REVISTA DE NEGÓCIOS
Inovação e Estratégia em Organizações

http://dx.doi.org/10.7867/1980-4431.2023v28n3p41-55

DOES THE NONMARKET ENVIRONMENT INFLUENCE PROCUREMENT STRATEGY IN AGRICULTURAL SUPPLY CHAINS?

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Submissão: 15/06/2022 - Aceite: 24/07/2023.

ISSN 1980-4431 | *Double blind review*

Abstract

We explore in this research the nonmarket environment's influence on procurement strategy. Given the industry's meaningful regulatory framework, the Brazilian biodiesel supply chain was chosen as an empirical analysis object for that discussion. Through the lens of the nonmarket strategy theoretical framework, this paper discusses how the Brazilian biodiesel firms shape their raw-material procurement strategy under the influence of the Social Fuel Stamp regulation. The data collection was based on interviews with the market and nonmarket practitioners and participant observation. Biodiesel firms must shape their procurement strategy to purchase raw household farming materials to fulfill the Social Fuel Stamp requirements. High costs and challenges are noticed from this need. The study concludes that the Brazilian biodiesel supply chain constitutes empirical evidence of the nonmarket strategy theoretical framework relevance. Therefore, senior managers should consider this topic from a strategy conception standpoint. Quantitatively exploring the role of the nonmarket environment over the procurement strategy can be the subject of future research.

Keywords: Nonmarket Environment. Nonmarket strategy. Strategy. Supply chain. Biodiesel.

1. Introduction

Supply chain management is an inter-organizational approach that encompasses all the activities necessary to produce and deliver a product to fulfill an end customer's requirement (Mentzer et al., 2001; Drake, 2012). Managing a supply chain means coordinating several traditional business functions such as procurement, forecasting, transportation, production, and inventory management to meet end customers' needs (Prater & Whitehead, 2013). Understanding those needs is key to establishing the proper supply chain strategy.

Procurement, also known as supplier relationship management to the latest literature (Lambert & Enz, 2017), concerns the relationship buyers establish with their supplier network (Lambert & Cooper, 2000). Among the several theoretical lenses through which procurement might be assessed, one of the most common and relevant is the make-or-buy decision (Grover & Malhotra, 2003; Walker & Weber, 1984, 1987). In this case, the level of governance control will relate to the behavioral and transactional characteristics of the buyer-supplier relationship (Williamson, 2008).

While the internal characteristics of the transactions are vital in shaping business, particularly procurement strategy, it also is the industry structure surrounding the firms in a supply chain (Porter, 1980, 1991). The combination of Porter's Competitive Advantage and Williamson's Transaction Cost Theory supported some seminal papers published by Brazilian scholars on the dynamics of the agricultural supply chains (Farina, 1999; Zylbersztajn, & Farina, 1999). Several pieces of research have been published following the theoretical frameworks proposed by these two important papers.

The biodiesel supply chain is a critical segment of the Brazilian agricultural industry that received significant attention from scholars in the last ten years. This supply chain has been formally set up to be environmentally friendly, socially fair, and economically feasible (Bueno, Esperancini, & Takitane, 2009; Castro, 2011). One of the most relevant aspects of this supply chain concerns the controlling mechanism available to the public power that allows them to manage the supply chain towards the social development targets. This mechanism is named Social Fuel Stamp (César & Batalha, 2010, 2011; Mourad & Zylbersztajn, 2012).

Although several studies approach the Social Fuel Stamp from different perspectives, most of them in an exploratory and descriptive way (Kohlhepp, 2010; Kuss, Kuss, Rosa, Aranda & Cruz, 2015; Osaki & Batalha, 2011; Santos, Borschiver & Souza, 2014; Talamini, Oliveira, Gohr, Santos, & Dewes, 2012), it lacks research discussing how this regulatory framework shapes the biodiesel producer's business strategy, precisely the procurement strategy of the firm. Therefore, this paper discusses how the biodiesel producer's procurement strategy is influenced by the Social Fuel Stamp, a relevant nonmarket environment aspect in the biodiesel supply chain.

The proposed discussion focuses on the theoretical framework of the nonmarket strategy and nonmarket environment (Baron, 1995a, 1995b, 1997). In contrast, it sheds light on the importance of the nonmarket environment characteristics in shaping business strategy, therefore, going beyond classic Porter's approach (1980, 1991). It seems especially applicable to highly controlled industries such as the Brazilian biodiesel supply chain. In addition to this introduction, this piece brings a literature review on the nonmarket environment and nonmarket strategy, followed by methodology, results, and concluding remarks.

2. Theoretical Framework

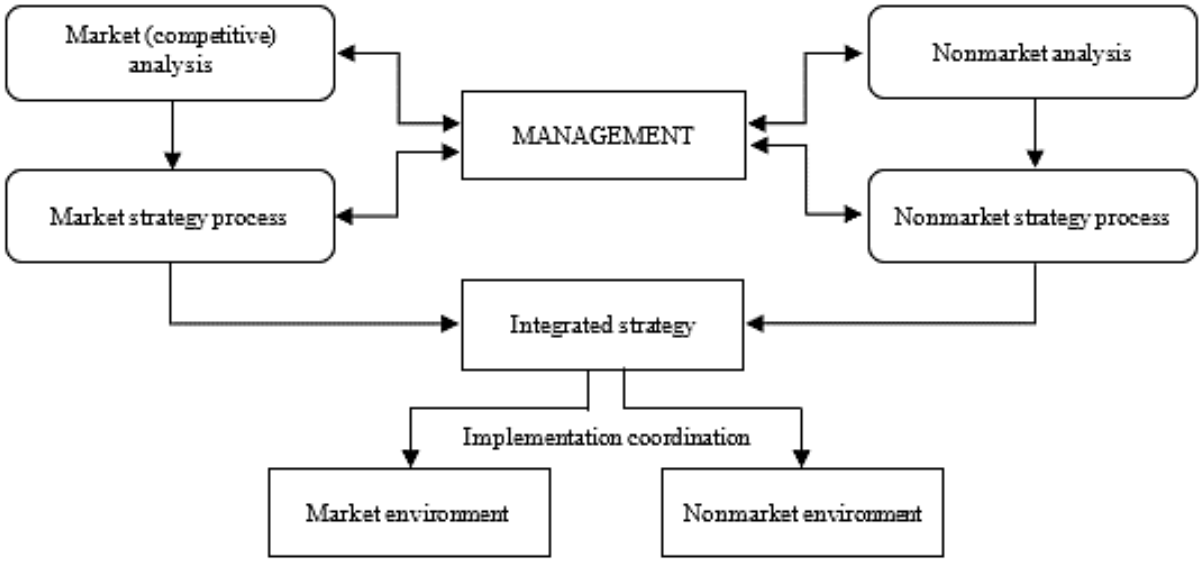
The subject strategy is a traditional topic in scholarly journals. One of the main theoretical streams considers that strategy relies on the internal resources and competencies of the firm (Barney, 1986, 1991, 1995, 2001). Other scholars, however, argue that strategy must focus not only on the internal resources but also on the aspects of the competitive environment in which the organization is inserted (Porter, 1980, 1991). In common between these two perspectives is the purpose of the firm's strategy: to reach competitive advantage and, therefore, to reach superior performance (Barney, 1986, 1991, 1995, 2001; Porter, 1980, 1991).

Porter (1980, 1991) argues that there are five forces shaping industry competition patterns: the threat of new entrants, the risk of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and rivalry among competitors. Despite being primarily accepted in management, this concept overlooks the relevance of nonmarket aspects to the firm's strategy. Rindova and Fombrun (1999) widen Porter (1980, 1991) concept, arguing that the competitive arena is formed by the organizational field and the firm's environment. According to the authors these dimensions are divided into four domains: markets, resources, microculture, and macroculture. The domain of microculture of Rindova and Fombrun's (1999) is the expansion of Porter's model (1980, 1991).

Akbar and Kisilowski (2023) address a theoretical gap in the literature by highlighting the significance of non-bargaining nonmarket strategies of firms. The authors proposed a theoretical model that hypothesizes a reliance on non-bargaining nonmarket strategies in situations relevant to a firm-conditioned weakness of societal forces pertinent to a firm (including the firm itself) and when relevant state institutions display high degrees of professional, structural, and ideological bureaucratic inflexibility.

Baron (1995a, 1995b) evolves in the discussions on the relevance of nonmarket environment aspects to the formulation and implementation of business strategy, arguing that both market and nonmarket environment are equally crucial to a firm's strategy and, therefore, to obtain a competitive advantage. Baron (1995a, 1995b) argues that business strategy will be integrated if it encompasses both market and nonmarket aspects. Figure 1 illustrates Baron's approach (1995a, 1995b).

Figure 1. Integrated strategy: analysis through implementation.



Source: Baron (1995a).

The concept of nonmarket strategy pops up from the relevance of the nonmarket environment for the performance of individual firms in specific markets (Bach & Allen, 2010; Baron, 1995a, 1995b, 1997). Nonmarket strategies generally are directed at public policies that affect the structure and functioning of markets and, thus, the competitive advantage sources (Baron, 2001).

Another aspect of Nonmarket strategy is that it involves actions that organizations implement to address political, social, and legal factors that impact their operations beyond the traditional market (Riaz et al., 2022). The achievement of sustainable competitive advantage relies on the capacity of the firm to deal with social, political, and environmental aspects more than manage competitive-environment-related aspects (Bach & Allen, 2010; Baron & Diermeier, 2007; Hillman & Hitt, 1999.).

Baron (1995a, 1995b) argues that the nonmarket environment may be defined by four “I’s”: Issues, Institutions, Interests, and Information. The first “I” (Issues) relates to conditions or events within the nonmarket environment. One example of Issue in Baron’s perspective (1995a, 1995b) might be, for example, the issuance of a new public regulation that benefits a competitor. Institutions, the second "I", establish Issues (Baron, 1995a, 1995b). Groups influence Institutions to act in a certain sense. The third “I” argued by Baron (1995a, 1995b) concerns to Interests of certain groups. The groups of Interest act over the Institutions looking to address certain Issues based on Information, the fourth “I”. The Information regards the each-other knowledge the parties have.

To better understand the concept of non-market strategies, it is important to recognize the existence of a certain alignment between two distinct facets of non-market strategies. Firstly, we consider the nature of the actors involved. Secondly, we analyze the ties that connect these actors to the company. These two facets of non-market strategies have been extensively studied by Gatignon, Gama and DeMello (2023).

The researchers sought to establish associations between attempts to exert influence, either directly or indirectly, on regulatory processes. It was found that non-market strategies associated with direct cooptation and control are more related to legal capture, while strategies that aim to exert indirect influence, for example, through constituent building tactics, are more aligned with legal compliance.

The fundamental concept of non-market strategy is associated with a combined pattern of actions that companies adopt to manage their institutional and social environments for economic gains.

Recent research on non-market strategies has acknowledged the complementarity between its two distinct forms: corporate political activity and corporate social responsibility (Adomako et al., 2023).

The central hypothesis put forth by these authors is that non-market strategies will lead to improved company performance. However, the authors also caution that empirical studies examining the performance outcomes of non-market strategies have yielded mixed results. For instance, some studies, like that of Liedong et al. (2017), have found that corporate political activity in emerging markets is positively associated with outcomes such as reduced institutional risk and appropriate market reactions amidst weak and inefficient institutions.

The analysis done by Blake Markus & Martinez-Suarez (2022) shows how companies can calibrate two non-market strategies – political ties and corporate social responsibility (CSR) – to mitigate risks related to populism. The authors specify how particular configurations of political ties and corporate social responsibility activities, targeting populist leadership, bureaucrats, political opposition, and societal stakeholders, minimize risk under populism.

The relevance of nonmarket strategy for the performance of the firm and, therefore, in shaping business strategy is connected to the degree of control that the State has on the market opportunities (Baron, 1995a; Bonardi, 2008). The more the market opportunities are in the hands of the State, the more relevant is the nonmarket strategy to firm performance (Baron, 1995a; Bonardi, 2008).

On the other hand, non-market or non-market strategies also received attention, conceptually defined as management strategies for actors and contexts that permeate economic activity, such as relationships with governments, civil society entities, communities, among others (Partyka et al., 2019).

However, according to Liedong, Aghanya & Rajwani (2020), investigate emerging scenarios from another look, which understands the local institutional environment as the result of adjustments and configurations created, purposely or not, for the market to develop in other molds (Bothello, Nason & Schnyder, 2019). Moreover, it is necessary to formulate about the role of organizational non-market strategies in these contexts, their antecedent factors, and their content, in the form of system constraints and conditioned by it (Ahen & Amankwah-Amoah, 2018).

The Social Fuel Stamp is an “Issue” of interest that has been explored in the literature. This regulation can be defined as a set of norms or rules that stimulates biodiesel production firms to include household farmers in their raw material supply chains (Bueno et al., 2009; Mourad & Zylbersztajn, 2012). It materializes the government efforts to make the biodiesel industry meet the social development targets (Castro, 2011). Although the Social Fuel Stamp is not mandatory, it works as a tacit passport for the biodiesel producers to regularly sell, while the firms that do not hold it are allowed to participate in only 20% of the market (Paiva, 2009; Silva, 2013).

3. Methodological Procedure

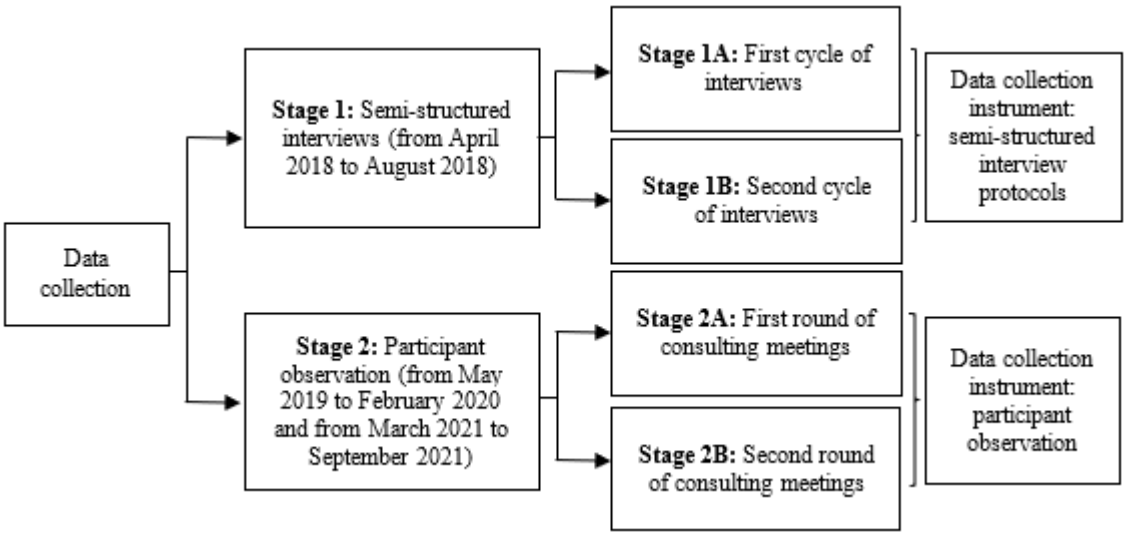
The procedures for data collection adopted in this research were divided into two stages. The first stage (Stage 1) occurred between April 2018 and August 2018 and consisted of semi-structured interviews with key agents of the Brazilian biodiesel supply chain. The second stage (Stage 2) occurred from May 2019 and February 2020 and from March 2021 to September 2021 and comprised a series of consulting meetings from which data was systematically collected through participant observation.

In the first stage, 14 interviews with 11 professionals were made in two cycles (Stage 1A and 1B), following the procedures envisioned by the Grounded Theory research technique (Charmaz, 2014; Corbin & Strauss, 2015; Strauss & Corbin, 2008). In Stage 1A, eight interviewees were conducted, and in Stage 1B, six professionals were made. To confirm data and concepts in the process of saturation, three interviewees were interviewed in both cycles, as per recommended by Charmaz (2014), Corbin & Strauss (2015), and Strauss & Corbin (2008).

Like Stage 1, Stage 2 is divided into two stages (Stages 2A and 2B). Stage 2A, from May 2019 to February 2020, encompassed two in-person consulting meetings with the senior management team

of a Brazilian palm crusher investigating the feasibility of investing in a biodiesel production facility. Stage 2B, from March 2021 to September 2021, comprised four online consulting meetings with the senior management team of a Brazilian soybean crusher studying the feasibility of investing in a biodiesel production facility. In both stages, the meetings also counted on a group of consultants that led the discussions. Figure 2 shows the data collection procedures systematization.

Figure 2. Data collection systematization.



Source: the authors.

The interviews during the Stage 1 took place in the cities of Brasília, Campinas, Curitiba, São Carlos, and São Paulo. All the interviewees allowed the interviews to be recorded. As a result of that, it was possible to transcribe the speeches and make a deeper content analysis using software Atlas.ti® v8. The Table 1 shows the characterization of each interviewee as well as the cycle of interviews each of them have participated.

Table 1. Description of the interviewees.

Interviewee	Stage	Professional background	Entity	Management level
E1	1A	Head of Business	Biodiesel producer	Strategic level
E2	1A and 1B	Procurement Coordinator	Biodiesel producer	Tactical level
E3	1A	Logistics and Procurement Analyst	Biodiesel producer	Operational level
E4	1A	Procurement Coordinator	Biodiesel producer	Tactical level
E5	1A	Head of Public Policy, Social Fuel Stamp	Regulatory agency	Strategic level
E6	1A and 1B	Senior Economist	Biodiesel producers association	Strategic level
E7	1A and 1B	Senior Economist	Biodiesel producers association	Strategic level
E8	1A	Head of Public Policy, biodiesel commercialization	Regulatory agency	Strategic level
E9	1B	Chief Editor, specialized press	Press	Strategic level
E10	1B	Senior Professor, agricultural supply chains	P&D	Strategic level

E11	1B	Congressman, head of biodiesel parliamentary coalition	Federal legislative power	Strategic level

Source: the authors.

In Stage 1, we conducted the interviews using four semi-structured interview protocols. The first protocol (Type I) was used in interviews with professional experts in biodiesel enterprises. The second protocol (Type II) was used in interviews with professional experience in nonmarket environment institutions. The third protocol (Type III) was prepared after assessing the interviews in Stage 1A.

It has been applied to professionals with experience in biodiesel enterprises and professionals working in nonmarket environment institutions. The fourth protocol was exclusively prepared to be used with the congressman. Table 2 summarizes the use of each protocol according to the cycle of interviews and the type of interviewee in Stage 1.

The participant observation occurred in Stage 2A and occurred in two in-person meetings in Belém. Those meetings aimed to brainstorm the significant risks, opportunities, threats, and strengths that a palm crusher could capture by investing in a biodiesel production facility. The participant observation in Stage 2B took place in four online consulting meetings. Likewise, in Stage 2A, in Stage 2B, the meetings aimed to brainstorm the risks, opportunities, threats, and strengths of an investment in a biodiesel production facility, but, in this case, associated with a soybean crushing plant. Table 3 brings details on the meetings encompassed by Stage 2.

Table 2. Application of the semi-structured protocols.

Cycle of saturation	Interview	Agent	Questionnaire
First	1	Head of Business	Type I
	2	Procurement Coordinator	
	3	Logistics and Procurement Analyst	
	4	Procurement Coordinator	
	5	Head of Public Policy, Social Fuel Stamp	Type II
	6	Senior Economist	
	7	Senior Economist	
	8	Head of Public Policy, biodiesel commercialization	
Second	9	Procurement Coordinator	Type III
	10	Chief Editor, specialized press	
	11	Senior Professor, agricultural supply chains	
	12	Senior Economist	
	13	Senior Economist	
	14	Congressman, head of biodiesel parliamentary coalition	Type IV

Source: the authors.

Table 3. Consulting meetings subject of the participant observation.

Stage	Date	Place of the meeting	Participants
2A	06.24.2019	Firm's head office, Belém, PA, Brazil	CEO, CFO, Head of Procurement, Senior Consultants 1, 2 and 3.
	08.29.2019	Firm's head office, Belém, PA, Brazil	

2B	05.07.2021	Videoconference	Procurement Coordinator, Business Intelligence Manager, Senior Consultants 1, 2 and 3.
	05.21.2021	Videoconference	
	08.09.2021	Videoconference	Procurement Coordinator, Business Intelligence Manager, CEO, CFO and Senior Consultants 1, 2 and 3.
	08.12.2021	Videoconference	

Source: the authors.

The data analysis has been made parallelly with data collection. The data analysis at this point supported the development of the interview protocol types III and IV. As soon as Stage 1B finished, the new interviews were transcribed, and new data analysis began. The data collected during Stage 2 was valuable to confirm and better understand the relevance of the procurement strategy and the role of the Social Fuel Stamp in establishing this strategy. At this stage, despite not being recorded, the main points addressed in the interviews were recorded for further analysis.

4. Presentation and Analysis of Results

The Social Fuel Stamp regulation makes the business liaison between two categories that would not be the most probable business partners in a free market condition: the biodiesel producing firms and the household farmers. As an industrial operation within a commodity supply chain, the biodiesel producer firm would establish its procurement strategy on market relation, seeking reliable suppliers offering products at price market. The need to have the Social Fuel Stamp as a passport to have free access to the market tie those two unfamiliar categories.

The Social Fuel Stamp regulation understands that the bargaining power in the buyer-supplier relationship between biodiesel producers and household farmers is on the former's side. Therefore, the regulatory framework envisages two mechanisms to make this relation less unbalanced, attempting to promote a fairer inclusion of the household farmers. These two regulatory tools are presented in Table 4.

Table 4. Requirements to be fulfilled by the biodiesel firm to get the Social Fuel Stamp.

Premises		Description
4	Raw-material procurement contract must be signed prior to the beginning of seedling.	Having the contract signed prior to seedling brings to the household farmer the guarantee that the production will be purchased. Ideally, the contract must clearly state the price to be paid by the biodiesel producer to the household farmer, but it is acceptable to have a pricing formula with clear and public parameters.
2	Biodiesel producer must make available free technical assistance to the household farmer.	The objective is to guarantee to the household farmer that all the required informational and technical input will be provided by the expenses of the buyer aiming at higher yields.

Source: the authors.

The ultimate objective of the public policy behind the Social Fuel Stamp regulation is to promote rural development among the poorer regions of Brazil, having the household farmers as a vector to that end. However, the efforts and costs towards the raw material origination from household farmers in the Northeastern region's semiarid area or the Northern region of Brazil are quite different from doing the same from Southern household farmers. From a public policy standpoint, although the Social Fuel Stamp successfully included household farmers in the biodiesel supply chain, this has not been made uniformly, as stated by the Interviewee 11:

> So, the issue of Social Fuel Stamp, whose we were talking about, did not work for the original objective, which was the inclusion of the household farmer of the Brazilian Northeastern region. Did not work in my point of view […] If it did not work for that end, so what? It exists just to favor the Brazil's Southern household farmers. They do not need that. They are very well.

The arguments presented by Interviewee 11 lie in the fact that the Social Fuel Stamp program is heavily based on the procurement of soybeans from Southern region farmers. While biodiesel producers need to meet Social Fuel Stamp requirements, they look for that by originating raw material from the regions where the supply chains are better structured and where the suppliers are familiar with the commodity trading mechanisms. These characteristics are found in the Southern soybean supply chain. Interviewee 2 explains the reasons why it is easier to establish a Social Fuel Stamp program in the Southern region of Brazil:

> […] a large percentage of the Social Fuel Stamp program is being made in the Brazil's South as this is a structured region in which the commodity [trading] is of firm's knowledge; the supply chain as well as the trading mechanisms are quite well fashioned; and there was already a strong culture based on agricultural cooperatives.

The cooperatives in the Southern soybean supply chains are an essential asset in making the biodiesel producers' life easier in structuring their Social Fuel Stamp programs. The cooperatives are traditional institutions in their regions and play a vital role in supporting farmers in all stages, from procuring agricultural inputs to trading. In practical terms, the cooperatives work as a facilitator for the biodiesel firm as they manage all the activities that would be tough to do alone.

For a biodiesel producer installed in Brazil's Southern region, this model is reasonable. However, most of the biodiesel producers in Brazil seek Southern household farmer soybeans to fulfill Social Fuel Stamp needs. Therefore, a biodiesel producer located, for example, in Mato Grosso, might require Southern household farmer soybean to meet its Social Fuel Stamp needs.

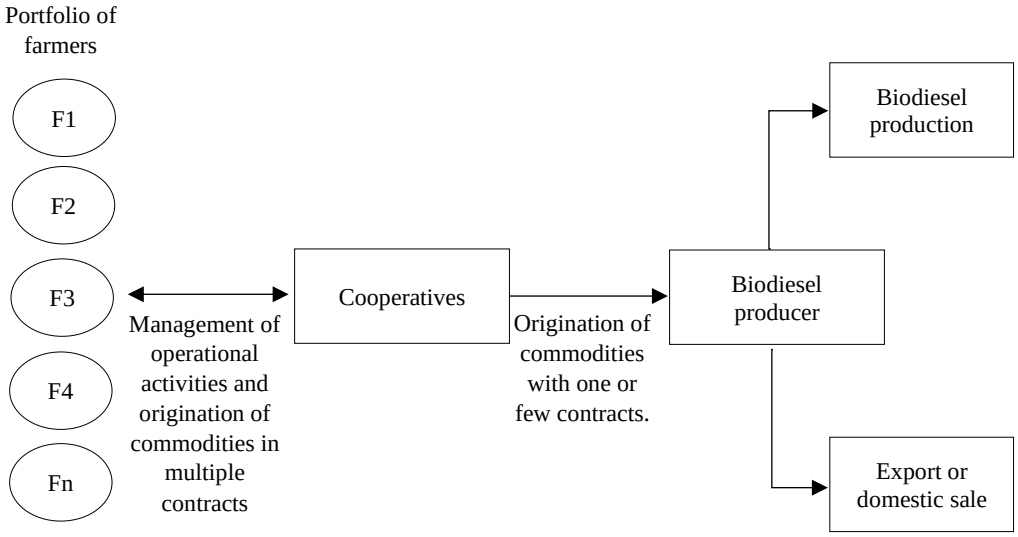
As it is economically unfeasible to ship beans from the South to the Midwest, biodiesel producers buy these grains in Southern Brazil and sell them locally or export them via local ports. After that, they show the government through paperwork that the quantity of household farm raw material has been procured elsewhere and sold in specific markets. On this matter, Interviewee 4 states:

> […] but, if you are in the Midwest and you are obliged to buy [household farmer soybean] and you have found a solution in the South […], that quantity of soybean bought from South will not go to Mato Grosso to be crushed; it will be exported or resold.

Considering the role of the cooperatives in the Southern soybean supply chain for Social Fuel Stamp and the product's destination according to the biodiesel producer's location, the soybean from Southern Brazil's household farmers can perform the flows described in Figure 3.

The evidence that the biodiesel producer needs to fulfill the Social Fuel Stamp, and for that purpose, it is required origination of household farmers' soybeans shows that the nonmarket environment influences the drawing and implementation of procurement strategy in this industry. This influence is especially relevant for firms not based in the South of Brazil. In these cases, to make the procurement strategy feasible, they eventually need to enter a new business to flow the grains purchased in the Southern region.

Figure 3. Southern Brazil soybean supply chain.



Source: the authors.

In addition to the procurement model rooted in the Southern soybean supply chain, some biodiesel firms try to develop oilseeds supply chains from scratch. These initiatives are generally based in poorly structured regions or supply chains. The literature that discusses Brazilian biodiesel issues is vast in describing such initiatives and assessing their impacts in terms of local and rural development (Conejero et al., 2017; Kuss et al., 2015; Leão et al., 2011). Those projects have their economics based on the incentives the Social Fuel Stamp regulation offered to such initiatives. Although the existence of these incentives, they are not enough to support the investments in the structuration of an oilseeds supply chain, as we stated by Interviewee 4:

> So, you go to Midwest, North and Northeast, they are poor regions. Even with the incentives coming from the Social Fuel Stamp regulation based on multipliers, this is not enough because those regions require longstanding presence and investments. You must develop a supply chain [from scratch] in these regions to fulfill your needs.

The capacity to originate household family oilseeds to fulfill Social Fuel Stamp requirements is crucial for firms assessing investment in the biodiesel industry. As the Social Fuel Stamp is the passport to access the market, it was remarked that the two firms that have been assessed an investment in biodiesel production took the assessment of their capacity of originating this type of raw material very seriously. Ultimately, none of the two firms decided to move forward with the investment. Among the aspects, they cited a lack of clarity about their capacity to comply with the Social Fuel stamp program.

As envisaged by Baron (1995a, 1995b); Rindova & Fombrun (1999), "Institutions" face each other in the nonmarket arena to influence the "Issues". In other words, firms and other groups of interest try to bargain in the nonmarket strategy with policymakers' regulations and legislations that fit better their specific interests. In the biodiesel industry, it is no different. The different unions and class associations are in permanent contact with policymakers trying to drive the regulations on their behalf or against their rivals' interests. In this respect, Interviewee 9 argues:

> Each [firm] has a bit different style in acting in the nonmarket environment, but, in practical terms, all the groups of interest act through their class associations, dealing with the congressmen and congresswomen and with the executive power.

The most active groups of interest in the biodiesel supply chain's nonmarket arena are the institutions that represent the household farmers, the ones that assist the biodiesel producers, and the ones that represent agricultural cooperatives, mainly those from the South. Those associations represent the interests of the parties concerned with the Social Fuel Stamp rules. On the strategies that some associations deploy, Interviewee 4 states:

> We see that, some associations, they do not try to benefit the supply chain [as a whole], but one region. So, one association "x", it seeks for better rules to its associates, with no counterparty to the rest of the country. Unfortunately, some people in the associations have strong political influence […] There is no reason to discuss technical aspects with technical arguments when someone with a strong political support changes something in the rules.

Therefore, it seems vital that the biodiesel producers have not only capabilities to deal with the market issues. It seems fundamental that they hold relevant capabilities to act in the nonmarket environment. These capabilities will ultimately support consistent positions that may lead to changes in the regulations that bring competitive advantage for those that succeed in the strategy or competitive disadvantage for those that have been negatively hit by a change in the rules.

5 Concluding Remarks

This study aimed to discuss how the nonmarket environment rules shape procurement strategy. The Brazilian biodiesel supply chain highlights this relation as the Social Fuel Stamp regulation is an "Issue" (Baron, 1995a, 1995b) that biodiesel producers need to address to compete in this market. The Social Fuel Stamp relies on the biodiesel firm's strategy of raw-material procurement. The results presented in this study have been based on qualitative research based on questionnaires and participant observation data collection procedures.

Grounded on the collected data, it is possible to deduce that the nonmarket environment is vital in shaping procurement strategy in the Brazilian biodiesel supply chain. The evidence shows that, in the context of the Social Fuel Stamp absence, the biodiesel producers would focus on raw-material sourcing by deploying market governance (Williamson, 2008), targeting large purchases at market price levels. To comply with Social Fuel Stamp rules, biodiesel producers need to be flexible, shaping their procurement strategy towards either the Southern soybean supply chain or the structuration of oilseeds supply chains in the Northeast, North, and Midwest regions. Considering the Social Fuel Stamp regulation and its influence on procurement strategy, some potential entrants declined to invest in this sector.

The nonmarket arena in the biodiesel industry is an essential field of bargaining. As Social Fuel Stamp rules are regularly reviewed, the distinct groups of interest usually deploy nonmarket strategies to influence the direction of the rules to be defined by the policymakers. Minor changes, for example, in the multipliers, can make it easier or cheaper for household farming raw-material procurement in a particular region over others. The procurement strategy of the firms is susceptible to such types of changes. This type of competition is not explained by Porter (1980, 1991) but is clarified by Baron (1995a, 1995b) and other more recent papers (Kranenburg & Voinea, 2017; Zheng, Ang & Singh, 2022).

The understanding that the nonmarket environment is relevant for the biodiesel supply chain in Brazil generates some managerial implications. The most important one is that biodiesel producers must strengthen their nonmarket capabilities. By doing so, the firms become able to function as opinion-makers in the nonmarket environment, reaching more friendly regulations. Ultimately, firms may capture a competitive advantage from these efforts. Another important managerial implication relies on the technical capabilities that the firms should develop or hire to deal with the procurement strategy of household farmers. Establishing good procurement strategies means understanding the Social Fuel Stamp rules to reach the objective of conquering and maintaining the certificate at the lowest cost possible.

This research's main limitation concerns its epistemological perspective founded on a qualitative approach. Despite its relevance in profoundly exploring the empirical object and the theoretical framework of nonmarket strategy, bringing important insights into its functioning, this research's results are not subject to generalizations. The suggestion for future research on the nonmarket environment and its impact on procurement strategy is to develop a quantitative study capable of measuring to which extent the nonmarket environment influences the procurement strategy.

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