scores for "Relational modes" and a "Complex horizontal network". This function describes the presence of co-operative but competitive behavior which is, therefore, opportunistic during the collective project. This co-opetition strengthens and pools the collective actions of many "Multi-point co-opetitors" (centroid = 3.019).

"Independent co-opetition" (function 2) has negative scores for "Relational modes" and "Complex horizontal networks". This suggests a high degree of independence in co-opetition for "Mono-point and mono-market co-opetitors" (centroid = 2.373), which minimizes and sometimes prevents their interactions with other firms. The relationship is remote because their co-opetitive interdependence is low due to the lack of collective interests and individual connections between firms.

A "Pooled alliance" (function 3) has positive scores for "Relational modes" (except for co-opetition) and "Complex horizontal networks". This type of project is characterized by alternating co-operative and competitive relations between "Mono-point and mono-market partners" (centroid = 1.252) which are part of a strong common collaborative network.

"Opportunistic co-opetition" (function 4) has positive scores for "Relational modes" and negative scores for "Complex horizontal networks". This type of co-opetition defines competitive relations and concurrent collaboration between "Multi-market co-opetitors" (centroid = 0.606) that adopt individualistic attitudes despite their collective commitment. On the one hand, co-operation gives a company access to new growth opportunities through support in conquering new environments. On the other, its opportunism allows it to be more competitive in these environments and to be more strategic in other areas.

Opportunism sanctions are not particularly used by "Multi-point and multi-market competitors" and "Mono-point and mono-market partners". Their relational model is not based on the paradoxical simultaneity of competition and co-operation which can promote the betrayal of a collaborative engagement. In contrast, opportunistic behavior strongly characterizes co-opetitors

that develop projects in complex environments. Co-operating in several markets (services/products) or territories encourages opportunistic behavior. Thus, H1 is validated.

Features of the opportunism sanctions of each group

The scores relating to the centroids (G) and significance levels of the Fisher's tests (p) are given here in parentheses. A significant difference ($p < 0.05$) is noted among the five groups concerning sanctions for opportunism. The groups of "Multi-market co-opetitors" ($G = 2.301$), "Multi-point co-opetitors" (1.378) and "Mono-point and mono-market co-opetitors" (0.590) have a positive centroid. Conversely, the groups of "Mono-point and mono-market partners" (-1.137) and "Multi-point and multi-market competitors" (-0.265) have negative barycenters. Thus, co-competition is characterized by other relational modes through the presence of actions by opportunistic co-opetitors which are, therefore, systematically sanctioned. Thus, H2 is validated.

Determinants of opportunism sanctions

Having distinguished the groups according to their level of co-operation, the explanations of the sanctions for opportunism are now analyzed. The stepwise regression model (see Table 3) shows "Opportunism sanctions" as the dependent variable. The response of the explanatory variable to opportunism is examined within each of the five groups of companies. For the sake of simplicity, only the statistically significant results are presented.

For "Multi-point and multi-market competitors", the more a company reacts to opportunistic behavior by imposing sanctions, the more likely the company is to be part of a group and to have unique resources.

"Mono-point and mono-market co-opetitors" respond to opportunistic behavior with sanctions when they share a common vertical network with their competitors, when the environment is a multi-market one, when there are fewer third parties in the project, when fewer of their commitments are met during a project, and when there is less asymmetry between their decisions regarding technological resources.

"Multi-market co-opetitors" respond to opportunistic behavior with sanctions when multi-market co-opetitors have a defensive strategy, when they develop knowledge related to human and physical resources, when they create technological resources, when they invest technological resources in a project, and when they learn strategic information.

"Mono-point and mono-market partners" respond to opportunistic behavior with sanctions when the environment is a multi-market one, when they prepare multi-point and multi-market sanctions upon the maturity of a project, when they invest technology resources in a project, and when they can learn less about the capabilities of their rivals.

"Multi-point co-opetitors" respond to opportunistic behavior with sanctions when multi-point co-opetitors prepare multi-point and multi-market sanctions at the maturity of a project, and when the asymmetry between the technological resources of multi-point co-opetitors is less.

In light of the above, H3 is validated. The increasing scope of co-opetition is accompanied by a sanctions mechanism.

DISCUSSION

Are opportunism sanctions developed particularly during co-opetition? This empirical study of the nature, environment and control of different relational modes employed by competitors in the French boating market has allowed the specifics of their co-opetitive exchanges to be revealed. The descriptive and explanatory analyses of the phenomenon and its sectoral and/or

territorial dimension provide three major findings on the role of sanctions against opportunism faced during precarious co-opetition.

The first result reveals the presence, which was not anticipated, of five business groups according to the environment, the degree of their collaborative engagement and their preparations for opportunism.

Competitors develop an offensive policy of sectoral and territorial expansion to increase their sphere of influence (Baum & Korn, 1999). The asymmetry of resources between diverse and global adversaries favors the emergence of mutual tolerance through their ability to strengthen their domination over their main strategic market and increase their multi-market contacts to act as a deterrent.

Partners apply a local specialization policy through the alternation of collaborative and competitive relationships with some of their rivals, which is inserted into a simple collaborative network (i.e. a dyadic relationship between two rival firms). In this form of agreement, rivalry gives way to co-operation so that everyone can improve a competitive position through a shared effort. However, this relational structure systematically reverts to confrontation. Therefore, the environment is familiar and made trustworthy and stable in order to secure the alliance.

Co-opetition is plural (Gnyawali & Park, 2009): it rests upon the existence of three groups of co-opetitors. First, some co-opetitors specialize locally with the support of a simple collaborative network. These firms are characterized by strong relational independence in co-opetition with no strategic incentive towards opportunistic behavior and, as a result, no incentive to retaliate. Second, some co-opetitors also rely on a single collaborative network in order to diversify. Co-opetition allows them access to heterogeneous resources and skills that are necessary for their establishment in new target areas for two reasons: the growth prospects of the target areas and their occupation by certain of the firm's competitors. Co-opetitors' settlement in the strategic markets of their rivals

will ensure security for them in an otherwise competitive environment. Third, internationalized co-opetitors develop a complex collaborative network involving multiple competitors. Their historical presence in a common domestic market promotes their proximity during the project and their ability to punish any local or global opportunistic action.

The results confirm the use of sanctions against firms that are aggressive in co-opetition. Offensive intentions promote opportunism in collaborative work. In response, co-opetitors adopt defensive sanctions through a mechanism that is established and used in addition to the contractual framework.

The study also reveals that reactions to opportunism remain disparate, depending on the relational modes between established competitors. The use of sanctions is particularly marked in the simultaneity of collaboration and competition that favors the appearance of opportunism. Conversely, sanctions are not deployed in an alliance that is based exclusively on a collaborative relationship.

Finally, it is accepted that the scope of co-opetition is associated with the preparation and deployment of sanctions. The growing scope of a joint project can be dangerous if it is not controlled (Oxley & Sampson, 2004). The defensive attitude of co-opetitors is reinforced in multi-market and multi-project deployment, which results in the use of sanctions as a mechanism in multiple areas and territories shared by rivals.

The second result reveals three discriminant functions, whereby co-opetition can be independent, engaged or opportunistic. Committed or opportunistic co-opetition is characterized by the strong internationalization and diversification of a project. The involvement of multiple markets leads to strong rivalry between co-opetitors (Luo, 2007). However, the failure of their collaboration is likely to unbalance their large-scale competitive relationship. Therefore, the environmental complexity of co-opetition is mostly controlled by the preparation and use of

dissuasive sanctions against aggressive firms. Furthermore, the sharing of markets among several co-opetitors promotes the efficiency of such a mechanism. Each time a firm enters the strategic markets of its co-opetitors, an opportunity is provided for it to convince its co-opetitors of their interdependence and their mutual interest in respecting their collaborative commitments.

The third result shows the determinants of opportunism sanctions. These are outlined in the stepwise multiple regression model. The growing strategic importance of co-opetition is a factor in the preparation and application of sanctions. Thus, sanctions in various markets and territories are often deployed in the phase in which the collaboration reaches maturity. There are several reasons for this. First, opportunistic behavior allows a firm to obtain value from collaborative work undertaken over the long term. Long-standing collaboration creates a high degree of value, which can be lost to opportunistic behavior. Therefore, punitive actions are enacted at the maturity of the project. Second, these sanctions are facilitated when an initial asymmetry between co-opetitors is erased by the distribution of collaborative gains. Co-opetition gradually strengthens the competitive position of firms in shared markets and territories. Their ability to oppose opportunism is thus enhanced as a result of gains emanating from the sustainability of their co-operation with their competitors. Thus, the more time that is spent on collaborative work, the more likely it is that the exploitation of collaborative engagements will result in a response from actors who are now in a position to punish this behavior. Finally, the extensive damage caused by the abandonment of a historic collaboration during the competitive actions of rivals is also likely to provoke a strong reaction against opportunism on the part of the injured firms.

The environmental complexity of co-opetition is, therefore, another important factor in opportunism sanctions. Multi-market projects in particular are accompanied by the preparation and implementation of sanctions. First, the environmental complexity of co-opetition does not encourage the kind of familiarity and proximity necessary to facilitate collaboration and limit the

use of sanctions. Second, the fear of opportunism and its consequences reinforces the apprehension of competitors, which results in the development of a deterrent mechanism in the form of sanctions. Third, the complex environment of co-opetition gives firms the arsenal necessary to guard against attack. The adoption of defensive postures is another particularly strong determinant of opportunism sanctions as part of a diversified co-opetition. Co-opetition is used by firms to protect the competitive positions they have acquired collectively, rather than to withdraw from them.

Previous results from this research concluded that managers need to pay particular attention to the dual nature of co-opetition when the project spans multiple markets and territories. Various factors may cause the opportunism of co-opetitors, such as remoteness (physical, organizational, cultural, etc.) or the desire to increase their competitiveness on a large scale. In such a context, a sanction system is recommended for three reasons : to deter opportunism in upstream collaboration, to regulate competitive and collaborative relationships during a project and, finally, to punish when the collective commitment is not respected by one of the co-opetitors.

CONCLUSION

This research reinforces the analysis of co-opetition as a plural phenomenon characterized by, among others, the omnipresence of opportunistic risk during its practice (Gnyawali & Park, 2009; Oxley & Sampson, 2004). Faced with this threat, the results confirm that a dissuasive sanction system is built and applied in order to punish individualistic action during collaboration. The study indicates that the preparation and application of sanctions in the face of opportunism is particularly present in a complex co-opetition environment. Internationalization and diversification, particularly co-opetition, involve the preparation of a defensive system. This system ensures the presence of a deterrent in the strategic markets and territories facilitated by collaborative work. This preventive policy was affirmed by the findings, which emphasize the high

frequency of individualistic behaviors among multiple remote opponents, which, in turn, result in the application of multi-market and multi-point sanctions on the part of the injured firms.

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TABLES

Table 1. Descriptive statistics

Dependent variable : Opportunism sanctions	Items							
	Attack mono-market	Attack multi-market	Attack mono-point	Attack multi-point	Defense mono-market	Defense multi-market	Defense mono-point	Defense multi-point
Attack mono-market	1							
Attack multi-market	0.274	1						
Attack mono-point	0.624	0.513	1					
Attack multi-point	0.384	0.474	0.497	1				
Defense mono-market	0.489	0.327	0.458	0.208	1			
Defense multi-market	0.234	0.503	0.373	0.382	0.573	1		
Defense mono-point	0.383	0.303	0.576	0.287	0.762	0.543	1	
Defense multi-point	0.158	0.331	0.348	0.575	0.368	0.643	0.492	1

Table 2. Principal component analysis and confirmatory factor analysis

Variables	Factors	FAS	α	χ^2	χ^2/ddl	RMSEA	NFI	RFI	CFI	IFI	TLI								
<i>Opportunism sanctions</i>	Opportunism sanctions	PCA	0.859																
<i>Relational modes</i>	Competition	CFA	0.816	60.966 (*)	1.604	0.076	0.826	0.698	0.919	0.927	0.860								
	Alliance		0.730																
	Defense		0.631																
	Co-opetition		0.604																
<i>Environments & networks</i>	Mono-point environment	PCA	0.850																
	Mono-market environment		0.671																
Multi-environment	Multi-point environment	CFA	0.850	4.822 (*)	1.205	0.044	0.972	0.894	0.995	0.995	0.980								
	Multi-market environment		0.671																
Collaborative network	Institutional network	PCA	0.860																
	Complex horizontal network		0.752																
	Vertical network		0.688																
<i>Asymmetries</i>	Asymmetry between partners	PCA	0.854																
	Knowledge asymmetry	PCA	0.637																
	Managerial resources asymmetry	CFA	0.618									4.059 (*)	1.014	0.012	0.883	0.563	0.997	0.998	0.989
	Technological resources asymmetry		0.489																
Decisions asymmetry	PCA	0.721																	
<i>Resources</i>	Commercial resources input	CFA	0.803	33.339 (*)	1.587	0.075	0.786	0.633	0.897	0.908	0.823								
	Technological resources input		0.593																
	Organizational resources input		0.641																
	Human resources input		0.534																
Creation of resources	Technological resources creation	CFA	0.730	14.091 (*)	1.281	0.052	0.934	0.873	0.984	0.985	0.969								
	Financial resources creation		0.768																
	Organizational resources creation		0.728																
Characteristics of resources	Unique resources	PCA	0.735																
<i>Activities</i>	Business production activities	CFA	0.771	18.106 (*)	1.392	0.061	0.939	0.868	0.981	0.982	0.959								
	Business distribution activities		0.856																
	Characteristics of information	PCA	0.927																
	Information management		0.602																

Learning	Information learning	Human and physical knowledge development		0.803	0.785
		Technological development		0.773	
		Organizational development	PCA	0.760	
	Knowledge learning	Commercial development		0.725	
		Development of partners' capabilities		0.602	
Trust	Trust	PCA	0.95		
Risks	Default risk	PCA	0.875		
	Opportunistic risk	PCA	0.937		
	Resource risk	PCA	0.902		

FAS = factor analyses selected; PCA = principal factor analysis; CFA = confirmatory factor analysis; * = $p < 0.05$; α = Cronbach's alpha; χ^2 = Chi-square; χ^2/dl = Chi-square/degrees of freedom

Variables	Factors	FAS	α	χ^2	χ^2/ddl	RMSEA	NFI	RFI	CFI	IFI	TLI	
Initiative & objectives Initiative	Imposed collaboration	CFA	0.778	0.668	0.822 (*)	0.822	0.001	0.994	0.962	1	1.001	1.009
	Suggested collaboration		0.804									
Objectives	Personal market defense	PCA	0.695	0.701								
	Strengthening market presence		0.595									
	Pursuing personal projects		0.647									
	Pursuing technological developments		0.556									
	Collective market defense		0.412									
Choice of partners	Choice by market	PCA	0.758	0.689								
	Choice by competences		0.555									
	Choice by collaborative experiences		0.513									
Control of co-opetition Forms	Contractualization of the collaborative relationship	CFA	0.936	0.930	400.738 (*)	1.821	0.088	0.785	0.731	0.886	0.890	0.857
	Contractualization of the project		0.921									
	Consortium		0.677									
	Collaborative control		0.810									
	Compliance		0.783									
Composition	External stakeholders	CFA	0.754	0.565	0.690 (*)	0.690	0.001	0.883	0.563	0.997	0.998	0.989
	Internal stakeholders		0.622									
Sanctions period	Multi-market sanction upon the decline of the project	CFA	0.848	0.578	30.911(*)	1.636	0.078	0.810	0.715	0.911	0.916	0.866
	Multi-market & multi-point sanction upon the maturity of the project		0.795									
	Multi-market & multi-point sanction upon the growth of the project		0.757									
	Multi-market & multi-point sanction upon the launch of the project		0.787									
	Mono-market & mono-point sanction upon the launch of the project		0.829									

FAS = factor analyses selected; PCA = principal factor analysis; CFA = confirmatory factor analysis; * = $p < 0.05$; α = Cronbach's alpha; χ^2 = Chi-square; χ^2/ddl = Chi-square/degrees of freedom

Table 3. Stepwise regression

Dependent variable : Opportunism sanctions	Multi-point and multi-market competitors			Mono-point and mono-market partners			Mono-point and mono-market co-opetitors			Multi-market co-opetitors			Multi-point co-opetitors		
	B(sig.t)	Err. std.	Beta	B(sig.t)	Err. std.	Beta	B(sig.t)	Err. std.	Beta	B(sig.t)	Err. std.	Beta	B(sig.t)	Err. std.	Beta
Constants	-1.439(*)	0.607		10.07(*)	4.591		-0.011(ns)	0.031		0.181(ns)	0.142		1.073(***)	0.243	
Strategic information learning							0.148(**)	0.031	0.136						
Human and physical knowledge learning							0.302(***)	0.022	0.314						
Knowledge related to learning capacity of partners										-0.429(**)	0.129	-0.44			
Asymmetry of technological resources													-1.753(***)	0.418	-0.6
Asymmetry of managerial decisions							-0.117(*)	0.036	-0.1						
Project composition: the presence of external actors (third parties)				-0.206(*)	0.071	-0.285	-0.212(***)	0.031	-0.22						
Multi-market environment				9.161(*)	4.022	0.262				0.816(***)	0.18	0.602			
Compliance with commitments during the project				-0.533(***)	0.1	-0.613									
Objective: single defense market							0.483(***)	0.031	0.523						
Vertical collaborative network				0.657(***)	0.086	0.974									
Contribution of technological resources							0.181(**)	0.042	0.15	0.348(*)	0.124	0.371			
Resources firm estimated as unique	0.451(*)	0.173	0.41												
Defensive relationship							0.891(***)	0.036	0.909						
Creation of technological resources							0.261(***)	0.033	0.2						
Multi-market and multi-point sanction at the maturity of the project										0.4(*)	0.155	0.345	0.318(**)	0.102	0.439
Membership of the firm of a group	0.947(*)	0.346	0.43												
R/R²/R² aj.	0.678/0.459/0.414			0.932/0.869/0.822			0.997/0.995/0.992			0.892/0.797/0.729			0.775/0.601/0.562		
Fisher's tests	10.214(***)			18.636(***)			279.234(***)			11.785(***)			15.118(***)		

*** = p < 0.001; ** = p < 0.01; * = p < 0.05; ns = not significant