

The Dilemma of Cooperation-Competition: Rivalry, Market Failures and Firm Resources

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Extended Abstract

This study approaches the organizational strategy with emphasis on the relationships between environmental rivalry, market failures, implementation and use of firm resources and use of cooperation - competition strategies. In this sense, it is based on the perspective of competitiveness as a result of firm's position in industry (Competitive Advantage Theory), resources and capabilities controlled by companies (Resource Based View - VBR) and the influence of industry structure on the conduct and performance of firms (Industrial Organization Model - I / O). In addition, we present cooperation and competition under the perspective of complementarity, being an important strategy to face the intense competition in industry.

The context portrayed in the work evidences decision-making processes in an environment characterized by market failures and high rivalry between competitors. In this circumstance, the structure of the market can profoundly influence the management and performance of firms and thus market failures reveal unexpected results brought about by the economic dynamics that prevent the free market from approaching economic efficiency. This perspective refers to the context that can be analyzed from the perspective of Game Theory, mainly as a mechanism to investigate the cooperation - competition dilemma through the interaction between agents in situations of choices. The interaction among decision makers leads to a certain strategic behavior that, depending of a given scenario, is based on the maximization of particular rewards of agents. Thus, the game expresses the ability to model decision-making processes in situations of cooperation and conflict.

The firms, object of this study, are derived from cooperative principles, therefore, anchored essentially in cooperation - competition strategies and belonging to the Minas Gerais State dairy farming sector. The research is characterized as transversal, inductive method, quantitative approach, descriptive, data collection through questionnaires and data analysis using multivariate statistics - Structural Equations Modeling. In line with the objective of the research, the study shows that the environmental rivalry and the market failures of the industry generate significant effects in the use of cooperation - competition strategy, but do not generate significant effects in the implementation and use of firm resources. Also, the firm 's resources generate significant effects on the use of cooperation - competition strategy.

We adopted the PLS (Partial Least Squares) as method of parameters estimation. Such statistical treatment is aimed at checking the existence of positive and statistically significant

relationship between environment rivalry, market failures, implementation and use of the firm's resources and the use of cooperation-competition (alternative hypothesis-H₁). Therefore, the hypothesis H_{1a} -The greater the rivalry of the environment, the greater the implementation and use of resources of the firm - and H_{1b} -The bigger the market failures, the greater the implementation and use of the firm's resources - refer to the effects of industry constructs (environment rivalry and market failures) on the construct resources of the firm. The contribution of the study evidenced by these hypotheses concerns the influence of the external environment on the firm's internal environment, in this case, which adopt cooperation-competition strategies as the essence. As for the theory that relates to such a perspective, it stands out the Resource Based View (VBR) and the Industrial Organization model (I/O). It is emphasized, according to the I/O perspective, that most companies competing in an industry control similar, relevant resources and adopt similar strategies and, thus, such resources have a lot of mobility among companies. Therefore, firms have a resource structure appropriate to the adopted strategies and, in this sense, does not receive influence from the rivalry of the environment and the market failures of industry.

Giving sequence, the hypothesis H_{1c} (non-rejected) - The greater the implementation and use of the firm's resources, the less the use of cooperation strategies – competition - due to the negative sign of the path coefficient of the estimated structural model, it is inferred that the firms that already hold the ownership of the resources needed to maintain favorable competitive positions, tend to reduce the adoption of cooperation – competition strategies. From the hypothesis H_{1d} -The greater the rivalry of the environment, the greater the use of strategies of cooperation-competition by the firm -, it is noted that, depending on the negative sign of the path coefficient, there is a tendency to adopt individualist strategies by the firms, the greater the rivalry faced in the competitive environment. Finally, the Hypothesis H_{1e} – As greater the market failures, the greater the use of cooperation - competition strategies by the firm -, in this case, as consequence of the positive sign of the estimated parameter, it is understood that cooperation-competition strategies are used as a mechanism for mitigating the negative effects of market failures.

With regard to the influence of the resources of the firm on cooperation – competition strategies (hypothesis H_{1c}) it is mentioned that the Resource Based View assumes that the resources developed and controlled by the companies are considered their main sources of competitive advantage. Durable resources are difficult to develop or acquire and therefore some firms surpass others, even if they are competing under the same conditions at the industry. Thus, the attributes value, rarity, imperfect imitability, and organization evidence the way in which the firm employs its resources in the interests of its strategy. In this sense, the I/O perspective argues that the majority of companies competing in an industry control similar, relevant resources and adopt similar strategies and, thus, these resources have a lot of mobility between the firms and the *Rent-seeking* Behavior Model highlights the way organizations look for resources and capacities that can develop strategies that allow economic returns higher than the market average. In view of the above, and considering the profile of the companies surveyed, it is concluded that the hypothesis H_{1c} shows adherence to the theoretical framework presented.

As for the hypothesis H_{1d}, it is recognized that the essence of formulating a competitive strategy is to relate a company to its environment and that competitive advantages of companies that adopt win-win strategies outweigh those that are worth of the win-lose or lose-lose strategies. Relationships involving cooperation (generate collaborative advantages; collective gain) and competition (boost their opportunities; use of rare resources and essential skills) fluctuate uninterruptedly. Thus, it is also recognized that the firms surveyed adopt interorganizational cooperation strategy, that is established through the various horizontal and vertical relationships that these institutions maintain with their different

consumers and clients and that such relationships generate a values network that make up the framework of the game that should be used by the companies as reference of value map for the determination of their strategies.

In line with such arguments, the Iterated Prisoner's Dilemma (DPI), portrays the way that economic agents, in seeking to satisfy their individual interests, can cooperate with each other or adopt competitive, individual and non-coalition attitudes. From this perspective comes the Non-Cooperative Equilibrium Theory (Nash Equilibrium) proposing a solution for mixed games (cooperatives and non-cooperatives). So according to the strategy *Tit for Tat*, winner of the DPI tournament, cooperation can be achieved as a balance situation when there are iterations and knowledge of the actions of other players. So, these cooperative and non-cooperative games are counterparts and non-antagonistic. It is concluded that the evidence pointed out by the hypothesis H_{1d} are supported by theories on the subject.

Finally, with respect to hypothesis H_{1e} , it is emphasized, for the purposes of analysis of market failures, the relevance of the approach to the general equilibrium, from which derives the concept of the perfect competition which presumes a market in which there are no distortions or failures that prevent it from approaching the ideal of economic efficiency, (i.e. the Pareto-efficient). In this context, consumers maximize their satisfaction, producers maximize their profits, get full employment, the production factors are allocated in a great way, either by the firms as a whole or in each one individually. On the other hand, considering that the conditions of general equilibrium are not observed in the context of the agricultural cooperatives of milk of Minas Gerais, and taking into account the theoretical assumptions of economic liberalism treated in the Adam Smith's *Wealth of Nations*, this market requires the government to exercise its basic functions.

Thus, the current research points out that the industry studied is characterized by the existence of many sellers and buyers and positive externality that shows the importance of cooperatives for the market in which they operate but notes the presence of information asymmetry and inefficiency of state. Thus, faced with the challenges imposed by this industry environment, firms establish some cooperation strategy with the intention of reducing their shortcomings in certain competencies and generating synergy capable of supplying such weaknesses. In this sense, the strategy of cooperation and competition allows to integrate different resources and capacities and thus generate essential skills of difficult imitation by the competitors. It can occur between two or more economic agents through relationships, in this study, classified as interorganizational. So, the evidence flagged by hypothesis H_{1e} have full support in the studied theory.