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The firm as an architect of polycentric governance: Building open institutional infrastructure in emerging markets

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Abstract

Research Summary: We apply pattern-matching techniques to contrast qualitative case study data with perspectives from strategic management and institutional economics about how a firm can address voids in market-based institutions. We identify a novel approach whereby the firm builds an *open institutional infrastructure* (OII) by investing in a pool of resources widely accessible beyond its exchange partners. To collectively govern OII, the firm must empower other actors within multilateral cross-sector partnerships, and it must enforce the resulting rules through relational norms based on alignment between public and private value creation. These findings, achieved by adapting Elinor Ostrom's principles of polycentric governance to corporate actors who take the lead in building OII, advance our understanding of new organizational forms that transcend the traditional boundaries of firms and markets.

Managerial Summary: Emerging markets typically present additional obstacles for business operations because they lack the necessary underlying institutional infrastructure such as access to capital and labor markets. We introduce a new way for firms to overcome these obstacles—which we call building an OII—

by investing in such infrastructure themselves and making it available to their commercial partners, local communities, and even to competitors. Firms must empower those actors to take the lead in collectively defining the rules for accessing this infrastructure, by orchestrating cross-sector partnerships. This process creates relational norms around the alignment of public and private interests, which ultimately can promote firms' competitive advantage.

KEYWORDS

cross-sector partnerships, Elinor Ostrom, emerging markets, open institutional infrastructure, pattern-matching

1 | INTRODUCTION

Firms in emerging markets typically suffer from voids in market-based institutions—that is, from the absence of an institutional infrastructure (e.g., access to capital and labor markets or to legal frameworks such as intellectual property law) that would facilitate their business transactions (Dutt et al., 2016; Gao, Zuzul, Jones, & Khanna, 2017). Prior theory in strategic management suggests two possible ways that firms can address these voids (Dorobantu, Kaul, & Zelner, 2017; Marquis & Raynard, 2015).

The first is to develop an institutional infrastructure that mainly benefits the focal firm, as by leveraging relational rents (Ahuja & Yayavaram, 2011; Luo & Chung, 2005) and internal investments (Khanna & Rivkin, 2006; Mahmood & Mitchell, 2004) or engaging with key stakeholders on an "instrumental" basis (Donaldson & Preston, 1995; Henisz, Dorobantu, & Nartey, 2014; Jones, 1995). In emerging markets, this approach is commonly adopted by business groups (or multinational firms) that are sufficiently large and influential enough to make it payoff.

A second approach is to join public or nonprofit initiatives to build or improve existing institutional infrastructure for the benefit of a broader set of participants who share access to it (Dutt et al., 2016; George, McGahan, & Prabhu, 2012; McDermott, Corredoira, & Kruse, 2009). Noncorporate actors typically take the lead in such initiatives, as they have greater legitimacy than corporate actors to act in the public sphere (Bhanji & Oxley, 2013; Selsky & Parker, 2005) and are thus often better placed to bridge the differences between the corporate and nonprofit sectors (Brown & Ashman, 1996).

This study was inspired by our discovery of a firm that did not seem to have followed either of these two paths, and yet has successfully overcome substantial voids in market-based institutions. Between 1990 and 2010, the Brazilian cosmetics firm Natura worked with population groups that were marginalized from traditional labor and capital markets: first downstream to distribute its products through a direct sales network made up of women with limited access to education or capital and few professional alternatives, and then upstream to ecologically source ingredients and knowledge about their properties from traditional communities within Brazilian biomes (naturally occurring flora in areas such as the Amazon rainforest). The company has been widely lauded for social and ecological initiatives that, although key to its business success, have not benefitted Natura alone or even first; in this way Natura deviates from the first approach just described. This firm has also been recognized for forming cross-sector partnerships (CSPs) (with public and nonprofit actors and with local communities) to implement many of these initiatives. In that "bridging" role, Natura does not—contrary to the second approach—rely on public or nonprofit organizations to establish such initiatives.

To gain a better grasp of Natura's approach to addressing voids in market-based institutions in a way that bucks the two extant approaches mentioned earlier, we collected in-depth qualitative data from archives and interviews, which we then analyzed using a pattern-matching technique (Greenwood, Hinings, & Brown, 1994; Lapointe & Rivard, 2007; Shane, 2000). The objective of pattern-matching is to help researchers reexamine implicit mental models and shared assumptions by rendering them explicit and contrasting them with the data (Sinkovics, 2018). This technique led us to contrast the first two extant approaches to addressing voids in market-based institutions with Natura's, along eight dimensions that correspond to Elinor Ostrom's design principles for managing commonly held resources such as institutional infrastructure (Ostrom, 2005). These dimensions help us uncover different patterns across the three approaches, in terms of who gets access to what resources, how the rules governing those resources are formed and the means through which those rules are enforced.

The features of Natura's approach that emerged as highly distinctive from the other two led us to characterize this path as building an *open institutional infrastructure* (OII)—a pool of resources that can be accessed by a broad range of actors beyond the firm's commercial partners, the development of which the firm enables by empowering cross-sector actors to jointly take the lead within multilateral partnerships, whose rules for governing OII are then reinforced through relational norms promoting the alignment of public and private value creation rather than through formal sanctions.

We go on to consider how this approach fits Ostrom's characterization of polycentric governance–according to which "multiple independent actors" must determine "a general system of rules" under which to "mutually order their relationships with one another" (Ostrom, 1972). We then conclude by discussing how our findings can advance research on nonmarket strategy and emerging markets.

2 | LITERATURE AND FORMULATION OF PATTERNS

Here, we introduce Ostrom's design principles before using them to analyze two types of approaches whereby firms can address voids in market-based institutions, per extant research in strategic management. Our objective is to present two sets of patterns that capture these approaches and against which we will then compare our data on Natura.

2.1 | Ostrom's design principles: institutional infrastructure as a commonly held resource

Ostrom noted that "a competitive market—the epitome of private institutions—is itself a public good" (Ostrom, 1990, p. 15). However, voids in such market-based institutions occur because of a "provision problem" (Pfeifle & Earnest, 2014, p. 47) whereby "the state lacks the information or the ability to design institutions that are conducive to economic exchange (Ostrom, 1990)"

(Dorobantu et al., 2017, p. 125). Other actors may then seek to palliate this lack of public institutions by creating alternative institutional infrastructure to "reduce institutional costs for those that voluntarily commit to (them)" (Dorobantu et al., 2017, p. 117). This type of institutional infrastructure would then come to resemble other commonly held goods (or common-pool resources) such as fisheries, forests, or irrigation systems, where beneficiaries are hard to exclude yet each user can negatively impact the available pool. This notion appears consistent with the two established approaches firms adopt toward voids in market-based institutions (introduced above and further detailed below), whereby they either create their own institutional infrastructure primarily for their own benefit or join nonprofit or public actors' initiatives to create shared elements of institutional infrastructure.

As such, a useful starting point for our inquiry can be to understand how firms' approaches to addressing voids in market-based institutions differ from one another, in relation to existing standards for how to manage commonly held resources. In such cases, Ostrom advances that "polycentric" governance arrangements become key to organizing collective action. As reported in Table 1, eight design principles underlie this general system of rules, derived from dozens of case studies conducted longitudinally across the world (Ostrom, 1990, 2005).

The first two principles help us understand what the boundaries of commonly held resources are and how the benefits are allocated (or in other words, "who gets what?," per Table 1). In Ostrom's view, there should be clear boundaries, and benefits should be allocated across participants proportionally to the costs they incur. The next four principles help us understand how the rules for accessing resources are designed (or "who makes the rules?"). Ostrom's work indicates that as the scale and scope of commonly held resources grow, smaller-scale governance activities should be nested within larger-scale ones. It also stipulates that those actors to whom the rules apply should participate in the elaboration of the rules through collective choice arrangements that allow for rapid and low-cost conflict resolution, and that the rights of participants to organize the use of resources must be granted (at least minimal) formal recognition by regulatory authorities. The two final design principles help us understand how to ensure that rules are respected ("how are rules enforced?"). Based on Ostrom and colleagues' research, monitoring should be tightly enforced through official (potentially rotating) positions, and sanctions for noncompliance with the rules should be immediate but graduated (e.g., harsher penalties for the third offense versus the first).

2.2 | Pattern 1: the firm as the central architect of a closed institutional infrastructure

Most tactics discussed in the strategic management literature aim primarily to internalize or circumvent voids in market-based institutions. Although not exclusive to business groups, those firms' strategies typify this approach in emerging markets: family ties, board or equity interlocks, and overlapping ownership (Khanna & Rivkin, 2006) allow such firms to build their own institutional infrastructure primarily for their own benefit and their partners'. This can take the form of internal capital markets or reputational capital that reduces the impact of uncertainty on transactions (Gao et al., 2017; Mahmood & Mitchell, 2004). The advantages so derived include acquiring subsidies or establishing monopolies as well as gaining preferential access to natural resources, securing favorable contractual, and regulatory terms and/or tapping into

TABLE 1 Contrasting three approaches for addressing voids in market-based institutions in light of Ostrom's design principles

Ostrom's design principles for polycentric governance	Pattern 1: The firm as the central architect of a closed institutional infrastructure	Pattern 2: The firm as a secondary actor in building elements of shared institutional infrastructure	Pattern 3: The firm as an architect of open institutional infrastructure
1. Who gets what?			
Clearly defined boundaries to avoid free riding	Strict boundaries restricted to exchange partners (=)	Public or nonprofit bridging actors have the legitimacy to define access (=)	Permeable boundaries with endogenous free riding from commercial partners, competitors, and communities (≠)
Benefits are allocated proportional to costs	Benefits accrue primarily to the firm, which seeks to evade the costs of voids in market-based institutions (≠)	Bridging actors determine proportionality across cross-sector participants (=)	Disproportional: Acceptance of spillovers with higher costs to the firm than to other actors who benefit (≠)
2. Who makes the rules?			
Participants have (at least minimal) recognition of their rights to organize by authorities	Yes, but can be flouted because of dependence asymmetry and power imbalance (≠)	Bridging actors have the authority to (in)formally grant recognition of rights to organize (=)	May require helping less powerful actors to gain such recognition (≈)
Collective choice arrangements involve all participants in decision-making	Decision-making can be skewed towards the firm's interests due to power imbalance (≠)	Bridging actors ensure equal representation (=)	Empowering other actors to fully participate in and eventually co-lead cross-sector partnerships (=)
Rapid and low-cost conflict resolution mechanisms	Power imbalance and resource dependence limit contestation. Contractual arrangements anticipate conflict. (=)	Bridging agents mediate conflict between participants (=)	Slow, costly, dialogue-based conflict resolution through/with public and nonprofit actors (≠)

TABLE 1 (Continued)

Ostrom's design principles for polycentric governance	Pattern 1: The firm as the central architect of a closed institutional infrastructure	Pattern 2: The firm as a secondary actor in building elements of shared institutional infrastructure	Pattern 3: The firm as an architect of open institutional infrastructure
Governance activities are nested within multiple layers of nested enterprises	Governance activities are centralized within hub-and-spoke structures connecting the firm and its exchange partners (≠)	Bridging actors are the pillars of multilateral cross-sector partnerships (=)	Diverse actors collaborate through multilateral cross-sector partnerships at the local, national & supra-national levels (=)
3. How are rules enforced?			
Monitoring is tightly enforced through official positions (or rotations)	Tight monitoring of exchange partners by the firm, especially to avoid spillovers (=)	Tight monitoring of the firm by bridging actors, who may be suspicious of corporate interests (=)	Quasi-voluntary cooperation enforced by reputational norms based on the alignment of public and private interests (≠)
Graduated sanctions	Harsh/immediate sanctions (e.g., terminating contracts, discontinuing access to resources) by the firm against exchange partners (≠)	Harsh/immediate sanctions (e.g., exclusion from CSPs) against the firm, especially when perceived as pushing corporate interests (≠)	

otherwise unattainable customer bases. They often rely on nonmarket, *relationship-based* strategies, among which are co-opting elites such as politicians (Ahuja & Yayavaram, 2011) and leveraging family ties (Luo & Chung, 2005); other examples include forming relationships with a broader set of stakeholders to earn a "social license" (Henisz et al., 2014), to negotiate better contracts (Dorobantu & Odziemkowska, 2017), or to develop new products for poorer communities (Simanis et al., 2008).[1] Thus, "relational" and "infrastructure building" (Marquis & Raynard, 2015) strategies[2] can *jointly* reinforce the advantages of firms that have the size and clout to wield them in emerging markets.

All these tactics are underpinned by the same assumption: the strategic goal is to lower institutional costs for the focal actors (i.e., the firm and its exchange partners, whether they be other firms, politicians, or local communities, for example) while leaving those costs relatively unchanged for others (Dorobantu et al., 2017). Hence, the firm shies away from proactively solving voids in market-based institutions because it would rather not make investments on which others can free-ride. For that reason, even strongly "other oriented" strategies within the first approach are based on optimizing the social and environmental impact of one's own operations and/or collaborating with influential stakeholders or local communities while expecting that they will, in turn, give back to the firm (Dorobantu et al., 2017). In other words, such strategies are *not* based on seeking to optimize market functioning for a broader set of actors but are rather geared primarily toward enhancing firm performance.

This has implications for the design rules that underpin such an approach, summarized in Table 1. First, for institutional infrastructure to be closed means defining highly restrictive boundaries around who can access the shared resources—namely, the focal firm and its exchange partners (e.g., business group members and the firms, politicians and communities they transact with). This is in line with Ostrom's first principle of clearly defined boundaries to avoid free-riding. However, the firm's primary objective is to capture as much benefit as it can, by evading the costs of voids in market-based institutions. Whether this is proportional to the extent of its investments compared to those of other participants (per Ostrom's second principle) is thus relevant only insofar as it seeks to capture the greatest possible share of total value created while ensuring partners' continued cooperation (Brandenburger & Stuart, 1996; Garcia-Castro & Aguilera, 2015).

As for the process through which rules are elaborated, the focal firm seeking to internalize or circumvent voids in market-based institutions primarily for its own benefit may be motivated to (perhaps disproportionately) influence the design of rules rather than ensuring equal representation—in some instances perhaps even if it undermines participants' recognized right to elaborate their own rules. As a result, the firm may be more inclined to centralize the management of interdependencies into bilateral arrangements (with commercial partners, local communities, or politicians, for instance) irrespective of their area of remit (e.g., local, regional, national, etc.), rather than nesting collaborative arrangements within each other.

Finally, establishing other actors' dependence on the firm (per granting access to one's own institutional infrastructure, contractual agreements for goods and services, campaign or

[1]In its original form, the term "bottom of the pyramid" (BOP) designates poverty alleviation through financially profitable activity and is attributed mainly to multinational enterprises (Kolk, Rivera-Santos, & Rufín, 2014). This conceptualization is in line with the approach described here. However, variants on the original BOP model have recently been introduced (e.g., being led by nonprofit organizations or viewing the poor not just as customers but also as co-inventors and entrepreneurs, per Kolk et al., 2014), which may create stronger parallels in some instances with the second approach described below or even with some aspects of Natura's approach as characterized subsequently.
[2]These tactics are also known as "internalization" and "partnership" strategies, respectively (Dorobantu et al., 2017).

philanthropic donations) should limit contestation of the rules governing its closed institutional infrastructure and facilitate monitoring by the firm. Family ties across business group affiliates, for instance, enable this type of alignment. Moreover, the firm is likely to establish legally enforceable agreements where feasible—such as community benefit agreements (Dorobantu & Odziemkowska, 2017) that allow sanctions for contractual breaches.

In light of Ostrom's design principles and as per Table 1, this approach therefore seems to offer a well-defined and enforced set of rules, but whose basis and locus of control are skewed toward the firm to an extent that they may be difficult to sustain over the long term—possibly explaining instances of backlash against corporations who have lost their social license to operate in emerging markets (Dorobantu & Odziemkowska, 2017; Henisz et al., 2014). These implications are summarized in the following pattern that characterizes this first approach:

Pattern 1 *A firm will address voids in market-based institutions by building a closed institutional infrastructure, whose benefits accrue primarily to the focal firm that defines, monitors, and enforces rules within centrally managed collaborative exchanges.*

2.3 | Pattern 2: the firm as a secondary actor in building elements of shared institutional infrastructure

Notwithstanding the considerations just discussed, there is growing interest in an alternative and more inclusive approach to solving large-scale social problems (Eisenhardt, Graebner, & Sonenshein, 2016; George et al., 2012), such as persistent voids in market-based institutions. For the firm, this approach consists of joining public and nonprofit organizations in CSPs to address problems of mutual interest (Brown, 1991).

CSPs can provide effective solutions for such large-scale challenges by assembling a more complete set of resources to address issues that are beyond the scope of a single organization (Bode, Rogan, & Singh, in press; Rangan, Samii, & Van Wassenhove, 2006; Yaziji & Doh, 2009). For example, CSPs have been instrumental in upgrading the Argentinean wine industry (McDermott et al., 2009), integrating women into Bangladesh financial markets (Mair, Martí, & Ventresca, 2012), and launching business incubators in India (Dutt et al., 2016).

However, this approach reflects the assumption that a firm—rather than leading the formation of CSPs—will instead play a secondary role. Indeed, the management literature emphasizes the legitimacy deficit of corporate actors that attempt to establish CSPs. Relationships within CSPs have been described as "inevitably tense" (O'Riain, 2000, p. 191); the reason is that firms have an instrumental objective when seeking to eliminate voids in market-based institutions (Scherer & Palazzo, 2007), whereas public and nonprofit organizations are primarily motivated to create social value (Mair et al., 2012; Teegen, Doh, & Vachani, 2004). Hence, public and nonprofit actors may blame private actors for hijacking the presumably common objectives of CSPs by too strongly pushing a corporate agenda (Cook, Dodds, & Mitchell, 2003; Zammit, 2004). Thus, although "bridging organizations" (Brown, 1991; Brown & Ashman, 1996) can bring together diverse actors to deal with issues of mutual concern (e.g., voids in market-based institutions), this role is typically played by nonprofit or public actors and not by firms (Dutt et al., 2016; George et al., 2012; McDermott et al., 2009).

This assumption is highly consistent with Ostrom's view on polycentric governance, which is built on the premise that "public entrepreneurs" will take the lead by "articulating different ways of organizing to improve joint outcomes" (Ostrom, 2000, p. 149). As summarized in

Table 1, these public entrepreneurs will promote effective design rules insofar as they will be well placed to legitimately and clearly define who should get access and determine the proportionality of benefits and costs among participants. This greater legitimacy should also enable them to support the nesting of local governance regimes within larger-scale collaborative arrangements, ensure widespread participation in the elaboration of rules, and rapidly resolve any conflicts that occur while upholding participants' right to organize. Furthermore, such public entrepreneurs will have the incentive and clout to monitor corporate partners and impose harsh sanctions (including exclusion and reputational damage) against them if they were to unduly promote their own interests.

From a firm's perspective, however, the implication is that this approach offers only a partial solution. Because it relegates them to a secondary role, firms are limited in the extent to which they can determine how to address the voids in market-based institutions that affect their business operations—despite the potentially high cost of their participation in any CSP. As such, this approach may result in partial *elements* of institutional infrastructure offering incomplete solutions to the challenges faced by the firm. There are three reasons why this outcome is unsatisfactory also from a broader societal perspective: (a) it would likely perpetuate a status quo under which the government is unable (or unwilling) to address voids in market-based institutions; (b) nonprofit organizations are overwhelmed by the magnitude of this task; and (c) the private sector's potential, in terms of contributing to a common solution, then remains largely untapped.

Hence, the works cited here suggest that if firms seek to overcome voids in market-based institutions for a broader (albeit clearly delimited) group of beneficiaries—that is, beyond their exchange partners (as in Pattern 1)—then we should expect the resulting joint solutions to reflect the pattern encapsulated below:

Pattern 2 *A firm will address voids in market-based institutions by adopting a more secondary role within cross-sector partnerships for developing elements of a shared institutional infrastructure, whose rules are defined, monitored, and enforced by public or nonprofit actors.*

3 | METHODS AND DATA

Understanding how firms address voids in market-based institutions requires unpacking the connections between the firm, its relationships with other actors, and the institutional environment. This is a particularly complex set of interactions characterized by evolution over time and across levels of analysis. As Ostrom herself predicted when discussing the design principles that emerged from her work, "game theorists will be surprised at the extremely large number of components … that create the context within with a game is played" (Ostrom, 2005, p. 6). Qualitative research can be particularly powerful for understanding issues of this type, or "phenomena involving complex temporal dynamics or causal mechanisms, often embedded in nuanced social interactions" (Graebner, Martin, & Roundy, 2012, p. 279). Thus, the richness of qualitative data makes it well suited for capturing the multifaceted nature of firms' efforts to address voids in market-based institutions.

3.1 | Pattern matching with qualitative case-study data

Pattern matching is a process that can be used for "comparing a predicted theoretical pattern with an observed empirical pattern" (Sinkovics, 2018). This process can be applied to both quantitative and qualitative data. For the latter, it consists of formulating a set of patterns based on prior literature (as cited, e.g., in this paper's previous section), viewing a case study through the lens of these patterns by comparing them with those observed in the data, and then describing the extent to which those patterns validate those initially formulated (Greenwood et al., 1994).

The field of management has seldom used pattern-matching techniques to analyze qualitative data even though such methods have been successfully applied in many other fields, including computer science, urban planning, and program evaluation, to name just a few (Sinkovics, 2018). Notable exceptions include work by Greenwood et al. (1994), Shane (2000), and Lapointe and Rivard (2007). Yet, this technique presents advantages that warrant its use not only in our paper but also in other strategic management studies—especially those that are phenomenon-based.

According to Sinkovics (2018), pattern matching can make it easier for readers to retrace a newly published paper's interpretations of qualitative data and to evaluate its findings in relation to prior work. In fact, pattern matching provides a structure for revealing the work's implicit "mental models" and assumptions—and for placing subsequent data analysis in the context of those assumptions—in order to reevaluate their theoretical implications.

Such assessments are crucial for scholars conducting phenomenon-based research, which is usually motivated by the premise that critical aspects of a novel empirical phenomenon cannot be fully explained by the extant research. The challenge, of course, is to identify explicitly just what is new about the phenomenon in question (i.e., Natura's approach to addressing voids in market-based institutions) and just how it differs from current theories about the broader issue at hand (in this paper, about *other* approaches to addressing voids in market-based institutions). Although researchers well steeped in the field may intuit relevant distinctions, the task of documenting them through qualitative data, communicating them to readers, and articulating their theoretical implications is far from straightforward. Pattern matching can simplify matters because it offers a structured process for surfacing and then, in light of new qualitative data, reexamining the implicit mental models and assumptions that underlie prior research.

In our paper, this methodology involves describing how Natura deviated from prior ways of addressing voids in market-based institutions—that is, the approaches summarized in Patterns 1 and 2, whose tenets (encapsulated by our analysis of them in light of Ostrom's design principles) reflect the current underlying theory's implicit mental models.

3.2 | Direct sales and ecological sourcing at Natura

Natura was founded in 1969 as a microentrepreneurial venture in Sao Paulo, by two young men[3] with a passion for cosmetics as a vector of well-being and human relationships. Starting in the 1980s, Natura expanded into other parts of Brazil. Although it ventured into neighboring countries and a few European countries starting in 1982, the bulk of its operations remained in Brazil during our period of study, which ranges from 1990–2010.

These two decades were characterized by two periods of tremendous revenue growth, during which Natura became the industry leader in Brazil, received numerous national and international awards, and became a publicly listed company in 2004. We use the period's first

[3]Luiz Seabra founded Natura, initially in partnership with Jean-Pierre Berjeaut. By the end of the 1980s, Berjeaut had left the firm while Guilherme Perao Leal and Pedro Luiz Passos had joined Natura's leadership team.

decade (1990–1999) as a "backdrop" to understand Natura's subsequent evolution. We focus primarily on the next 11 years (2000–2010) because that is when Natura dramatically expanded its sales force and began to source ingredients from Brazilian biomes—and also because we sought to minimize retrospective bias.

Our decision to examine this case was motivated by several factors suggesting that it was unusual in ways that could be inconsistent with the patterns formulated previously. *First*, even though Natura operated in a setting with documented widespread voids in market-based institutions (Perkins, 2014; Vassolo, De Castro, & Gomez-Mejia, 2011), its commercial success[4] showed that it found ways to overcome these voids—a precondition to examining how it did so and whether its approach accorded with the respective claims of Pattern 1 and Pattern 2.

More specifically, prior research has shown that voids in market-based institutions have strong repercussions on supply chain activities in emerging markets, especially with regard to distribution and the procurement of raw materials (Barrientos, Gereffi, & Rossi, 2011; McDermott et al., 2009; McKague, Zietsma, & Oliver, 2015; Parmigiani & Rivera-Santos, 2015). In Natura's case, analyst reports and other archival coverage—as well as the interview data described in the next section—confirmed that voids in market-based institutions were a critical challenge when developing its supply chain. This challenge arose from the firm's decision to work with population groups (direct sales consultants for product distribution and suppliers from traditional communities within Brazil's biomes) that had long been marginalized by formal labor and capital markets; as a consequence, transacting with these groups entailed practical and also legal impediments.

In spite of these obstacles, direct sales accounted for a third of the cosmetics industry's total revenue by 2010 (Łopaciuk & Łoboda, 2013). Natura was at the forefront of these developments: by that year, it was the world's third-largest direct sales company,[5] and its "Ekos" product line—which relied entirely on ecological sourcing—had increased company sales by almost a third within a year of being launched (per Natura's 2002 annual report), was touted as one of the firm's key competitive advantages, and subsequently received numerous awards.

Second, Natura's case was distinctly different in that its means of overcoming these institutional challenges within the supply chain evidently ran counter to both Patterns 1 and 2. Indeed, the repeated recognition received by Natura for its long-standing social and relationship-based approach to doing business strongly suggested that the firm had sought to invest in both public and private value creation (contra Pattern 1's predictions) by playing a lead role—and not a secondary one (contra Pattern 2)—in forming partnerships with public and nonprofit actors.

3.3 | Data

Our data collection and analyses were designed to help us gain a deep understanding of *how* Natura overcame voids in market-based institutions that undermined its commercial development, and then to contrast this with the patterns we derived from extant theory.

[4]Over the 1990–2010 period we studied, Natura consistently received high ratings in multiple industry rankings and was frequently recognized for its governance, brand, human resources, and innovation excellence. With 60% of Brazil's households owning Natura products (2011 annual report), by the end of our study period its market share had reached 14.8% (Euromonitor International, 2014)—in a country that had become the third-largest cosmetics market worldwide.

[5]http://directsellingnews.com/index.php/view/dsn_global_100_the_top_selling_companies_in_the_world#.Vfhnd7Q0O-I (accessed September 15, 2015).

3.3.1 | Data sources

Through four field visits to Brazil (in 2011, 2013, 2014–2015, and 2018) and extensive desk research, we sought to gain an accurate and nuanced understanding of Natura's evolution by "triangulating" evidence from different types of data and sources.

We consulted a rich set of archival documents from both local and international sources; see Table 2. Natura's annual reports in particular proved to be extremely useful, much as in previous work relying on such documents for valuable information about company strategy (Arndt & Bigelow, 2000; Chatterjee & Hambrick, 2007). Furthermore, starting in 2000, we were able to exploit an innovation in corporate governance: Natura's adoption of the Global Reporting Initiative guidelines that it piloted. Thereafter, the company delivered annual reports in which the economic, social, and ecological effects of its operations were spelled out in detail.

We also conducted a total of 72 in-depth, semistructured interviews that followed a "snowball" sampling technique, which led us to conduct additional interviews upon the recommendation of respondents. We approached different types of internal and external respondents in order to triangulate perspectives from Natura, its partners, and their communities; Table 3 identifies the positions that respondents held. In addition to this cross-verification of data sources and accounts, we used courtroom-type interview techniques—as when asking respondents to recall and describe the organization's decisions and actions on a specific date or regarding a particular event—that yielded more accurate accounts of Natura's actions (Eisenhardt, 1989).[6] The interviews lasted from 1 to 4 hours, each was conducted by an author in the respondents' native language (usually Portuguese; sometimes French or English), and all were transcribed by native speakers.

3.3.2 | Data analysis

We used the NVivo software, first to analyze our archival and interview data (in their original language) to facilitate iterating between theory and data as we refined our analyses via a pattern-matching approach. This involved reexamining our data to discern whether—and, if so, to what extent and how–they (dis)confirmed the design principles reflected in Patterns 1 and 2.

As part of this task, we also sought to corroborate respondents' information about the nature of the company's partnerships at different times and to comprehend more fully the resulting network structure. We first coded each instance of a reported collaborative (or conflictual, although these were rare) interaction between Natura and another actor (Henisz et al., 2014). Next, we classified these instances as a function of the sector to which each actor belonged; in this step, we drew on Salamon and Anheier's (1997) typology of nonprofit organizations. We then created a "relationship matrix" reflecting all of Natura's exchanges with external stakeholders as represented in those annual reports. Using these data as input, we employed the Gephi software to depict Natura's portfolio of stakeholders' ties for 2009 (details are given in the next section). This approach corresponds to prior studies that have used qualitative data to map out network ties toward the end of better explaining their pattern and structure (Henisz et al., 2014; McDermott et al., 2009).

[6]Sample questions from different interview protocols are available from the authors upon request.

TABLE 2 Source material by (grouped) topics and type of data

Topic	Data accessed by type [number of different sources]
External factors (i) the evolution of Brazil's institutional environment and its effect on business (ii) trends in the Brazilian cosmetics industry	• Analyst reports and longitudinal databases from local and international sources on Brazil (e.g., World Bank, International Monetary Fund, OECD reports [7] • Industry reports and statistics [14] • Pedagogical case studies [2] • Material from presentations and exchanges with researchers at academic institutions, international organizations, and policy makers (e.g., the Brazilian minister of education, two state secretaries for economic development) [13]
Natura and its external relationships (iii) internal and external perspectives on Natura's evolution, 1990–2010	• Internal reports from Natura (e.g., internal consultant and working group reports) [6] • Annual reports from Natura and key partners (e.g., UEBT, Abrinq foundation) [19] • Analyst reports (e.g., *Euromonitor International* studies of Natura between 2004 and 2014) (7) • Academic studies (e.g., Master's theses, book chapters, working and published papers on Natura in anthropology and geography with a focus on the region) [5] • Archival documentaries or news reports [10] and interviews [18] • Pedagogical case studies [6] • Documents from/about Natura's competitors [18] • Press (e.g., Factiva articles from the Brazilian and international press, *Exame* magazine reports, *Direct Selling News* articles about Natura) [770] • Semi-structured interviews (see Table 3 for list of respondents) [72] ○ Natura employees at different hierarchical levels (ranging from regional and middle managers to department heads and C-suite executives) and functional domains (starting with job functions directly relevant to distribution and ecological sourcing and then "snowballing" to include areas such as logistics and operations, human resources, and sustainability) ○ Natura's commercial exchange partners (distributors, suppliers) ○ Natura's nonfocal partners (public actors having no commercial relationship with Natura) ○ Third-party experts, including senior Brazilian executives, industry analysts, and academics from various fields (management, geography, and anthropology) with extensive knowledge of Natura and/or the local communities with which it worked

Finally, we further refined our analysis by leading two confirmatory workshops—one each in 2013 and 2014—during which we presented our emergent findings to 68 senior executives and government representatives from Brazil.

TABLE 3 List of interview respondents

Natura respondents (former and current)	7 Senior managers/corporate directors
	3 Middle managers
	Functional areas: Business and corporate development, regional operations, relationships with consultants, ecological relationships, distribution and customer service, research & development, human resources
Natura sales consultants	9 Consultants
Natura suppliers	2 Directors
	1 Administrator
Natura customers	Focus group consisting of 8 long-time clients
Academics with related expertise on Natura & Brazil	Anthropology: 2
	Business: 10
Brazilian cosmetics competitor	Manager, new business ventures
	Sustainability coordinator
	Store manager in the northeast of Brazil
	Executive director
Foreign cosmetics competitor	Manager
Political bodies	2 Secretaries of state
	Chief advisor, social services for Industry
State-owned company	Technical coordinator, engineering specialization program
Consulting firm	Partner
Logistics distribution firm	President, Latin America
Beverages firm	President
Alumni association	President, Brazil branch
Raw materials firm	President
Investment fund	Director
Business group	Learning & development director
Information technology firm	CEO
Foreign banks in Brazil	Manager
	2 Executive directors
	Project manager, Brazil
Domestic banks in Brazil	Strategic planning and marketing manager
	Human resources manager, corporate banking
	Director of performance management, compensation and benefits
	3 Executive directors
	Large accounts manager
	Compliance manager
	Corporate finance senior associate

4 | PATTERN MATCHING AND THEORETICAL DEVELOPMENT

4.1 | Boundary definition and allocation of benefits: who gets what?

We started by examining how Natura overcame institutional challenges in direct sales and ecological sourcing through the lens of Ostrom's first two design principles: who gets access to the institutional infrastructure created and how are the benefits allocated among these participants? We found that the boundaries of that institutional infrastructure expanded considerably over time, that the set of actors who received access was highly inclusive, and that many benefitted disproportionately from Natura's investments without bearing equivalent costs.

4.1.1 | Boundary definition and allocation of benefits in direct sales

By 2010, Natura was relying on a network of 1.2 million consultants to sell its products across Brazil. These individuals were typically women, from lower socioeconomic classes or from underdeveloped and/or rural areas of Brazil, who had limited access to education (and thus no financial or business training) or capital (e.g., no access to bank loans for setting up their business or even for ordering stock from Natura) and hence few alternatives in the formal labor market. Moreover, the regulatory guidelines for managing a direct sales network—in which salespersons are independent and not employees of the company—were incomplete in that they failed to address such important issues as the implications for consultants' taxes and retirement planning. Table 4 provides illustrative quotes about how these issues affected Natura.

Natura decided to address these voids in market-based institutions by gradually expanding the scope of problems it addressed (i.e., the boundaries of its institutional infrastructure). For example, Natura's initial position was that the government should be responsible for basic education of its citizens and that the company should invest only in those aspects relevant to its business. It therefore created extensive training programs to teach consultants how to sell the products, developed a point system to facilitate gradual business growth as those skills developed, and allowed consultants 21 days (one sales cycle) to pay for their purchases.

However, Natura also decided to reconsider the scope of its training initiatives after realizing that the lack of a *basic* education—and not simply the lack of technical or sales knowledge—was severely hampering the ability of its agents to operate successfully. One manager put it this way:

> I had distributor agents come here who didn't know how to keep their accounts and didn't understand percentages. I'd use chocolate bars and explain what half, a third or two thirds represented so that they'd understand what it meant to say "this portion of your earnings is ours, and this is how much you keep."

Avon circumvented this problem entirely in Brazil (in accordance with Pattern 1) by deciding to hire only literate applicants (Chelekis & Mudambi, 2010), although that policy limited the pool of available consultants in some areas. Instead, Natura began collaborating with a public school near its plant in 1992. This first initiative led to the 1995 creation of the *Crer para Ver* (Believe to See) program, in partnership with the Abrinq Foundation, to finance local educational projects through sales of noncosmetic products such as pencils, notebooks, coffee mugs, or coin purses.

TABLE 4 Voids in market-based institutions affecting Natura's supply chain

Representative quotes	Associated voids in market-based institutions
Distribution	
I had consultants come here who didn't know how to keep their accounts and didn't understand percentages. I'd use chocolate bars and explain what half, a third or two thirds represented so that they'd understand what it meant to say "this portion of your earnings is ours, and this is how much you keep." (HR manager, Natura)	Education: Limited access to education restricts basic financial literacy Labor Markets: Limited grasp of contractual terms contributes to consultants' marginalization from formal labor markets Regulation: Low financial literacy makes it difficult for consultants to plan for retirement, per regulations on independent contractors.
Access to capital is a very large problem in Brazil. Brazilians want to acquire things and they can't. They have to buy everything in multiple payments. They buy their television in 20 payments, their microwave in 40 payments, everything like this. Then they lose control of their expenses. To the extent that here in Brazil it's very common for the middle class to save money until they can buy an apartment in cash. Interest rates are absurd. (former regional manager, Natura)	Access to Capital: Limited access to capital makes it difficult for consultants to open a bank account, take out a loan, purchase cosmetics products for resale or launch their own business Access to Capital: Limited access to capital makes it difficult for consumers to purchase products from consultants
What mobilized us [to invest in direct sales] was precisely the possibility of generating revenues in a country with so many women without the opportunity to enter any other company. http://www.abevd.org.br/htdocs/index.php?noticia_id=1077&secao=noticias (accessed September 23, 2011)	Education: Limited access to education makes it difficult to meet qualifications for entry level positions in the formal labor market. Labor Markets: Consultants' other alternatives are outside the formal labor market (e.g., informal jobs with low pay and no benefits)
Representative quotes	**Associated voids in market-based institutions**
Ecological sourcing	
You want to know what the relevant taxes are, and there's more uncertainty than certainty involved. Tax issues are already complicated enough in Brazil for us to understand, imagine explaining to local communities how to collect four or five different types of taxes. This is a huge challenge, especially with communities that are generally isolated and without access to social benefits such as education, healthcare or public transportation. (distribution & customer service director, Natura)	Regulation: Complex regulations are not adapted to isolated, traditional communities Education: Limited access to basic education makes complex regulation more difficult to explain Labor markets: Communities' inability to comply with complex regulations contributes to their decision to sell to informal intermediaries
These local communities ... live exactly the way their grandfathers taught them, and they need to teach this to their own children and grandchildren, or they won't be able to sustain themselves. So, we'd show up and say, "we've signed UNICEF's charter for children's rights	Labor Markets: Employment contracts clash with traditional lifestyles. Regulation: The convention on biodiversity and Brazilian regulations do not provide guidance on the practical ramifications of working with local communities

TABLE 4 (Continued)

Representative quotes	Associated voids in market-based institutions
and if your child doesn't stop working, we won't sign a contract with you." The communities would refuse to sign an agreement with us, because their children are their guarantee of a future and we were taking this away from them. (HR manager, Natura)	Education: Public school schedules are at odds with traditional lifestyles and harvesting
We encountered a fiscal and political problem [in paying community funds for labor] because you couldn't do this: If I buy a service or knowledge from you, I have to pay you for it. So, we went to the government to open public policy debates again, saying: For our concept to work, we're going to pay 1 or even 2 million, but for a community that decides how to spend it for its own development. We'll open investment funds in their name, explain to them and train them in how to manage this process (HR manager, Natura)	Regulation: The convention on biodiversity and Brazilian regulations do not provide guidance on the practical ramifications of working with local communities Access to capital: Communities are unaccustomed to managing large funds and banking Labor Markets: Standard contractual terms need to be reassessed

Finally, Natura also expanded the boundaries of its institutional infrastructure to address the long-term sustainability of direct sales. Because consultants are not employees, they must create and maintain their own pension plans. Natura partnered with other public and nonprofit actors to launch the creation of training kits and workshops for direct sales companies that in turn could help consultants learn about financial planning. Between 2006 and 2009, Natura trained some 55,000 agents and distributed 880,000 tool kits on financial planning.

As Natura expanded these boundaries to encompass a variety of voids in market-based institutions that affected its direct sales channel, it also expanded the range of actors that could benefit from it. Thus, it opened access not only to its consultants but also to their local communities and to other companies who sought to work with those consultants—regardless of whether the benefits they received were proportional to their investments.

Consultants were the direct beneficiaries of Natura's investments, and in many cases, they were impacted in ways that went beyond improving only their commercial relationship with Natura. For instance, by providing training and financing their stock purchases for one sales cycle, Natura helped its consultants overcome their lack of credit access. According to one such consultant,

> Natura is great because if you go to the bank to open an account, you can do that with no problem, they'll give you a checkbook and even open a retirement savings account if you want. Because you're a Natura consultant. The bank looks up my name and sees how many points I have with Natura. They'll evaluate how much I can borrow … [as a] function of my points. Because Natura has a reputation with the bank and all that, which they respect. All of the bank accounts I ever opened were through Natura.

Moreover, Natura extended the institutional infrastructure it built in direct sales so that it would also benefit its consultants' local communities at no or relatively little cost to them. To some extent, this happened organically in that the benefits "trickled down" from Natura's consultants to their customers. For instance, the consultants whom Natura helped gain access to financing could themselves help those clients with the same problem. One long-time Natura customer explained that she was paid only at the end of the month; however, her consultant was aware of this and allowed her to pay for orders in multiple installments. Another reported that "if you go to a shop, you have to pay straight away. My consultant can give me a catalog and she can give me time to pay off my purchase."

However, Natura also invested proactively in addressing the voids in market-based institutions that hindered the socioeconomic development of those communities, such as shortcomings of the educational system as a whole rather just its own consultants' educational gaps. For instance, one of the *Crer para Ver* educational projects—which operated in 12 municipalities in Chapada Diamantina (in the state of Bahia)—sought to change how schools diagnosed dyslexia and then to modify their pedagogical approach; here, the goal was increasing basic literacy within the local community (2004 annual report).

Finally, Natura's investments were also made with the clear understanding that other companies would benefit from its institutional infrastructure for direct sales, including competitors who had not invested or invested much less in its development. There was no legal prohibition against consultants working with other companies because they are not considered to be employees; even so, Avon initially restricted each of its consultant's area of operations to 200 houses, in accordance with Pattern 1. The arrival of competitors such as Natura, a firm that imposed no such conditions, forced Avon to abandon that practice in the 1970s (Associação Brasileira das Empresas de Venda Direta, 2007).

Natura, in contrast, deliberately sought to help other companies tap into the benefits of its institutional infrastructure, by playing an influential role in the Brazilian Association for Direct Sales (Associação Brasileira das Empresas de Venda Direta):

> As of 1998 [when Natura's CEO was elected president of the association], the association took on a new life. The idea was to show to what extent this activity generates opportunities for millions of people based on the ethics of commercial relationships between companies and agents. A clear code of ethics helped consolidate the seriousness and credibility of direct sales. (Associação Brasileira das Empresas de Venda Direta, 2007, p. 46)

Hence, from commercial skill development to access to capital, financial planning, codes of ethics, and basic education, Natura gradually expanded the boundaries of its investments in institutional infrastructure. It then also opened access beyond its immediate commercial exchange partners (i.e., the consultants themselves) to their communities and to other firms, irrespective of their own investments in developing the institutional infrastructure.

4.1.2 | Boundary definition and allocation of benefits in ecological sourcing

When investing in ecological sourcing for the Ekos product line, Natura faced similar obstacles as when developing direct sales. Natura also eventually addressed a wider range of institutional obstacles over time, while expanding access to a broad set of actors—not all of whom had invested as much as Natura.

First, suppliers, like consultants, were hindered by their exclusion from formal labor and capital markets; many were suspicious of "outsider" commercial entities, given the exploitative practices often employed by informal intermediaries. The first remedial action Natura took was simply to offer generous exchange terms for purchasing their harvest. Thus, in its early contacts with chestnut harvesters from Iratapuru (in the state of Amapá), for instance, Natura gave the local cooperative 3 months' notice that it would buy the entire upcoming harvest at a higher price than offered by informal intermediaries. The company returned only to discover that the chestnuts had already been sold to those very intermediaries; the cooperative's members had simply assumed that Natura would not keep its promise to return.

Moreover, suppliers also found it difficult to implement quality standards because, for instance, they had no adequate warehouses in which harvested ingredients could be stored and protected from humidity. Both to build trust and to remedy these gaps, Natura invested in training programs, certification processes, technology, financial support, and tools for evaluating the socioeconomic footprint of these efforts. For instance, Natura helped the Iratapuru cooperative build a better storage facility for chestnuts. Altogether, Natura paid its Ekos suppliers 2.7 million reais ($1.5 million[7]) in 2009 for their harvests and 550,000 reais ($313,500) for research, training, and ingredient certification.

Finally, suppliers tended to organize as families and were unaccustomed to working together with a corporation on a larger scale. Natura rapidly discovered that this had important ramifications, as a senior manager recalled:

> These local communities … live exactly the way their grandfathers taught them, and they need to teach this to their own children and grandchildren, or they won't be able to sustain themselves. So, we'd show up and say, "we've signed UNICEF's charter for children's rights and if your child doesn't stop working, we won't sign a contract with you." The communities would refuse to sign an agreement with us, because their children are their guarantee of a future and we were taking this away from them.

Solutions for protecting children's rights without isolating them from their community and traditions included aligning children's school schedules with harvesting calendars. This ensured that children could gain ancestral knowledge from their parents and get a formal education while preserving time to play. Other solutions involved incorporating studies of communities' traditional knowledge into the local school curriculum, for example.

As Natura started working with these communities, it also found that there was insufficient legislative guidance about how to allocate the benefits proportionally to their contribution. As pointed out by an employee responsible for Natura's relationships with extractive communities, the firm discovered that:

> [a]lthough the principles of the Convention on Biodiversity are straightforward, their application is much more complex: paying a fair price … sounds fine, but … how do you share [profits] with communities that are providing not just the raw materials but also the traditional knowledge associated with them? When you say that a chestnut has hydrating properties that community X in the Amazon uses for skin treatment, how much is this worth for that community, beyond just the price

[7]All currency conversions are based on the historic conversion rates at the end of the calendar year, per https://www.xe.com/currencytables, and rounded for convenience.

> of the chestnut? They're selling traditional knowledge that they've held for decades or even centuries, which deserves a certain return, which must be fair.

In addition to paying for the ingredients being harvested and investing in communities' ability to do so, Natura therefore also opted to contribute to community development funds to compensate communities for access to their communally held knowledge. Thus, in 2010, Natura poured 8.7 million reais ($5.2 million) back into its suppliers' communities, more than what it spent on purchasing the harvested ingredients from cooperatives. These funds included 1.5% of all sales of Natura products that used those ingredients—as compensation for community-held knowledge and for the firm's use of each community's image.

Thus, not only did Natura eventually address a broader range of voids in market-based institutions than it had initially anticipated. It opened access beyond its suppliers to their entire communities, while putting considerable thought into allocating benefits *at least* proportional to their contributions. Then, just as in direct sales, Natura opened up access for other firms who had not contributed. Natura sought to reduce its suppliers' dependence on the firm, in light of the short sales cycles and constant product turnover in cosmetics. Natura thus sought to increase other companies' access to those suppliers by not purchasing more than 30% of a given community's production of ingredients. When this condition could not be met initially, Natura helped the extractive communities find more buyers by improving their production, packaging, or transport processes. As a senior manager at Natura explained:

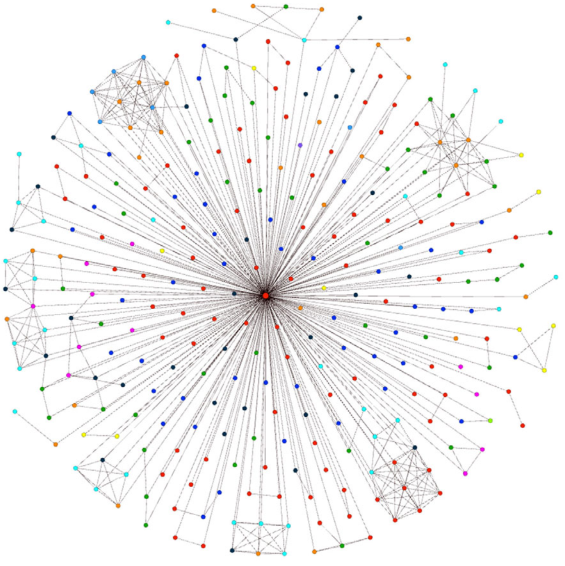
> It's important for us that Natura not be responsible for more than 30 percent of the ingredients [that] extractive communities produce. Sometimes it rises to 50–70 percent, but they've got to develop a plan to turn this around, by improving production, transport or packaging for example that we can then help with so they can start selling to others. Our process is that after X months, you've got to be ready to sell to somebody else and we'll help you find other customers, other markets.

Natura facilitated this goal by developing a robust certification process for suppliers that it disseminated across communities and to other corporations rather than keep it confidential. It then worked actively with suppliers to identify alternative customers. For example, Natura suggested to one Amazon community that they sell seeds harvested for the company to other purchasers—as buttons—after devising a process to pierce three holes in each seed. Natura also helped Cabruca, another supplier, sell its cacao to Swiss chocolate makers and eventually create its own miniature chocolate factory.

Thus, in contrast to Ostrom's design principles for defining strict boundaries and allocating benefits in function of costs (both of which are reflected in Patterns 1 and 2), free-riding was thus endogenous to the OII developed by Natura. In that open system, the boundaries of the institutional infrastructure encompassed a wide range of voids in market-based institutions and benefitted a wide range of actors regardless of their investments in the system.

4.2 | Elaboration of rules for governing institutional infrastructure: who makes the rules?

Figure 1 depicts the full set of participants involved in elaborating collective rules for how to govern the institutional infrastructure that Natura created across direct sales and ecological sourcing. It reflects the network of collaborative relationships that Natura had formed, with



Sector	# (%) of Ties
Private sector	84 (28.3%)
Business & professional associations/unions	46 (15.5%)
Government bodies	30 (10.1%)
Members of the general public	31 (10.4%)
Non-profit Organizations	106 (35.7%)
-Education and Research	32 (10.8%)
-Inter-governmental Organizations	10 (3.4%)
-Culture and Recreation	7 (2.4%)
-Social Services	1 (0.3%)
-The Environment	44 (14.8%)
-Development and Housing	11 (3.7%)
-Law, Advocacy and Politics	1 (0.3%)
TOTAL	297 (100%)

FIGURE 1 Natura's collaborative relationships (2009). This figure was derived from Natura's 2009 annual report to illustrate its collaborative relationships. Natura is depicted by a circle (node) at the center of the network, and each of its partners is depicted by a circle whose color denotes which sector it represents. The resulting network graph showcases the diversity of actors that Natura brought together within multilateral cross-sector: the diversity of partners is portrayed by the different colors and summarized in the accompanying table, while the many connections established between Natura's partners portray the multilateral nature of the network. Note than many of the bilateral relationships are with member organizations (e.g., trade associations or intergovernmental organizations) that are themselves multilateral

297 partners, in 2009 toward the end of our period of study (as described previously in the Methods and Data section). Table 5 complements Figure 1 by giving examples of those relationships.

It is clear from Figure 1 that nonprofit organizations made up the largest share of Natura's ties (35.7%, or 106 partners). These collaborations were dedicated to any of seven different issues, but education and the environment—key features of Natura's direct sales and ecological sourcing—garnered the most attention; there were links to 32 educational organizations and 44 environmental nonprofits. Corporations, governments, and the general public were also well represented, however, as per Figure 1 and Table 5. As per Table 5, some of these actors were local or regional (e.g., municipalities and schools, state universities) while others were national (e.g., the Ministry of Public Education and the Abrinq Foundation) or even inter- or supranational (such as the Union for Ethical Biotrade [UEBT]). Moreover, Natura typically structured collective action through multilateral CSPs: it engaged in 59 multilateral projects with 68 partnering organizations and reached 19 additional actors through indirect ties brokered by its partners.

The resulting structure is more multilateral and diverse than what we could expect based on Pattern 1, in which the firm should be centralizing power rather than connecting other actors. It is also surprising in light of Pattern 2: Figure 1 shows Natura to be have built a network more in line with what we would expect to see if it had been formed by a noncorporate actor with greater legitimacy to play a bridging role and avoid ensuing conflict (McDermott et al., 2009).

TABLE 5 Examples of Natura's cross-sector partnerships

Description	Partners involved in multilateral CSPs	Intermediate outcomes
Educational programs (e.g., *Crer para Ver*, support for adult literacy project, educational reform)	• Private sector: Natura, entrepreneurship coaches Natura consultants and their communities • Local municipalities • Ministry of Public Education • Nonprofit organizations (e.g., Abrinq foundation) • Local schools	• Helped 450,000 people in 5,690 schools from 3,560 municipalities • Introduced new approaches to education (e.g., dyslexia) • Enrolled 162,000 participants in adult literacy program • Database of 12,000 schools where adult education is offered • Regional boards of education developed 10-year plans
Promoting best practices for the commercial use of biodiversity	Union for Ethical Biotrade (UEBT), founding members • Private sector: Natura, Aldivia, candela, Cocoamarket, Firofarma, Labfarve, organic partners, Peruvian nature, Nativa, PhytoTrade Africa, Sustainway, pi environmental consulting • Inter-governmental: United Nations conference on Trade & Development, international finance corporation, United Nations Foundation • Governments: PromPeru • Education and research: Paraiba state university • Nonprofit organization: International Union for the Conservation of nature	• Codified and disseminated certification processes • Debated best practices regarding the practical challenges of working with traditional supplier communities (e.g., how to ensure children could attend school and acquire traditional knowledge, how to help communities preserve their culture and traditions while adopting modern quality standards) • Formulated policy recommendations, for national governments, concerning the sustainable commercial use of biodiversity
Developing commercial opportunities for suppliers	• Other companies (e.g., Swiss chocolate makers, food and agribusiness companies in California, another Brazilian cosmetics company) • Business associations (e.g., Cabruca and Cofruta cooperatives) • Local vocational and agricultural schools • Nonprofit organizations (e.g., Jari Foundation)	• Codified communal knowledge of ingredients through school projects • Implemented alternative school schedules around harvesting time • Sold chestnut-based cooking oil, artisanal products, buttons, cakes for school meals; produced own chocolate • Reduced suppliers' dependence on Natura • Improved quality standards for ingredients

In what follows, we therefore examine how Natura became one of the lead architects of such a polycentric system–counterintuitively, by fading into the background.

4.2.1 | Elaboration of rules in direct sales

Natura's educational initiatives, a crucial direct sales component of its OII, were initially developed in partnership with the Abrinq Foundation as part of the *Crer para Ver* program. Although Pattern 2 suggests that Natura should have let Abrinq take the lead in that initiative, Natura itself convened multiple partners for these projects at the local level (see Table 5 for some examples). Those partners included schools, grassroots organizations, and entrepreneurship coaches in addition to Natura's consultants.

In particular, Natura solicited a high level of participation from its consultants in the *Crer para Ver* program as part of the company's efforts to create projects that were more locally embedded. One manager recalled: "We wanted to do more than just donate a percentage of our revenues for educational projects. We wanted our distributor agents to participate and feel co-responsible for this cause." In contrast to Ostrom's design principles, the firm's female consultants had limited power and therefore no formal recognition of their rights over community development processes, compared to the mayor or councilmen for example. They did, however, have strong connections and a deep-seated understanding of their communities' needs. To encourage the participation of these consultants, Natura's first task consisted of improving their capacity to harness those strengths so that they could become change agents within their communities. According to a senior manager at Natura,

> [w]e educate them for citizenship and to guarantee their sustainable development. We train them so they can manage their own business … but … also explain what voting "conscientiously" is without favoring any given party, for example.

Natura's agents were thus empowered to play an essential role in deploying the company's resources within their communities. Hence, not only did the consultants participate in raising funds for locally embedded projects by contributing their commission on *Crer para Ver* products but also the projects themselves emerged directly from the local communities: "If you have an idea for a project," one consultant said, "you go talk to your orienting consultant [a peer with greater sales experience who is asked to help a group of consultants within a geographic area] and she will help you develop the idea and pass it upwards."

Natura's role in enabling very different types of actors to partner in addressing issues of mutual concern—in particular, voids in market-based institutions that affected them all—was also evident when the firm began supporting school boards' efforts to develop 10-year plans. In fact, Natura built a conference center at its headquarters for the specific purpose of hosting conferences and workshops of this type. In discussing those efforts, Natura's HR director stated that "what we do is try to bring in counterpoints and people to confront each other and generate some credibility and start to think about these issues." Thus, Natura helped empower both marginalized voices within local communities and local representatives whose directives typically came from the Ministry of Education, to take part in the elaboration of rules for governing its OII.

By drawing on the processes and best practices developed this way at the local and regional level, Natura gradually scaled up its educational initiatives to the national level, in keeping with Ostrom's design rule around the importance of nested governance. Natura rapidly increased the impact of its *Crer para Ver* program via several other partnerships in addition to Abrinq, reaching 450,000 individuals in 5,690 schools from 3,560 municipalities (2010 annual report). Building on that success, in 2004 Natura worked with Abrinq to create a database of 12,000 schools at which adult education classes were offered by the government (which had itself been unable to drum up a sufficient number of participants) and then to disseminate that information. This effort involved the mobilization of about 422,000 consultants, who were asked to identify and register participants. Natura ended up enrolling 162,000 participants by 2008.

Yet, this success is surprising in light of Pattern 2, which would lead one to assume that no private sector firm, such as Natura, would have the legitimacy to bring these parties together. Aware of this limitation, Natura proceeded neither by taking the lead on joint initiatives nor by imposing its own (private) objectives. Instead, the company saw its role as fostering dialogue so that the resulting initiatives could become self-organizing. This approach was described by a Natura HR executive as follows:

> It's important for us that we not be standard-bearers. ... We like to think of ourselves rather as the drummer boy; we organize the process in a totally transparent way. We're an invisible hand in this process, ... but we organize it so that the group becomes self-governing. We don't raise a banner saying "Natura wants this or that." We understand that there's an issue to be discussed and we bring together people to think about it.

The practical implication of proceeding in this manner was that educational projects were most often jointly managed with partners. For instance, Natura shared responsibility for selecting, planning, and implementing many of its educational projects with the Abrinq Foundation. Natura also was typically just one of several financiers donating money to projects or organizations (rather than the sole or even the leading sponsor), and a prime objective of its donations program was to strengthen civil society. As for the participation of Natura managers in the governance of associated organizations, they held decision-making roles in 36% of such cases but otherwise held purely consultative roles (2009 annual report). Whenever Natura did have a decision-making role, it was as part of a committee that included representatives from other organizations. So even though Natura staff have held leadership positions in each of the committees set up by the Brazilian Association for Direct Sales, they are all elected positions for which any association member (of at least 2 years' standing) can run. It is also worth noting that, despite Natura's having helped found that association in 1979, the firm's name is not cited in the constitutive documents.

This approach was not without drawbacks for Natura. The company recognized that serving mainly as orchestrator—or invisible architect—would translate into having less control over the process, as noted by a Natura HR Manager:

> We're not there to give our opinion, but we help articulate the discussion over time. We're not imposing our authority but rather trying to help people make a difference. Sometimes, they make decisions that go against our interests, but what we've learned is that we have to accept it.

This realization clashes with Ostrom's guidelines for resolving conflict between participants about the nature of rules both swiftly and cost effectively—guidelines that Patterns 1 and 2 both respect either through centralized control by the firm or collective action orchestrated by noncorporate actors. Natura's approach instead recognized that for a firm like theirs to orchestrate collective action across sectors would come with higher coordination costs and less control.

4.2.2 | Elaboration of rules in ecological sourcing

When Natura invested in community development funds as compensation for its use of communally held knowledge, the company thought that all community members should have a voice in how the monies would be allocated. This departs from what we would expect based on Pattern 1, predicting that the firm should seek to determine the rules governing access to its institutional infrastructure by exchange partners. Pattern 2 would lead us to expect Natura to turn the process over to the community directly or to ask a nonprofit or public intermediary to manage the process in its stead.

Delegating the management of community funds to local cooperatives was not an option. Cooperatives were unable to speak for the entire community, as other community members' interests were not always aligned with those of the families that harvested chestnuts, for example. As a result, cooperatives could not legitimately make decisions about whether, say, improving the pathways over waterfalls, or building a water treatment system, would most benefit itself, the entire community, or Natura.

Natura also found it impossible to turn the funds over directly to the community as a whole, as it rapidly discovered that community members did not all have the same right to participate in the process. Instead, some communities were dominated by a local elite or by entrenched ruling families that could easily appropriate the benefits of OII *without* allocating resources to long-term development projects capable of sustaining the institutional infrastructure in which Natura had invested. In one instance, it was proposed that funds be used to open a bar on one prominent family's land. The potential for such misalignment of interests within the community was compounded by its members' lack of management skills and by the inability of some extant collective institutions, such as an established community council, to govern the funds properly and to implement projects successfully (Greissing, Kohler, Le Tourneau, & Picanço, 2008; Greissing, Marchand, & Nasuti, 2009).

Natura underwent a trial-and-error process as it sought different ways to empower communities to make truly collective decisions about governing these funds, so that all members' rights to participate in the process would be equally recognized. It first hired a Brazilian anthropologist as a consultant, but consultancy fees increased the overhead for the management of community funds far too much. It also formed cross-functional teams to help design and implement community development projects, but they developed highly detailed blueprints that communities could not comprehend and were too intimidated to question.

For many years, then, no projects were developed, until Natura began a systematic mapping of communities' relationships with other organizations from different sectors. The firm then identified which of those could lend their expertise and help legitimatize Natura's efforts to connect with local communities, without taking over that relationship for them. Through the resulting dialogue-based processes, some communities decided to use the funds to (a) support the creation of workshops on community action and administration for the benefit of community members, (b) craft long-term development plans, and (c) certify their ingredients and processes. For example, the Iratapuru community used the funds to finance scholarships; one student who was thus able to earn a law degree subsequently negotiated the community's contracts with Natura.

While effective, this dialogue-based process was neither rapid nor efficient. One of the company's employees in the sourcing department acknowledged: “It's really complicated, because they're different interests. You have to sit down around the table … and define a positive agenda and what each party will do. And not every party moves at the same rhythm or accomplishes what it had said it would.”

However, rather than taking the lead in its relationships with their suppliers and their communities to speed up this process and avoid potential conflict, Natura chose to fade into the background to facilitate their collective self-governance over the longer term. Thus, one of the directors of the Cabruca cacao cooperative—which had benefitted from Natura's support since its formation 18 years before—acknowledged that

> [a] large part of this building was built with years of payments from Natura. The truth is, we should really call it the Natura building. But we don't and they know it. That's not the point for them. They're there in the shadows, but they know they did their part and we are the best proof of that.

Building on legitimacy and experience gained from its success with local communities, Natura then adopted a similar convening role on the national and even global stage, scaling up its efforts by nesting local collaborative initiatives within supranational ones. So, by 2002 the company had validated its methodology for certifying ecological ingredients through a partnership with Imaflora (a nonprofit institute) and Brazil's Federal Funding Authority for Studies and Projects. Then, in 2007 Natura became a founding member of the UEBT, a global nonprofit association spun off from the United Nations. Natura contributed financial resources as well as the experiences and data from its interactions with local communities. In addition, it delegated a representative to advise UEBT during our study period, yet without dominating its management.[8] Natura and UEBT's other members worked in concert to disseminate the voluntary certification process and created a manual to help companies implement the principles advocated by the Convention on Biodiversity.[9] By 2009, the union's methodology was being implemented throughout Brazil thanks to a series of national partnership initiatives (Table 5). It was on this basis that Natura then started collaborating with the Brazilian government to contribute to a new legal framework for sustainable sourcing in Brazilian biomes.

Thus, Natura's approach to establishing rules for governing its OII in direct sales as in ecological sourcing resulted in a lengthier process involving more extended dialogue and less control over projects than if it had either adopted a firm-centric approach (per Pattern 1) or waited instead for nonprofit or public organizations to take the lead (per Pattern 2). Yet, Natura's commitment to orchestrating multilateral cross-sector dialogue from the background ensured that other actors felt empowered to participate in collectively designing rules and for their right to do so to be formally recognized; nesting local governance initiatives of this type within (supra-) national initiatives allowed it to scale up the process over time. Hence, while the process was

[8]Three individuals were initially appointed to manage UEBT: the executive director was a Dutch former UNCTAD employee; the senior coordinator for policy and technical support also had a United Nations background; and the senior coordinator for Latin America was previously employed by Rhodia, Unilever, and Natura. See http://ethicalbiotrade.org/about-the-union/who-is-who-at-uebt/ (accessed September 23, 2015). In 2002, 2007–2008, and 2010, representatives from Natura were elected by the union's General Assembly to positions on the UEBT Board of Directors but not on the union's standards or membership committees.

[9]https://www.cbd.int/history/ (accessed April 29, 2019)

more time-consuming than Ostrom's design guidelines would recommend, the outcome achieved was ultimately aligned with those principles.

4.3 | Monitoring and sanctions: how are rules enforced?

In accordance with Ostrom's last two design principles, Patterns 1 and 2 both rely on strict monitoring and sanctions to deter users from breaking the rules about accessing institutional infrastructure. In the first pattern, the firm ensures that its own private interests are not infringed upon by its partners. In the second pattern, noncorporate bridging actors ensure that corporate interests do not infringe on the public's. Natura's approach, in contrast, relied on relational norms around the alignment of public and private interests, to negate the need for monitoring and sanctions. This approach derived directly from the founders' vision of the role of business in society, according to which "the company, as a living organism, is a dynamic set of relationships. Its value and longevity are linked to its capacity to contribute towards society's evolution and sustainable development" (2006 annual report). Beyond public proclamations of this philosophy, the company's behavior toward its consultants and suppliers can shed light on how these relational norms were enacted in practice.

4.3.1 | Relational norms in direct sales

Natura saw the relationship with its consultants as a symbiotic one and its own investments in their well-being as enlightened self-interest. As one Director explained, "Natura's social sustainability approach is sincere, but we don't do it just to be good citizens. Doing this is good for Natura, because it's the people [benefitting from our social initiatives] who sell our products." Table 6 provides examples of how Natura's interests were aligned with those of consultants, as well as their communities and Natura's competitors.

Thus, the consultants we interviewed consistently emphasized that they viewed Natura not as their boss or their benefactor, but as a partner. The relationship was a way for them to be independent and to avoid the exploitive working conditions to which they had become accustomed; at the same time, Natura's success was intimately tied to their own. As one consultant explained:

> [the relationship with Natura] is a partnership. You sell products and you pay on time, you get more points and you get to order more. If you do things right, you can become an "orienting consultant" and organize the meetings and all. You earn a fortune, they pay super well. But the orienting consultants are partners too, we're all friends, everybody helps everybody out. They do whatever they can to help us.

At times, ensuring the well-being of its consultants confronted the firm with trade-offs vis-à-vis its own profits. As Brazil's economic development accelerated during our period of study, alternative distribution channels—including online retail and dedicated stores in shopping malls—became more viable. However, Natura was concerned that multichannel distribution might "cannibalize" consultants' sales. Hence, it delayed such expansion and instead opted for a gradual integration of sales channels; this approach included creating an online platform on which its consultants could set up their own Web stores.

TABLE 6 Alignment of public and private interests in Natura's partner relationships

Relational norms protecting the alignment of public and private interests	Benefits for Natura	Benefits for consultants and suppliers	Benefits for actors without commercial ties to Natura
OII for direct sales			
If you go to a shop, you have to pay straight away. My consultant can give me a catalog and she can give me time to pay off my purchase (Natura customer)	Greater sales	Greater sales	Increasing the population's purchasing power
We understand that we have to transform these (social) challenges into business opportunities so this generates revenues, rather than the opposite. It's not about sustainability within our business. It's about our business being sustainable. (HR director, Natura)	Long-term growth in revenue	Long-term growth in revenue	Overcoming social challenges and promoting sustainable development
There are a series of opportunities for dialogue between Natura's platform for relationships with distributor agents and the commercial areas. Whether it's about our commercial strategy, product sales, or other topics including sustainability in all these areas. (consultant relationships manager, Natura)	Local knowledge for product development and sales	Higher sales of locally adapted products	Promoting local economic growth and sustainable development
OII for ecological sourcing			
Extractive communities are … selling the traditional knowledge associated with ingredients that's been developed over decades or even centuries and deserves a fair return. So we've got to ensure that this financial return that we provide helps the community develop, that it be used to address structural issues and not be wasted. … It's about how we ensure that the compensation for traditional knowledge benefits this communities so as to effectively promote its development (distribution & customer service director, Natura)	Access to communal knowledge about ingredients for the Ekos line	Economic benefits; intellectual protection for community knowledge	Preserving indigenous culture and traditions; promoting sustainable development

TABLE 6 (Continued)

Relational norms protecting the alignment of public and private interests	Benefits for Natura	Benefits for consultants and suppliers	Benefits for actors without commercial ties to Natura
The Amazon is a very extensive world with very complicated logistics, so if you have local partners who are interesting and competent, it's important for us to establish partnerships. There no need for us to internalize all types of knowledge within Natura (eco-relationships manager, Natura)	Lower cost of sourcing knowledge than through internal development	Revenues from becoming formal suppliers for Natura	Greater sharing of knowledge about Brazilian biomes
The community decides what's important for them, for the preservation of the forest and for the team. And there's no possibility of buying a Ferrari and parking it in the middle of the jungle (HR director, Natura)	Preserves the sustainability of the supply chain	Self-governance and sustainable development	Environmental protection

This prioritization contrasts with Avon's early approach to its consultants, for instance, who had to pay for stock in advance and were charged (during the 1990s) a 35% interest rate on late payments. One consultant reported: "The time comes to collect payment. You ask, 'Where's what's-his-name?' and he's gone. Then you have to take out a loan to pay Avon."[10] Such circumstances affected some families' credit ratings and compromised their access to government assistance (Chelekis & Mudambi, 2010).

In the end, however, Natura's emphasis on the long-term relationships with its sales consultants reduced the need for monitoring and sanctions. Among these benefits was a record low default rate (1.5% in 2009): in only a few instances did consultants fail to reimburse the company for products. As a Natura "relationship manager" explained:

> One of the factors that explains our low default payment rates is that our agents have a relationship with a real person from Natura .... [She] has been to your house and knows you and your style. So, she'll explain how you should do things; if you don't pay for a delivery, she'll help you out before it becomes a problem.

Natura's emphasis on relational norms also resulted in higher retention rates than for other direct sales companies worldwide (2009 annual report). In fact, a former Senior Executive at Natura explained that a direct sales force is typically expected to exhibit a turnover rate ranging from 20 to 25% annually. During the time of our study, Natura's annual turnover was 15%—in contrast to Avon's, which (in Brazil) was reportedly closer to 35%. This difference accords with

[10] http://articles.chicagotribune.com/1993-10-03/news/9310030143_1_avon-ladies-hut-gold-mines (accessed January 20, 2017).

the comments of a consultant with 20 years of experience working with Natura: "I've sold Avon products before in the past, and earned lots of money with them, but it's just not as good as working with Natura. I only work with them now."

Overall, then, despite contradicting Ostrom's last two design principles, de-emphasizing both monitoring and sanctions in favor of relational norms enabled Natura to benefit from better sales outcomes.

4.3.2 | Relational norms in ecological sourcing

These kinds of approaches–tight monitoring and harsh sanctions–were also eschewed when it came to Natura managing its relationships with supplier communities. As one of Natura's managers for ecological relationships explained:

> We can't show up and say "you're not following the contract to the letter so we're going to put an end to it and find another partner." If we switch partners often, we won't be able to contribute or collaborate much. So, it's a different type of partnership, we have to find harmony with each other to attain shared objectives.

Instead, Natura consistently reinforced norms around doing what was best for all of the participants in a relationship. As the director of one cooperative explained in reference to Natura,

> They're our partners. We make sure they get credit as such. But they're not that company that's going to come in and use you. They're not going to say "we financed you, we did this or that, you only did well thanks to me."

Table 6 provides examples of how these shared objectives were met for suppliers, competitors, and communities as well as for Natura. However, for these relational norms to persist, Natura had to demonstrate, throughout the duration of these relationships, that it would look after its partners' well-being and remain invested in the long-term sustainability of the OII it had built. For example, in 2003–2004, Natura received orders for 30% more of a passion fruit-based cosmetic than it could produce using available amounts of ingredients. "We went back to the local community that sourced the passion fruit and asked them to increase production," a company manager said. The community refused, arguing that such an increase would compromise their future harvest. Instead of pushing back, he added, "we decided to take the loss on our sales, and tell the markets that we wouldn't be able to meet demand because we had no more raw materials available and weren't willing to buy it from producers we hadn't certified … [or to risk] … harming the ecosystem."

Moreover, such tradeoffs weren't isolated events. In fact, Natura often had to make concessions to their partners to preserve those relational norms over the long term, since they were locked into their relationships with communities and could not rely on formal sanctions such as cutting off their ties. Former Natura CEO Alessandro Carlucci thus recalled one instance[11] where Natura was expecting a shipment of chestnuts from one of the communities:

[11] https://www.youtube.com/watch?v=sJSY__TJQf0 accessed 15th October 2019

> (They) decided they were tired, and it was not a good week to extract the chestnuts. And that's it, you can't do anything. The easy way to answer that is "let's cut this community and try to buy from another one." But instead you need to say "why did you decide not to work, what can we do to motivate you to do better?" You have to recognize that you don't have all the answers and need to learn from the other partners.

Furthermore, preserving these relational norms remained a key concern when Natura sought to discontinue the sourcing of some ingredients, as product life cycles are short in the cosmetics industry. But given the collective nature of the production process, not renewing a contract could harm entire communities if they lacked alternative partners. In fact, even with Natura's policy of not buying more than 30% of any community's harvests, the company was cautious about the long-term repercussions of loss of revenue and avoided putting an end to relationships as much as possible. As the director of a cooperative with a long-standing relationship with Natura explained,

> [w]e're no longer selling cacao to Natura because they've created a whole production unit closer to the Amazon. We haven't sold cacao to Natura in five years as a result, but every year we get a check from them because that product was created with our legacy, with our technology, with our cacao. Both us and Natura's current cacao producer.

While these tradeoffs had important costs, the relational norms that persisted as a result made monitoring and sanctioning less of an issue, however, because partners then cared more about the relationship. Although Natura's commercial partners could (and did) work with other companies, much as in the case of direct sales, they preferred to work with Natura because they knew the company would look out for their interests. As described by one manager,

> [t]he advantage of having a direct relationship with communities is that we reduce the number of intermediaries and manage to add more value to the community because you can invest in them what you save on the intermediary's fees. But at the same time, you can also plan your harvesting better, [and] your supplies, get better-quality tracking, and [can] oversee the whole process.

Meanwhile, another manager commented that

> [h]aving a nice value proposition … and a participatory approach … leads [our partners] to perform a lot better when working with us than with a company that has a traditional client–supplier contract where they buy from you and that's all.

Hence, prioritizing strong relational norms around the alignment of public and private value creation ultimately ensured that all participants in Natura's OII continued to respect the rules they had collectively established for its governance, without the need for strict monitoring or sanctions.

4.4 | The firm as an architect of polycentric governance for building an OII

Our analysis leads us to conceptualize Natura's forming of CSPs to address voids in market-based institutions as a novel approach that we refer to as building an OII. This approach is based on the counterintuitive notion that private sector firms invest in forming institutions that are deliberately engineered to address a broad range of institutional voids and which benefit actors *besides* the firm, its commercial partners, and direct stakeholders, irrespective of the extent to which those other actors contribute. To ensure that this OII can thereafter become self-governing over time, the firm must then empower cross-sector partners whose development and participation they enable within multilateral agreements ranging from the local to the (supra-) national level. Finally, despite the tradeoffs incurred by promoting relational norms that support the alignment of public and private value creation with its partners, the firm can avoid the need for extensive monitoring and enforcement of sanctions as a result, as well as benefit from relational rents that can bolster its competitive advantage. This characterization can be embodied in the following pattern that reflects this novel approach:

Pattern 3 *A firm will address voids in market-based institutions by building an open institutional infrastructure (OII); this OII is accessible to a broad range of participants beyond the firm's exchange partners, is governed by a set of rules that are jointly defined within multilateral, cross-sector partnerships established by the firm, and is protected by relational norms aligning public and private value creation.*

In addition to being detailed in Table 1, the tenets of this pattern are also depicted graphically in Figure 2. This figure shows that the extent to which building OII can enable firms to address voids in market-based institutions will be contingent on the way in which rules for governing it are elaborated and subsequently enforced.

This approach departs significantly from prior pathways investigated in the strategic management literature, and which we have compared in light of Elinor Ostrom's design principles for the polycentric governance of commonly held resources. It affords the firm considerably less

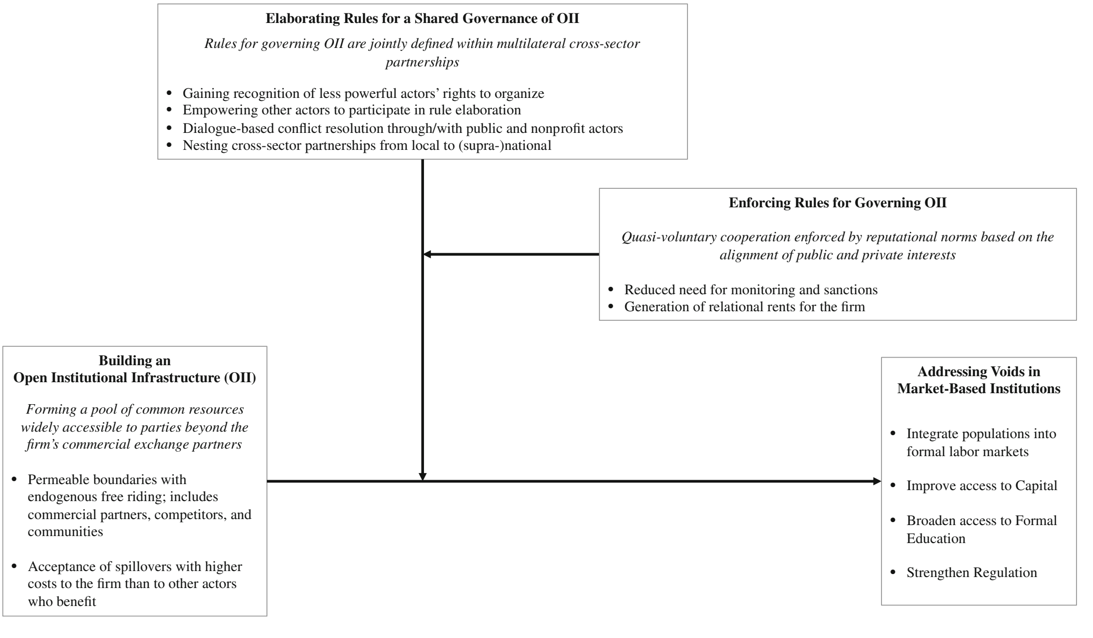


FIGURE 2 Building an open institutional infrastructure through polycentric governance

control than the approach that consists of building a closed institutional infrastructure primarily for one's own benefit, which relies on a centralized process for defining the rules governing that institutional infrastructure, tight monitoring, and harsh sanctions in case of misuse. However, its impact may be greater in the longer term, as the approach we identify can lead to self-governing initiatives and symbiotic value creation for the firm and society as a whole—rather than risking potential stakeholder backlash and loss of the firm's social license.

This approach also differs from more "other-oriented" approaches in strategic management, where firms join noncorporate partners who take the lead in building elements of shared institutional infrastructure. Such an approach is likely much easier from the firm's perspective, as it can leave the role of orchestrator to those with greater legitimacy (and likely experience) to do so. However, the approach we introduce can provide greater agency on the part of corporate partners to address voids that critically undermine their business operations, and who may be equally well placed to orchestrate such a process if they are willing to empower others to govern collectively. In such cases, we show that private sector relationships, financial support, and expertise may be highly necessary catalysts for collective action.

5 | DISCUSSION AND CONCLUSION

Our paper sheds light on new ways in which firms can address voids in market-based institutions, namely investing in OII through a polycentric governance model that empowers other actors to jointly build institutions through CSPs. It makes an empirical contribution by drawing attention to the benefits of applying pattern-matching techniques to longitudinal case studies of single organizations and to phenomenon-based research more generally. Using Greenwood et al. (1994) as inspiration, we show how these techniques can be applied to a markedly different type of research setting (viz., the supply chain of a Brazilian cosmetics company rather than a merger of Canadian firms) and literature (a nonmarket, institutional strategy rather than a corporate strategy).

Furthermore, we believe that our findings can also help advance strategy research by promoting new forms of organization (Puranam, Alexy, & Reitzig, 2014) in which expanded boundaries allow firms to tackle more ambitious goals (e.g., addressing voids in market-based institutions). The findings that we document answer calls (as from Dorobantu et al., 2017) to develop a more complete understanding of the differences between approaches led by corporations, multilateral agencies, or governments (London & Anupindi, 2012; McKague et al., 2015; Parmigiani & Rivera-Santos, 2015). We go a step farther and show how those three approaches can be successfully combined by a firm that is willing to serve as a bridging organization (Mair et al., 2012; McDermott et al., 2009) or as an institutional intermediary (Dutt et al., 2016)—roles traditionally reserved for public and nonprofit actors (Bode et al., in press). This demonstration should advance the concept of a "multisectoral" paradigm of socioeconomic development (Brown, 1991). It also establishes that, in transforming institutions, firms can take on a more active and central role than portrayed by many existing studies (e.g., Mair et al., 2012; McDermott et al., 2009). A firm can also adopt that approach without, as too often occurs, provoking the ire of nonparticipants or becoming riven by political contestation (Dorobantu et al., 2017).

As a result, our findings should inform ongoing efforts to build a bridge between Ostrom's work and strategic management (Dorobantu et al., 2017; Gil & Baldwin, 2013). In the body of this paper, we focused on contrasting three approaches from strategic management to one another in light of Elinor Ostrom's design principles for governing commonly held resources. We now review how they compare, no longer to one another, but rather to Ostrom's polycentric solutions as a whole. All three patterns exhibit both important similarities and notable differences with Ostrom's design principles, pointing to the tradeoffs that must be made when corporate actors adopt different roles in the management of commonly held resources.

Per Table 1, Pattern 1 leverages certain design principles (i.e., strict boundaries restricted to exchange partners, rapid and low-cost conflict resolution mechanisms and tight monitoring) in such a way as to reinforce the control exerted by the central firm. However, this corporate control goes hand in hand with other characteristics of the approach embodied by Pattern 1, which rather clash with many of Ostrom's design principles (i.e., benefits accruing primarily to the firm, power imbalance and limited opportunities to contest the firm's rules, centralized coordination and harsh sanctions towards partners).

Pattern 2 holds may more similarities with Ostrom's polycentric solutions, given that "public entrepreneurs" play the role of bridging actors rather than the firm. However, we emphasize the downsides from the firm's perspective, namely, the more limited scope of involvement and potential exposure to harsh sanctions if seen to represent private interests.

Pattern 3 diverges in the method but in many ways not the spirit of Ostrom's polycentric solutions. As per our earlier characterization of Pattern 3, the approach embodied by Natura requires greater efforts to achieve collective action because it is spearheaded but not controlled by the firm. The lack of clearly defined boundaries and disproportional benefits of the resulting OII may make this approach more viable for intangible commons (e.g., market-based institutions, culture, the internet) than for tangible ones such as those more often studied by Ostrom (e.g., forests, fisheries, irrigation). Yet, if polycentric governance is successful when it creates complexity but not chaos (Ostrom, 2010), then our paper arguably offers a socially complex yet demonstrably effective strategy for a firm's successful operation in emerging markets.

Hence, in addition to furthering our understanding of market-based institutions as commonly held resources, our paper identifies the different types of governance implications (and tradeoffs to be made) when corporate actors play a central role and when collective action involves very different stakeholders with little or no preexisting trust.

5.1 | Limitations and generalizability

We realize that this study's limitations may hinder generalizing its conclusions to other contexts. Our findings are based on a single case study of a company chosen for its distinctive approach to doing business in Brazil. Would these findings hold for other types of firms and in other countries? We believe that at least some aspects should be applicable beyond Natura.

Given that Natura has been both a very small and a very large player—and has also been both a privately held and a publicly listed firm—it is certainly conceivable that some of its practices could be applied in other types of companies. Even multinationals may need to adopt the type of strategy that Natura so successfully implemented if they are to incorporate emerging markets into their value chains. More specifically, they must learn to engage with a "range of actors that contribute to influencing and shaping global production, such as national governments, multilateral organizations, and international trade unions and non-governmental organizations" (Barrientos et al., 2011, p. 321). This possibility should be tested.

Could Natura's approach be implemented in other countries? Emerging markets have in common that they offer tremendous opportunities for economic growth despite voids in market-based institutions. While each country is unique, such situations should be conducive to building OII successfully in other emerging markets, beyond Brazil. However, *subsistence* economies suffer from even more severe voids in market-based institutions—albeit of much the same type as those in emerging markets (Parmigiani & Rivera-Santos, 2015). In a subsistence context, the costs of building an OII may be more difficult to justify because the benefits take longer to materialize.

Notwithstanding the advantages of countries with a high level of economic development, they can still encounter gaps in market-based institutions that make it worthwhile for at least a subset of firms operating there to consider the OII approach. For instance, some firms may need to invest in building an OII in certain types of locales (e.g., underserved communities, derelict industrial regions) or at specific times (e.g., following natural disasters). Building OII may also prove to be useful to firms in nascent industries or to companies that focus on innovation. Some innovations require public investments in physical infrastructure (e.g., dedicated tracks for high-speed rail) or new types of skills (e.g., data analytics), and in nascent industries innovations such as the sharing economy or driverless cars may undermine existing regulations or call for new ones. So when expanding into new cities, companies like Uber and Lyft must consider whether the dominant strategy is to be a "first mover," entering a city to help modify its regulatory infrastructure and enhance the legitimacy of ride sharing, or instead to be a "fast follower," entering only after a rival completes the hard work of establishing regulatory and social buy-in. Our findings suggest that the advantages of building OII might favor the former strategy and that the downsides of free-riding in such circumstances have been overstated.

In conclusion, we believe that this paper points to exciting ways whereby strategic management research can yield novel insights into new organizing forms in which the company plays a more central (but perhaps less visible) role in fostering cross-sector collaborations that seek to re-design institutions. We view these as fascinating opportunities for future work to push the boundaries of this research agenda and to increase its impact in the coming years.

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