International Business Management
MEDWELL PUBLICATIONS

Impact of Coopetition Strategies on Company's Performance: The Moderating Role of the Competitive Intensity

Asma Zgarni and Lamia Gharbi
Department of Management, El Manar University, Tunis, Tunisia

Key words: Horizontal coopetition, vertical coopetition, company performance, competitive intensity

Corresponding Author:
Asma Zgarni
Department of Management, El Manar University, Tunis, Tunisia

Page No.: 313-323
Volume: 15, Issue 8, 2021
ISSN: 1993-5250
International Business Management

Abstract: This study aims to study the moderating role of competitive intensity on the relationship between coopetition strategies and company performance. By following a quantitative approach of the hypothetico-deductive type and by using the method of structural equations, the study confirms the moderating effect of competitive intensity on the relationship between vertical and horizontal coopetition strategies and the company's performance on a sample of Tunisian manufacturing industry.

INTRODUCTION

The review of the literature on the relationship between coopetition and performance shows several divergences[1-11]. Indeed, some research confirms the positive relationship between coopetition and performance[4, 12]. Others prove to the contrary a negative or null relationship. Nevertheless, this research failed to distinguish between the impact of different types of coopetition strategies on performance.

In addition, some other research has shown that the effect of coopetition on performance is greater in a context of high environmental uncertainty[4, 5, 13]. However, the review of the literature also suggests that when competitive intensity is strong, the impact of coopetition on performance seems weakened[14, 15, 4, 11, 16]. The objective of this paper is to fill the gaps observed by distinguishing between horizontal coopetition and vertical coopetition[17-21] while studying the moderating role of the competitive intensity on the relationship between these different types of coopetition strategies and performance.

The question that arises will then be the following: What is the moderating effect of the competitive intensity on the relationship between coopetition strategies and performance?

In order to answer this question, we deal in a first section with the theoretical foundations. The second section will be devoted to the issuance of the hypotheses and the conceptual model. The third section will present the research methodology. The fourth will show the results of the survey conducted among a sample of Tunisian industrial companies. The fifth will be reserved for discussions of the results. Finally, in the sixth section, we deduce the managerial implications of this research and the limits.

Theoretical foundations

Theoretical approaches

The resource-based approach (RBV): The work of Penrose[22] and the Harvard School marks the first steps in the resource-based approach. Then comes the work of Wernerfelt[23] who traces the resources to the strengths and weaknesses of the company developed by the SWOT

Model. However, the relationship between resources and defensible and sustainable competitive advantage was first proposed with Barney[24]. According to this author, resources correspond to "all assets, capacities, organizational processes, attributes of the firm, information, knowledge, etc., controlled by a firm that allows it to design and implement strategies that improve its efficiency and effectiveness"[24]. This definition, which seems to us to be the most complete, integrates the capabilities of the company in the field of resources.

Thus, according to this approach, the company is defined as a collection of unique resources able to influence its evolution and its strategic development choices as well as its competitive advantage and its rents[24, 25].

Unlike the neoclassical approach which claims that resources are mobile and homogeneous, RBV assumes that resources are not perfectly mobile among themselves, which favors the heterogeneity of firms[24]. Likewise, this approach states that some firms have, at a given time, better endowments of resources than others[26]. Thus, two basic assumptions underlie this approach. The first hypothesis postulates that the company's unique resources determine strategic choices. The second hypothesis states that the specific resources held by the company affect its performance and competitive advantage. From this perspective, Fernandez and Roy[27] ensure that the RBV theory encourages the company to pursue an individual strategy which thanks to its isolation, manages to create unique resources in the long term.

The relational approach: This relatively recent approach has been defended by Peteraf[28] and Dyer and Singh[29] who stipulate that the performance of the firm is largely dependent on the network of relationships established with the various actors of the environment (customers, suppliers, competitors, etc.). Such a relational network is likely to promote the creation and coordination of relational resources that go beyond the traditional boundaries of the company (ability to share knowledge and know-how, ability to use complementary skills, etc.). According to the postulates of this theory and in opposition to the theory of resources (RBV) urging companies to protect their strategic resources by taking care to avoid their imitation and their replication, it is in the sharing and joint valuation of certain resources that lies the secret of performance. The unit of analysis is the dyad or networks of firms. The main sources of competitive advantage lie in inter-firm knowledge, collective problem solving and effective governance.

According to this approach, there is another type of resource that can only be created and valued through the interaction and collaboration between a given supplier and customer. Thus, it is through shared resources that customer-supplier cooperation will allow these two partners to achieve "a relational rent".

Unlike RBV, this theory has the merit of distinguishing between the ability to cooperate with clients (based on the specific resources of the company) and the resources shared with a client (generating a specific rent for the collaboration). Thus, if a supplier sees himself as attractive because of the specific resources (strong capacity for technological innovation) at his disposal, his ability to share, at the level of the partnership relationship, his know-how with the client and to propose innovations that do not exist 'have not been claimed by the client, shows that he has valuable resources, in particular in the context of cooperation with a specific client. Consequently, he can generate an annuity which turns out to be specific to the partnership and not to himself.

According to this approach, the performance of the company is dependent on specific resources held as well as resources developed jointly with partners. This ability to generate new resources strongly depends on the characteristics of the relationship established between the supplier and the customer and this insofar as certain relationships are characterized by a strong interaction between the partners and an increased integration of the structures of the supplier and the customer and which are more conducive to the creation and coordination of joint resources than other collaborations. These resources, jointly developed and valued, make it possible to create a relational rent thanks to cooperative relationships.

However, this approach is criticized for its exclusive focus on the cooperative dimension of interactions as well as for its focus on relations with other firms (market relations).

The competitive forces approach: It was in Harvard Business School (1965) that the first work on business strategy emerged. This work ended up developing the LCAG Model proposing that a company should conduct a double external (environmental opportunities and threats) and internal (company strengths and weaknesses) analysis in order to develop its own strategy. Despite their considerable contribution, this model neglects the competition. The latter only developed in depth, explicitly and broadly with the work of Porter[30]. Starting from industrial economics (SCP), the latter emphasizes the weight of competitive forces but with a richer analysis. Indeed, according to Porter[30] "the structure of a sector exerts a strong influence on the determination of the competitive rules of the game and on the strategies to which the firm can resort". Therefore, the relative competitive intensity of an industry depends on the state of the five structural forces (existing competitors, potential entrants, substitutes, customers, suppliers).

This approach offers a complete and enriched analysis of the industry and its evolution, of the competitors and of the positioning of the company in

relation to its competitors in order to develop a competitive strategy aimed at supporting the company's position on the market[31].

Nevertheless, despite its considerable contributions, this approach is criticized for its structuralism vision of competition, since, it focuses exclusively on the characteristics of the sector in the development of competitive strategic choices of companies without giving enough importance to the real interaction competitors. In addition, this approach focuses on external factors by neglecting internal factors in the development of strategic choices.

Coopetition strategies: Cooperation and competition have long been viewed as the two opposing extremes of a broad continuum. It was not until the end of the 1990s, with the strong intensification of competition, the shortening of product life cycles and the increase in research and development costs, that the simultaneous combination of cooperative strategies and competition is starting to emerge[32]. According to Sanou and Roy[33], the reunion of cooperation and competition constitutes a break with the classical conception which defends the idea that the increase in competition necessarily implies a decrease in cooperation and vice versa. Indeed, these two strategies go back to two opposing paradigms (the theory of industrial organizations and socio-economic theory) or even incompatible[34].

Coopetition, thus, constitutes a unique new field of research[35] having a specific theoretical basis that does not correspond either to an extension of the theories of cooperation or of the theories of competition. As such, Nalebuff and Brandenburger[36] refer to game theory for the first time founding coopetition from the "value network". Based on game theory, resource theory and social network theory, Lado *et al*.[37] in turn form the basis of coopetitive strategies[38].

Several definitions have thus, emerged. For Bengtson and Kock[18] coopetition corresponds to a "dyadic and paradoxical relationship that emerges when two companies cooperate in some activities and at the same time compete with each other in other activities". According to Roy and Yami[38], coopetition corresponds to "a system of actors who interact on the basis of a partial congruence of interests and objectives

From these definitions, it turns out that coopetition is a two-dimensional phenomenon carrying a high level of both competitive aggressiveness and cooperativity which justifies its paradoxical nature. Competitive aggressiveness is thus, dependent on the number of competitive actions and reactions, their complexity and their speed[39, 33, 40]. As for the cooperative dimension, it corresponds to the firm's propensity to initiate cooperative actions and get involved in cooperative actions within its sector of activity.

The literature review, which is still timid, suggests different factors that encourage coopetite. By referring to network theory and resource-based theory, Bengtson and Kock[41] explain the use of coopetition by the need for surplus resources and the relative position on the sector. From a close perspective and using RBV, Fernandez and Roy[27] demonstrate that the insufficiency and heterogeneity of the internal resources necessary for production which have become more complex than ever, pushes competing companies to pool their possibly complementary and interdependent resources.

In the same vein, Gnyawali and Park[42] state that the lack of financial resources (research and development costs), technological convergence and other factors linked to the industry, in particular the life cycle of products, encourage companies to adopt coopetition. Sanou also explains the coopetition strategy by the size of the firm and other sectoral variables, in particular industrial concentration, the sectoral maturity of the firm's domestic market and its international presence. More recently, Chiambaretto and Fernandez[43] while referring to the resource dependency theory, link the use of coopetition to environmental uncertainty which increases the need for similar resources.

An overview of the literature on coopetition shows several attempts to identify a typology of coopetition. Dagnino and Padula while basing themselves on the number of cooperated enterprises and the number of cooperative activities, develop four forms of coopetition, namely complex dyadic coopetition, simple dyadic coopetition, simple network coopetition and coopetition in a complex network. Gnywali *et al*.[44], for their part, distinguish two main forms of coopetition, namely vertical coopetition and horizontal coopetition. For the first, it is a question of cooperation between companies in a client-supplier relationship and which remain in competition upstream or downstream of this cooperation[45]. The second involves cooperation between two direct competitors in one activity in the value chain while remaining in competition with other activities[46, 18, 34].

As for coopetition's contribution to performance, the researchers assert that coopetition has a double advantage since it simultaneously encompasses the advantages of cooperation as well as those of competition. Indeed, this strategy allows the different coopetitors to access the rare and complementary resources of competitors which constitute the key skills when it comes to horizontal coopetition which necessarily brings superior performance to coopetitors[45, 17]. In addition, since coopetitors remain in competition, coopetition stimulates the search for new productive combinations that generate rent.

However, one of the coopetitors can be the loser since his competing partner can access his core competences

and imitate him. Indeed, this strategy can hide the real motive which differs from the declared one, in particular the imitation of the resources and the key competences of the coopetitor[34].

Model development and hypothesis

Impact of coopetition on company performance: An overview of the literature allowed us to retain that coopetition allows managers to achieve performance thanks to shared resources and capacities[1, 4, 6]. This achieved performance was not possible if the company operates individually[18, 4, 47, 48, 13, 11].

In fact, small businesses integrate into informal networks with their competitors which result in friendships with them and which end in access to new resources and capabilities[49]. However, large firms resort to formal contracts when deciding to coopetitate with their competitors[50, 51].

Indeed, some companies, because of their small size, may not have the necessary resources to define their strategic choices and manage their companies. They therefore need to access the assets of their competitors to maintain their competitiveness[52, 53, 10, 54, 13]. In this sense, Crick[11] explains how small companies which lack notoriety and which seek to initiate individually promotional actions on their products or services, may not succeed in attracting enough customers and thus achieve low turnover figures business. However, according to the same author, when these companies initiate promotional actions with their competitors (coopetition) at trade shows, customers will be more impressed and the turnover achieved will be higher.

In addition, even large companies use the coopetition strategy to achieve certain objectives that are difficult for them to achieve individually, in particular when they are moving towards international markets or they seek to promote their brands internationally[2, 3, 55, 56, 8, 57].

Thus, referring to the relational approach, research on the contribution of coopetition to performance agrees on the fact that this strategy is likely to improve performance for all coopetite companies by making them benefit from collaborative advantages[58, 57, 9].

Likewise, by referring to the resource-based approach, companies, whatever their size, opt for the coopetition strategy in order to obtain sustainable competitive advantages[24, 59] and this by combining competitor's assets with their assets[51].

In fact, empirical research examining the relationship between coopetition and performance is divergent. Some prove its positive effect[60, 61], others on the contrary give evidence that it is a negative effect[62, 63] while others manage to demonstrate the absence of a relationship between coopetition and performance[64].

According to Pellegrin-Boucher *et al*.[21] and Hamouti and Roy[17], vertical coopetition carries less risk than horizontal one, due to the fact that shared knowledge and resources are complementary. Thus, some technologies can be chosen to be shared while others remain discreet. This sharing must be formalized in order to be subsequently controlled. However, at the level of horizontal coopetition, the shared resources and knowledge are similar. As a result, the core competencies are shared by each of the coopetite companies and the asymmetry of the gains is very likely and quite detrimental to the losing partner. This suggests that horizontal coopetition carries more risks and lacks stability over time[21]. As such, due to the fact that, unlike vertical coopetition, the core of resources and knowledge are shared at the level of horizontal coopetition, the learning that results at the level of horizontal coopetition is greater than that of vertical coopetition and the result is more fruitful, allowing coopetitors to carry out radical innovations[17]. Thus, in their empirical study, Hamoutiand Roy[17] found that horizontal coopetition has a significant and positive effect on the "turnover" performance greater than that of vertical coopetition. From these developments, we propose to test the following hypothesis:

- H_1: Coopetition has a positive effect on performance
- $H_{1.1}$: Vertical coopetition has a positive effect on performance
- $H_{1.2}$: Horizontal coopetition has a positive effect on performance

Moderating role of the competitive intensity: The tenets of resource theory[23, 24] neglected the role of the competitive environment in defining strategic choices. It is only recently that they have introduced it as a determining factor in the performance of companies[65-69]. In this perspective, Ritala[4] has shown that the uncertainty of the environment is likely to increase the performance of the market and of innovation when companies choose to coopetitate with their competitors and this because of cost sharing. However, this author also asserted that coopetition does not promote innovation and performance when competition is relatively strong. Along the same lines, Ang[14] provides evidence for the role of competitive intensity and technological turmoil in weakening the link between coopetition and firm performance. In a similar sense, Chiambaretto and Fernandez[43] show that environmental uncertainty pushes companies to opt for horizontal coopetition. Such a choice can be justified by collaborative advantages according to the relational approach or sustainable competitive advantages according to the resource-based theory[58, 29, 70, 71, 23, 72].

In fact, when the environment is highly competitive, companies need to innovate in order to meet customer expectations[23, 74, 69]. However, it is very likely that there is mistrust between competitors[5, 75] which disadvantages cooperation between them, for lack of losing distinctive resources and capacities by collaborating[47, 76, 77, 16].

However, when trust, friendship and informal social relations prevail between competitors, coopetition will necessarily be more effective[78, 79]. Thus, because competitive intensity makes it more difficult to achieve sustainable competitive advantages or collaborative advantages[14, 4, 80, 74], managers have more likely to opt for coopetition by taking advantage of the new resources of their relatively large number of competitors[81, 82, 5, 49, 13]. In addition, the geographical proximity due to good relations between competitors could increase the efficiency of coopetition[41, 83]. Thus, the high number of competitors favors a more efficient coopetition than that carried out in less competitive markets[11]. From these developments, we propose to test the following hypothesis:

- H_2: The competitive intensity moderates the relationship between coopetition and business performance
- $H_{2.1}$: The competitive intensity negatively moderates the relationship between vertical coopetition and company performance
- $H_{2.2}$: The competitive intensity positively moderates the relationship between horizontal coopetition and company performance

MATERIALS AND METHODS

To test our conceptual model (Fig. 1) in this research, we are part of the positivist current. We have adopted a quantitative approach of the hypothetico-deductive type. Thus, we have developed a questionnaire-based survey of a population of companies belonging to the Tunisian manufacturing industry.

Measurement of variables: Regarding the measurement of the performance construct, we use the measurement scales proposed by Vorhies and Morgan[70]. Regarding coopetition strategies, we took into account the two-dimensional nature of the coopetition variable while trying to provide a direct measure. To do this, we tried to measure coopetition through a competitive dimension and a cooperation dimension. Thus, we measured the "propensity for cooperation" dimension through the scale proposed by Luo *et al*.[60]. As for the second dimension relating to competitive aggressiveness, we used the Roy[84] scale. This scale has also been adapted to the needs of our study by using it once for vertical coopetition and a second time for horizontal coopetition. As for the variable competitive intensity, we have adopted the measurement scale of Mia and Clarke.

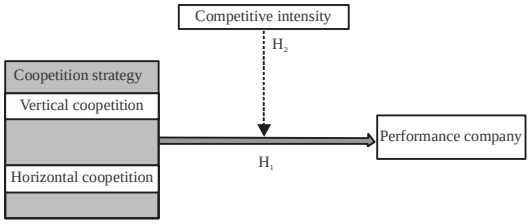

Fig. 1: Conceptual model

For all the items of the chosen measurement scales, the respondents are asked to evaluate, on a seven-point Likert scale ranging from 1 "very low" to 7 "very high" their attitudes towards the various variables of the scale study.

Sampling, administration and data collection: The selected sample is made up of companies operating in the Tunisian manufacturing industry sector (textile and clothing, electrical, electronics and household appliances, chemicals and Agri-food). This sample is made up of companies of different sizes, regardless of activity regime. The sampling method chosen is that of reasoned choice. We verified the content validity of the questionnaire (consensus validity and facial validity) by subjecting it to peer and expert review and then tested it through a pre-test with 12 companies. Then, we administered it face-to-face in its final version with the directors (CEOs) of the companies surveyed. We distributed 400 questionnaires of which only 236 were returned corresponding to a return rate of 59%, of which 203 were really usable and fully completed, see 85.5%.

RESULTS

Before testing the hypothesis, we checked a number of conditions. First, the reliability and dimensionality of the different measurement scales used and this through a first purification using ACP and the calculation of Cronbach's alpha, then a second purification using AFC. To assess the adequacy of the measures of the latent concept of performance, coopetition strategies and competitive intensity, a model for measuring these concepts was conceptualized and tested for its fit to the model which showed a good fit.

Subsequently, recourse to the method of structural equations aimed at evaluating the relationship between coopetition strategies and performance without moderation and with moderation, revealing a good fit of

the global model in both cases, allowed us to empirically validate the research hypothesis and obtain the following results:

The relationship between the vertical coopetition strategy and performance is seen to be positive and significant which makes it possible to confirm $H_{1.1}$. The relationship between the horizontal coopetition strategy and performance is seen to be positive and significant, which makes it possible to confirm $H_{1.2}$, H_1 is therefore confirmed. Likewise, competitive intensity positively moderates the relationship between the vertical coopetition strategy and performance, which makes it possible to reject $H_{2.1}$. Finally, competitive intensity negatively moderates the relationship between the horizontal coopetition strategy and performance, Hence the rejection of $H_{2.2}$.

DISCUSSION

Effect of the coopetition strategy on performance: The test of the global model makes it possible to confirm that coopetition strategies favor performance. Thus, vertical coopetition has a significant and positive effect on performance. Likewise, horizontal coopetition has a positive and significant effect on performance. However, horizontal coopetition seems to have a stronger effect on performance.

This result is in accordance with the postulates of the resource-based approach as long as the sharing of resources due to horizontal coopetition (similar resources corresponding to the core competencies) which is greater than that of vertical coopetition (limited additional resources), promotes performance and competitive advantage. We also find justifications in the relational approach insofar as coopetition in its two forms has allowed collaborative advantages. Our result also converges with that of Neyens *et al*.[85] who found that continuous and discontinuous coopetitions favor the performance of both radical and incremental innovation.

This result also resembles that of Ritala[4] which showed through an intersectoral survey of 209 Finnish companies that coopetition promotes performance. We also join Hamouti and Roy[17] who found in an empirical study carried out in the publishing video game industry using a quantitative analysis (linear regression) based on a sample of 190 video games released between 2006 and 2011 that horizontal coopetition has a greater effect than vertical coopetition on performance. Our result is also close to the work of Gnyawali *et al*.[39], Gnyawali and Park[42], Belderbos *et al*.[86] and Tomlinson[87]. However, our result contradicts that of Santamaria and Surroca[88] who conducted an empirical study on 1300 Spanish manufacturing companies and found a zero relationship between coopetition and innovation results.

Moderating effect of competitive intensity on the relationship between coopetition and performance: The results of statistical tests of competitive intensity on the relationship between coopetition and performance are significant, thus confirming that there really is a moderation effect exerted by the competitive intensity variable in the relationship between coopetition and performance. Thus, we find that competitive intensity negatively moderates the relationship between horizontal coopetition and performance while it positively moderates the relationship between vertical coopetition and performance.

This result appears to be in full accordance with the competitive forces approach which states that competitive intensity determines strategic choices and performance. Regarding vertical coopetition, the result we found seems to contradict the result of Ritala[4] who empirically proved that the coopetition strategy is more efficient in the context of low competitive intensity. We also oppose Ang[44] who shows that competitive intensity and technological turmoil weaken the relationship between coopetition and firm performance. Nevertheless, our result matches that of Ang[44] and Ritala[4] with regard to horizontal coopetition.

A first explanation of this result is that coopetition gives better results when the market is made up of a few major players[4] who can potentially promote the dynamics of the industry via. the combination of forces behind certain technologies, products or services[42, 89, 90]. A second explanation is that horizontal coopetition, given that it carries more risk than vertical coopetition because it pools the strategic resources of the company, becomes more difficult to achieve efficiently and effectively when significant number of competitors exists[4]. Thus, by focusing on a limited number of competitors, horizontal coopetition can probably increase performance.

Managerial implications: Several managerial implications can be drawn from this research. First, this research combines the competitive forces approach with the resource-based approach in understanding coopetition strategies. These two combined approaches shed more light on the consequences of coopetition strategies in performance term.

Likewise, this research can be useful for managers seeking to perform their strategic choice and this by evaluating whether there are competitors with the same motivations, the latter must be well selected to take advantage of coopetition.

In addition, this research can guide manager's choices between vertical coopetition involving additional and less risky resources and horizontal coopetition involving similar strategic resources but more risky for companies. Indeed, it is the adventurous

managers who will be able to achieve more performance since they jointly engage the best of themselves. However, one should be careful with certain successful companies which may offer to cooperate with their competitor for the sole purpose of gaining access to their key skills. The present results are finally to be useful for the political decision-makers who have for concern the development and the success of the Tunisian manufacturing industries, the good progress of the competition and the well-being of the consumer. Indeed, excessive recourse to (aggressive) coopetition can hide anti-competitive practices with the aim of eliminating a competitor and monopolizing the market which can harm the proper conduct of competition.

CONCLUSION

This research allows us to conclude that the horizontal coopetition strategy is more efficient than the vertical one, as long as it engages the key skills of companies, thus, confronting coopetitors with a higher risk than vertical coopetition. However, this research also teaches us that this relationship which links coopetition to performance depends on the context in which the company operates. Indeed, when the competitive intensity is high, competing companies choose to cooperate vertically since they pool well-defined and controlled complementary resources. In fact, in such a context, the tension possibly increases which does not encourage competitors to cooperate horizontally at the risk of losing their key skills.

However, like all research, ours is not without its limitations. The first limitation touches on the empirical field of our investigation which relates only to the manufacturing industry. Further empirical research deserves to be undertaken in other sectors with a view to eventually being able to generalize the results.

A second limitation relates to the nature of the performance studied. Indeed, we have limited ourselves to the study of company performance while neglecting market performance and innovation.

The third limitation is due to the contingency factors that can guide the direction of the relationship between coopetition strategies and company performance. In this study, we have limited ourselves to competitive intensity, while other determining factors deserve to be studied such as market uncertainty, network externalities, trust between competitors, organizational capacities and resources. , etc.[4, 1, 90, 11].

Another limitation concerns the research methodology implemented. Indeed, the paradoxical nature of the coopetition strategy calls for a case study to better understand this phenomenon and take into account its complexity (forms, explanatory factors)[16, 43]. Finally, coopetition, where cooperation and competition meet at the same time, involves high tensions and calls for specific management of the emerging paradoxes[43]. The management of coopetition and the tensions that result from it constitutes, in this case, a young and laudable avenue of research making it possible to study the stakes of the arduous implementation of this strategy.

APPENDIX

Appendix 1; Variables measurement scales:

- Intensity of competition
- The number of main competitors operating in the market
- The frequency of technology changes in the industry
- The frequency of the introduction of new products
- The extent of price manipulation
- Access to marketing channels
- Changes in regulation or government policy such as tariff reductions

Coopetition:

- Cooperative dimension
- Research and development with competing companies
- The development of new products with competing companies
- Improved technology with competing companies.
- Market segmentation with competing companies
- Cross-selling with competing companies
- Competitive aggressiveness
- The frequency of aggressive maneuvers
- The number of attacked competitors
- The intensity of these aggressive maneuvers
- The threatening nature of these aggressive maneuvers

Performance:

- Customer satisfaction
- Customer satisfaction
- Delivering value to your customers
- Delivering what your customers want
- Retaining valued customers
- Market effectiveness
- Market share growth relative to competitors
- Growth in sales revenue
- Acquiring new customers
- Increasing sales to existing customers
- Current (anticipated) profitability
- Business unit profitability
- Return on investment (ROI)
- Return on sales (ROS)
- Reaching financial goals

Appendix 2; Regression results in Table 1-3

Table 1: Result of the regression of the "coopetition" variable on "performance"

Relationship between the variables validation of the hypothesis	Estimated beta						Validation of the hypothesis
	NS	S	SE	CR	p-values	Signification	
P<---CV	0.405	0.296	0.094	4.287	0.000	Significant	H_{11} validated
P<---CH	0.632	0.454	0.093	6.775	0.000	Significant	H_{12} validated

P = Performance; CV = Vertical Coopetition; CH = Horizontal coopetition

Table 2: The results of the test of the moderation of the "competitive intensity" variable on the relationship between vertical coopetition and performance

	Estimated Beta					
Variables	NS	S	SE	CR	p-values	Results
P<--CV	0.408	0.408	0.165	2.480	0.013	Significant
P<--IC	0.521	0.426	0.047	11.027	0.000	Significant
P<--IC_X_CV	0.449	1.141	0.065	6.931	0.000	Significant

P = Performance; CV =Vertical coopetition; IC_X_CV = factorial multiplication of the competitive intensity variable by the vertical coopetition variable; NS = Not standardized; S = Standardized

Table 3: The results of the moderation test of the "competitive intensity" variable on the relationship between vertical coopetition and performance

	Estimated Beta					
Variables	NS	S	SE	CR	p-values	Results
P<--CH	0.630	0.630	0.165	2.158	0.000	Significant
P<--IC	0.185	0.151	0.084	2.210	0.000	Significant
P<--IC_X_CH	0.192	0.488	0.115	1.671	0.000	Significant

P = Performance; CH = horizontal coopetition; IC_X_CH = factorial multiplication of the competitive intensity variable by the horizontal coopetition variable; NS = Not standardized; S = Standardized

REFERENCES

01. Combs, J.G. and D.J. Ketchen Jr., 1999. Explaining interfirm cooperation and performance: toward a reconciliation of predictions from the resource-based view and organizational economics. Strategic Manage. J., 20: 867-888.
02. Xie, F.T. and W.J. Johnston, 2004. Strategic alliances: Incorporating the impact of E-business technological innovations. J. Bus. Ind. Marketing, 19: 208-222.
03. Lavie, D., 2006. The competitive advantage of interconnected firms: An extension of the resource-based view. Acad. Manage. Rev., 31: 638-658.
04. Ritala, P., 2012. Coopetition strategy-when is it successful? Empirical evidence on innovation and market performance. Br. J. Manage., 23: 307-324.
05. Felzensztein, C., E. Gimmon and C. Aqueveque, 2012. Clusters or un-clustered industries? Where inter-firm marketing cooperation matters. J. Bus. Ind. Marketing, 27: 392-402.
06. Yami, S. and A. Nemeh, 2014. Organizing coopetition for innovation: The case of wireless telecommunication sector in Europe. Ind. Marketing Manage., 43: 250-260.
07. Velu, C., 2016. Evolutionary or revolutionary business model innovation through coopetition? The role of dominance in network markets. Ind. Marketing Manage., 53: 124-135.
08. Ali, T. and S. Khalid, 2017. Trust-performance relationship in international joint ventures: The moderating roles of structural mechanisms. J. Bus. Ind. Marketing, 32: 962-973.
09. Chou, H.H. and J. Zolkiewski, 2018. Coopetition and value creation and appropriation: The role of interdependencies, tensions and harmony. Ind. Marketing Manage., 70: 25-33.
10. Crick, J.M., 2015. Bridging the gap between threshold and dynamic capabilities: A qualitative study of the collaboration strategies of New Zealand wineries. MBA. Thesis, Massey University, Wellington, New Zealand.
11. Crick, J.M., 2018. The facets, antecedents and consequences of coopetition: An entrepreneurial marketing perspective. Qual. Market Res. Int. J., 21: 253-272.
12. Roy, F.L., M. Robert and F. Lasch, 2013. [Cooperating with friends or enemies what strategy for product innovation? (In French)]. French Manage. Rev., 3: 81-100.
13. Granata, J., F. Lasch, F. Le Roy and L.P. Dana, 2018. How do micro-firms manage coopetition? A study of the wine sector in France. Int. Small Bus. J., 36: 331-355.
14. Ang, S.H., 2008. Competitive intensity and collaboration: Impact on firm growth across technological environments. Strategic Manage. J., 29: 1057-1075.
15. Tidstrom, A., 2009. Causes of conflict in intercompetitor cooperation. J. Bus. Ind. Marketing, 24: 506-518.

16. Hoffmann, W., D. Lavie, J.J. Reuer and A. Shipilov, 2018. The interplay of competition and cooperation. Strategic Manage. J., 39: 3033-3052.
17. Hamouti, R. and F.L. Roy, 2015. [Types of coopetition strategy and market performance of product innovation: The case of the video game industry]. AIMS International France, Paris, France. (In French)
18. Bengtsson, M. and S. Kock, 2000. Coopetition in business networks-to cooperate and compete simultaneously. Ind. Mark. Manage., 29: 411-427.
19. Depeyre, C. and H. Dumez, 2007. [The role of the client in coopetition strategies]. French Manage. Rev., 7: 99-110.
20. Roy, F.L., S. Yami and G. Dagnino, 2010. [Coopetition: A Strategy for the Twenty-First Century]. In: Coopetition Strategies: Compete and Cooperate Simultaneously, Yami, S. and L.F. Roy (Eds.)., De Boeck, Brussels, Belgium, pp: 17-28.
21. Pellegrin-Boucher, E., F. Le Roy and C. Gurau, 2013. Coopetitive strategies in the ICT sector: Typology and stability. Technol. Anal. Strategic Manage., 25: 71-89.
22. Penrose E.T., 1959. The Theory of the Growth of the Firm. 1st Edn., Oxford University Press, New York.
23. Wernerfelt, B., 2014. On the role of the RBV in marketing. J. Acade. Marketing Sci., 42: 22-23.
24. Barney, J.B., 1991. Firms resources and sustained competitive advantage. J. Manage., 17: 99-120.
25. Dierickx, I. and K. Cool, 1989b. Competitive strategy, resource accumulation and firm performance. Mimeo, New York, USA.
26. Foss, N.J., 1997. Resources and Strategy: A Brief Overview of Themes. In: Resources, Firms and Strategies: A Reader in the Resource-Based Perspective, Foss, N.J. (Eds.)., Oxford University Press, Oxford, England, UK., pp: 1-18.
27. Fernandez, A.S. and L.F. Roy, 2010. [Why cooperate with a competitor? An RBV approach (In French)]. French Manage. Rev., 5: 155-169.
28. Peteraf, M., 1994. Commentary: The two schools of thought in resource-based theory; Definitions and implications for research. (W.S. Schulze). Adv. Strategic Manage., 10: 153-158.
29. Dyer, J.H. and H. Singh, 1998. The relational view: Cooperative strategy and sources of interorganizational competitive advantage. Acad. Manage. Rev., 23: 660-679.
30. Porter, M.E., 1980. Competitive Advantage: Creating and Sustaining Superior Performance. Free Press, New York.
31. Galbreath, J. and P. Galvin, 2008. Firm factors, industry structure and performance variation: New empirical evidence to a classic debate. J. Bus. Res., 61: 109-117.
32. Luo, Y., 2004. A coopetition perspective of MNC-host government relations. J. Intl. Manage., 10: 431-451.
33. Sanou, F.H. and L.F. Roy, 2012. [Aggressiveness, cooperation or coopetition: What a successful strategy in network industries?]. Universite Montpellier, Montpellier, France.
34. Fernandez, A.S., P. Marques, F.L. Roy and F. Robert, 2010. [Mesurer la coopetition: Mission impossible? (In French)]. Manage. Sci. J., 73: 19-38.
35. Dagnino, G.B., F.L. Roy and S. Yami, 2007. [The dynamics of coopetition strategies (In French)]. French Manage. Rev., 7: 87-98.
36. Nalebuff, B. and A. Brandenburger, 1996. [Co-Opetition, a Revolution in the Way of Playing Competition and Cooperation]. Village Mondial Publisher, Paris, France, (In French).
37. Lado, A.A., N.G. Boyd and S.C. Hanlon, 1997. Competition, coperation and the search for economic rents: A syncretic model. Acad. Manage. Rev., 22: 110-141.
38. Roy, F.L. and S. Yami, 2007. [Coopetition strategies (In French)]. French Manage. Rev., 33: 83-86.
39. Gnyawali, D.R., J. He and R. Madhavan, 2006. Impact of co-opetition on firm competitive behavior: An empirical examination. J. Manage., 32: 507-530.
40. Ferrier, W.J., 2001. Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness. Acad. Manage. J., 44: 858-877.
41. Bengtsson, M. and S. Kock, 1999. Cooperation and competition in relationships between competitors in business networks. J. Bus. Ind. Marketing, 14: 178-194.
42. Gnyawali, D.R. and B.J. Park, 2009. Co-opetition and technological innovation in small and medium-sized enterprises: A multilevel conceptual model. J. Small Bus. Manage., 47: 308-330.
43. Chiambaretto, P. and A.S. Fernandez, 2016. The evolution of coopetitive and collaborative alliances in an alliance portfolio: The Air France case. Ind. Marketing Manage., 57: 75-85.
44. Gnyawali, D.R., J. He and R. Madhavan, 2008. Co-Opetition Promises and Challenges. In: 21st Century Management: A Reference Handbook, Wankel, C. (Ed.)., Sage Publications, London, England, UK., pp: 386-398.
45. Pellegrin-Boucher, E. and F. Le Roy, 2008. [Dynamics of coopetition strategies in the ICT sector: The case of ERP (In French)]. Finance Control Strategy, 12: 97-130.
46. Hamouti, R., F. Robert and F.L. Roy, 2014. [Individual strategy, vertical cooperation strategy or coopetition strategy. What is the best strategy for product innovation? (In French)]. Innovations, 1: 135-161.

47. Ritala, P. and P.H. Laukkanen, 2013. Incremental and radical innovation in coopetition-The role of absorptive capacity and appropriability. J. Prod. Innovation Manage., 30: 154-169.
48. Dahl, J., 2014. Conceptualizing coopetition as a process: An outline of change in cooperative and competitive interactions. Industrial Marketing Manage., 43: 272-279.
49. Felzensztein, C., E. Gimmon and K.R. Deans, 2018. Coopetition in regional clusters: Keep calm and expect unexpected changes. Ind. Marketing Manage., 69: 116-124.
50. Luo, Y., 2005. Toward coopetition within a multinational enterprise: A perspective from foreign subsidiaries. J. World Bus., 40: 71-90.
51. Gnyawali, D.R. and B.J.R. Park, 2011. Co-opetition between giants: Collaboration with competitors for technological innovation. Res. Policy, 40: 650-663.
52. Hunt, S.D. and C. Derozier, 2004. The normative imperatives of business and marketing strategy: Grounding strategy in resource-advantage theory. J. Bus. Ind. Marketing, 19: 5-22.
53. O'Cass, A., L.V. Ngo and V. Siahtiri, 2015. Marketing resource-capability complementarity and firm performance in B2B firms. J. Bus. Ind. Marketing, 30: 194-207.
54. Bengtsson, M. and M. Johansson, 2014. Managing coopetition to create opportunities for small firms. Int. Small Bus. J., 32: 401-427.
55. Luo, Y., 2007. A coopetition perspective of global competition. J. World Bus., 42: 129-144.
56. Bello, D.C., C.S. Katsikeas and M.J. Robson, 2010. Does accommodating a self-serving partner in an international marketing alliance pay off?. J. Marketing, 74: 77-93.
57. Arslan, B., 2018. The interplay of competitive and cooperative behavior and differential benefits in alliances. Strategic Manage. J., 39: 3222-3246.
58. Kanter, R.M., 1994. Collaborative advantage. Harvard Bus. Rev., 72: 96-108.
59. Gronroos, C., 1997. Value-driven relational marketing: From products to resources and competencies. J. Marketing Manage., 13: 407-419.
60. Luo, X., A. Rindfleisch and D.K. Tse, 2007. Working with rivals: The impact of competitor alliances on financial performance. J. Marketing Res., 44: 73-83.
61. Quintana-Garcia, C. and C.A. Benavides-Velasco, 2004. Co-operation, competition and innovative capability: A panel data of European dedicated biotechnology firms. Technovation, 24: 927-938.
62. Kim, J. and A. Parkhe, 2009. Competing and cooperating similarity in global strategic alliances: An exploratory examination. Br. J. Manage., 20: 363-376.
63. Park, S.H. and M.V. Russo, 1996. When competition eclipses cooperation: An event history analysis of joint venture failure. Manage. Sci., 42: 875-890.
64. Knudsen, M.P., 2007. The relative importance of interfirm relationships and knowledge transfer for new product development success. J. Product Innovat. Manage., 24: 117-138.
65. Newbert, S.L., 2007. Empirical research on the resource-based view of the firm: An assessment and suggestions for future research. Strategic Manage. J., 28: 121-146.
66. Kunc, M.H. and J.D. Morecroft, 2010. Managerial decision making and firm performance under a resource-based paradigm. Strategic Manage. J., 31: 1164-1182.
67. Piercy, N.F., 2010. Evolution of strategic sales organizations in business-to-business marketing. J. Bus. Ind. Marketing, 25: 349-359.
68. Tzempelikos, N. and K. Kooli, 2018. Moderating effects of environmental uncertainty on behavioural intentions in business markets-a study across theoretical perspectives. J. Bus. Ind. Marketing, 33: 1037-1051.
69. Teece, D.J., 2018. Business models and dynamic capabilities. Long Range Plann., 51: 40-49.
70. Vorhies, D.W. and N.A. Morgan, 2005. Benchmarking marketing capabilities for sustainable competitive advantage. J. Market., 69: 80-94.
71. Zahra, S.A., H.J. Sapienza and P. Davidsson, 2006. Entrepreneurship and dynamic capabilities: A review, model and research agenda. J. Manage. Stud., 43: 917-955.
72. Katsikeas, C.S., N.A. Morgan, L.C. Leonidou and G.T.M. Hult, 2016. Assessing performance outcomes in marketing. J. Marketing, 80: 1-20.
73. Carbonell, P. and A.I.R. Escudero, 2010. The effect of market orientation on innovation speed and new product performance. J. Bus. Ind. Marketing, 25: 501-513.
74. Crick, D., S. Chaudhry and J.M. Crick, 2016. Trading in a competitive environment: South-Asian restaurants in the UK. Strategic Change, 25: 371-382.
75. Czakon, W. and K. Czernek, 2016. The role of trust-building mechanisms in entering into network coopetition: The case of tourism networks in Poland. Ind. Marketing Manage., 57: 64-74.
76. Raza-Ullah, T., M. Bengtsson and S. Kock, 2014. The coopetition paradox and tension in coopetition at multiple levels. Ind. Marketing Manage., 43: 189-198.
77. Tidstrom, A., 2014. Managing tensions in coopetition. Ind. Marketing Manage., 43: 261-271.
78. Crick, D. and J.M. Crick, 2016. Coopetition at the sports marketing/entrepreneurship interface: A case study of a Taekwondo organisation. Marketing Intell. Plann., 2: 169-187.

79. Peters, L.D. and A.D. Pressey, 2016. The co-ordinative practices of temporary organisations. J. Bus. Ind. Marketing, 31: 301-311.
80. Bouncken, R.B. and S. Kraus, 2013. Innovation in knowledge-intensive industries: The double-edged sword of coopetition. J. Bus. Res., 66: 2060-2070.
81. Ganesan, S., A.J. Malter and A. Rindfleisch, 2005. Does distance still matter? Geographic proximity and new product development. J. Market., 69: 44-60.
82. Mathias, B.D., A. Huyghe, C.J. Frid and T.L. Galloway, 2018. An identity perspective on coopetition in the craft beer industry. Strategic Manage. J., 39: 3086-3115.
83. Geldes, C., J. Heredia, C. Felzensztein and M. Mora, 2017. Proximity as determinant of business cooperation for technological and non-technological innovations: A study of an agribusiness cluster. J. Bus. Ind. Marketing, 32: 167-178.
84. Roy, F.L., 2001. [Competitive aggressiveness, company size and performance (In French)]. Int. J. P.M.E., 14: 67-84.
85. Neyens, I., D. Faems and L. Sels, 2010. The impact of continuous and discontinuous alliance strategies on startup innovation performance. Int. J. Technol. Manage., 52: 392-410.
86. Belderbos, R., M. Carree and B. Lokshin, 2004. Cooperative R&D and firm performance. Res. Policy, 33: 1477-1492.
87. Tomlinson, P.R., 2010. Co-operative ties and innovation: Some new evidence for UK manufacturing. Res. Policy, 39: 762-775.
88. Santamaria, L. and J. Surroca, 2011. Matching the goals and impacts of R&D collaboration. Eur. Manage. Rev., 8: 95-109.
89. Roy, P. and S. Yami, 2009. Managing strategic innovation through coopetition. Int. J. Entrepreneurship Small Bus., 8: 61-73.
90. Rusko, R., 2011. Exploring the concept of coopetition: A typology for the strategic moves of the Finnish forest industry. Ind. Marketing Manage., 40: 311-320.