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Stakeholder management in sustainable supply chains: A case study of the bioenergy industry

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Abstract

Engaging with stakeholders and managing their issues when striving for a sustainable supply chain (SC) is a significant challenge. Although most studies on sustainable supply chain management (SSCM) consider stakeholder management necessary, little is known about related stakeholder management practices in SSCM. Thus, this paper seeks to enrich the theoretical debate on stakeholder management practices in SSCM through a case study approach to bioenergy SCs in Chile. Based on 28 interviews with SC actors and representatives from the surrounding stakeholder environment, the deductive–inductive analysis reveals that stakeholder management combines different practices to discuss stakeholder concerns, address them, and evaluate the process at the SC's external and internal levels. We propose structuring these practices based on two dimensions: "practices to address stakeholder requirements" and "practices whereby stakeholders are integrated." The analysis' results indicate that although two-way communication with stakeholders can be seen as the core of stakeholder management, a certain willingness to learn and transform SC design is a prerequisite for true orientation toward stakeholder management in SSCM. Additionally, linkage development and local anchoring are practices used to obtain further legitimacy at the external level. Building on these findings, this study can guide practitioners in engaging with stakeholders and managing their issues across the SC.

KEYWORDS
bioenergy supply chains, collaboration, stakeholder engagement, stakeholder management, sustainable supply chain management

1 | INTRODUCTION

Companies around the globe are continually requested to meet the increasing challenges posed by a highly complex economy. Sustainability is among the most important goals to accomplish, as social inequality and ecological degradation continue to rise (Jakhar et al., 2020). Hence, the operationalization of sustainability requires a paradigm shift from focusing solely on maximizing profit to addressing companies' social and ecological performance goals (Meixell & Luoma, 2015). Companies specifically recognize sustainability and its high importance through their supply chains (SC). Considering that SCs contemplate the product from the initial processing of natural resources to the end customer, drawing attention to SCs is a step toward broader sustainability adoption (Ansari & Kant, 2017; Hofmann et al., 2014). Thus, sustainable supply chain management (SSCM) entails adopting more sustainable practices and facilitating more sustainable behavior in SCs (Ahi & Searcy, 2013).

In this regard, stakeholders, such as regulatory authorities, citizens, and nongovernmental organizations (NGOs), are crucial for SCs that are facing the challenge of becoming more sustainable, as they need to obtain their legitimacy to do business (Jakhar et al., 2020; Xu et al., 2019). Therefore, the literature proposes that activities to consider stakeholders can be labeled stakeholder management, and these are positive for the SC or any organization (Park-Poaps & Rees, 2010; Silvestre et al., 2018). Hofmann et al. (2014) suggested that stakeholder management as a function of SCs embraces reporting to and interacting with stakeholders. Ahl et al. (2018) mentioned that stakeholder management is critical for SC innovations in regard to understanding stakeholders' interests through knowledge exchange and communication. However, the authors provided no guidance on how stakeholder management can be conducted. According to Silvestre et al. (2018), stakeholder management refers to collaboration between firms and stakeholders in the form of multi-stakeholder initiatives. In most studies on SSCM, stakeholder management is considered necessary; therefore, the lack of research on certain stakeholder management practices in SSCM is perceived as a gap. Thus, the following research question is posed: How do focal firms use SSCM practices as part of their stakeholder management?

This study uses a qualitative case study approach to investigate bioenergy SCs in Chile to address this research question. A case study allows us to disclose a theoretical item and identify underlying causal relationships in a real-world setting. To achieve this, Ansari and Kant (2017) have called for more case studies in the SSCM field. At least two key reasons justify scholarly work on bioenergy SCs in Chile.

Although well-designed bioenergy systems promise several benefits and solutions (Dale et al., 2018; Hong et al., 2016), stakeholders have identified different social, environmental, and economic issues (e.g., competing land use between biomass production for food, material, and energy or loss of biodiversity) along with the SC in Chile and have demanded changes (Almonacid, 2018; Carranza et al., 2020; Gold, 2011). Thus, it is especially significant that the entire SC of bioenergy operations is carefully designed and managed while considering the companies' stakeholders and related "socio-environmental conflicts" (Buchholz et al., 2009; Carranza et al., 2020). Therefore, it can be expected that as focal firms, bioenergy producers need to establish practices to interact with stakeholders as part of their stakeholder management.

Furthermore, the research is also relevant, as stakeholder issues and SSCM are typically discussed within the context of Europe and North America. Data from emerging economies, including South America, are still scarce (Jia et al., 2018; Kumar et al., 2020). Hence, more research from the perspective of emerging economies is required and relevant (Morais & Silvestre, 2018).

The remainder of the paper is organized as follows. The next section provides the theoretical background and basic terminology. Next, the research method used to carry out the case study is elaborated. Thereafter, the results are described in more detail. This is followed by the limitations; a comprehensive discussion of the findings; and the conclusion, which complements the paper.

2 | LITERATURE BACKGROUND AND CONCEPTUAL FRAMEWORK

2.1 | SSCM and stakeholder (management) terminology

One way in which companies recognize the importance of sustainability-conscious behavior is through their SCs. Mentzer et al. (2001) defined SCs as "a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer" (p. 4). Adopting more sustainable practices and facilitating more sustainable behavior in SCs is considered SSCM (Ahi & Searcy, 2013; Seuring & Müller, 2008). Although several definitions have been provided for SSCM, most contain similarities (Ahi & Searcy, 2013). We follow the well-cited definition of SSCM provided by Seuring and Müller (2008): "the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements" (p. 1700). This definition emphasizes that stakeholders play a crucial role when seeking a more sustainable SC because, inter alia, their legitimacy is required for successful business operations (Meixell & Luoma, 2015; Xu et al., 2019). We view legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574).

However, multiple definitions of stakeholders exist. For example, Freeman (1984) defined stakeholders as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (p. 25). In the context of sustainable SCs, governmental bodies, NGOs, associations, residents, consumers, or citizens are merely a few examples of possible stakeholders (Busse et al., 2017; Meixell & Luoma, 2015). Stakeholders vary in many respects—for example, in regard to their interests and roles (Gualandris et al., 2015; Jakhar et al., 2020). Some stakeholders may hope for the firm's success (e.g., employees and customers), while others may not mind failure (e.g., competitors) (Hofmann et al., 2014; Shubham, Charan,, & Murty, 2018). The literature has proposed that activities to consider stakeholders can be labeled as stakeholder management, and these have a positive effect on SCs or any organization (Park-Poaps & Rees, 2010; Silvestre et al., 2018). Although effective stakeholder management is considered to lead to reputation gains, higher financial performance, and competitive advantage (Ruf et al., 2001; Xu et al., 2019), the understanding of stakeholder management and related management practices remains vague (e.g., Ahl et al., 2018; Chowdhury et al., 2019; Silvestre et al., 2018). The following section elaborates on practices related to stakeholder management in SSCM with regard to vagueness.

2.2 | Stakeholder (management) practices

Several SSCM studies address the question of how a sustainable SC might be achieved (Pagell & Wu, 2009; Seuring & Müller, 2008) and even what a genuinely sustainable SC means (Gold & Schleper, 2017). Integrating sustainability thinking into SCM activities requires modifying company culture, the organizational behavior of all SC members, and cooperation with new actors (Pagell & Wu, 2009; Svensson et al., 2018).

However, there is a gap in the research on the relative importance of integrating various stakeholders into SC decisions. These stakeholders are typically marginalized or are ignored by traditional SCs (Busse et al., 2017; Shubham et al., 2018). Hence, SC actors should consider their relationships with the broader social and natural environments, as sustainability also reflects the attainment of society's green concerns and welfare (Gold & Schleper, 2017; Jakhar et al., 2019). For Pagell and Wu (2009), sustainable SCs should be reconceptualized to include NGOs, community members, and even competitors.

Beske and Seuring (2014) followed Pagell and Wu's (2009) recommendations and developed a conceptual framework that integrates various stakeholders into SSCM. In this vein, external stakeholders, such as NGOs, are regarded as pressure groups. Thus, companies should adopt risk management practices in the form of standards and certifications to monitor environmental and social issues and avoid sanctions and stakeholders' disapproval (Seuring & Müller, 2008). Sustainability-engaged companies should also be proactive by adopting innovative products and services based on internal and external stakeholders' requirements.

Further studies have put forward Beske and Seuring's (2014) research on SSCM (e.g., Mathivathanan et al., 2018; Sauer & Seuring, 2017). For example, Sauer and Seuring (2017) identified shortcomings regarding the institutional context of SCs and extended it to a deeper consideration of governmental and local actors. Although these prior studies acknowledge the relative importance of stakeholders to SSCM, there is limited knowledge of how stakeholders can be considered in SC decisions to enhance sustainability performance.

By taking into account the reviewed literature, we argue that stakeholder management refers to a set of management practices (e.g., Beske & Seuring, 2014; Liu et al., 2018; Silvestre et al., 2018), and we categorize these as internal and external practices. These twofold dimensions integrate stakeholders' requirements in terms of sustainability and SC decisions. While internal practices addressing stakeholders' requirements come from the focal firm, external practices are outside the focal firm's direct areas of control. In this frame, stakeholders include both traditional and nontraditional SC actors. Thus, the literature proposes management practices whereby stakeholders' requirements are addressed to mitigate related risks and maintain or increase legitimacy (e.g., Beske & Seuring, 2014; Hofmann et al., 2014).

Stakeholder management embraces processes that are used to learn and acquire from and share knowledge with stakeholders to achieve sustainability-related improvements and solutions and minimize risks from pressure groups (Beske & Seuring, 2014; Pagell & Wu, 2009). Companies can adopt trust-building transparency, two-way communication, or knowledge transfer to increase their legitimacy, but such practices are restricted to communication instruments to address stakeholders' requirements (e.g., Gold, 2011). Reporting systems are a one-way communication instrument that is utilized to broaden, integrate, and improve traditional economic approaches to corporate performance measurement, and they take stakeholder needs and requirements into account (Meckenstock et al., 2015; Perrini & Tencati, 2006).

Sauer and Seuring (2017) identified linkage development in the SC for minerals as a direct (e.g., fiscal incentives to mining companies) and indirect (e.g., domestic demand driven by miners' income) contribution to the economic development and social well-being of the SC underlying the local region and stakeholders. These practices are particularly valuable in emerging or developing countries (Kumar et al., 2020).

Furthermore, companies can proactively integrate stakeholders into decision-making and business activities in an internal dimension—for example, selecting new SC partners—thereby building more sustainable SCs (e.g., Liu et al., 2018; Manzhynski & Figge, 2020) and achieving legitimacy (Hofmann et al., 2014; Xu et al., 2019). Similarly, Shubham et al. (2018) stated that engaging with stakeholders facilitates the joint development of innovations by enabling an enhanced understanding of the external environment through knowledge exchange and communication. Pagell and Wu (2009) showed that some sustainable SC managers re-conceptualize the SC by collaborating with nontraditional SC actors, but they missed the opportunity to identify and characterize collaboration practices in detail.

Nevertheless, studies have shown that companies can collaborate with stakeholders in regard to the external dimension of the SC because of their capacity for valuable knowledge and resources (e.g., Oelze et al., 2016). On the one hand, stakeholders can be assets by identifying, mitigating, and solving risks along with the SC; enhancing internal SC transparency; and monitoring suppliers (Busse et al., 2017). On the other hand, in their empirical study, Liu et al. (2018) pointed out that stakeholders can play valuable roles in the process of supplier development.

Together, these studies indicate a need to understand the various perceptions of stakeholder integration in research on SSCM practices. In Table 1, we show the identified deductive practices of stakeholder management mentioned in the reviewed literature on SSCM. These were inductively complemented based on the analyzed empirical material.

2.3 | Bioenergy as a field of application

Biomass has significant potential to overcome the shortcomings of fossil fuels and works as a substitute for heat, power, and chemical production (Ahl et al., 2018; Dale et al., 2018). While well-designed bioenergy systems have several benefits and provide solutions to

TABLE 1 Inductive and deductive derived structural dimension and analytical stakeholder management practices

Categories and assigned practices	Description
Practices to address stakeholder Requirements	
Internal	
Transparency by one-way communication Two-way communication Evaluating stakeholder relationships[a] Technical or organizational transformation[a]	Addressing stakeholders requirements at the internal dimensions centers on transparency through one-way or two-way communication but also immediate technical or organizational transformation of internal processes (e.g., changed sourcing/production strategy) to maintain or gain legitimacy (Beske & Seuring, 2014; Hofmann et al., 2014; Perrini & Tencati, 2006; Shubham et al., 2018). Further improvements can be subsequently detected by evaluating stakeholder relationships.
External	
Linkage development Educating stakeholders[a]	External practices target directly or indirectly the development, resilience, and well-being of the local region and its stakeholders, for example, through linkage development or the support of local organizations (Ahl et al., 2018; Sauer & Seuring, 2017).
Practices whereby stakeholders are integrated	
Internal	
Standards and certification[b] Selecting SC partner Joint development Re-conceptualization Learning[a] Local anchoring[a] Assessment of supplier[a]	Integrating stakeholders in internal activities tap knowledge and further resources when, for example, selecting SC partners or assessing existing suppliers and striving for standards and certification. Also, SC re-conceptualization by cooperating with competitors, local communities, or other new SC-partners facilitate joint development or (innovative) learning (Gualandris et al., 2015; Manzhynski & Figge, 2020; Oelze et al., 2016; Pagell & Wu, 2009; Shubham et al., 2018; Svensson et al., 2018).
External	
Standards and certification[b] Selective monitoring Supplier development	Stakeholders can turn into valuable partners that support external processes for the development, the selective monitoring of suppliers, or certifying them and detecting further risks along with the SC (Busse et al., 2017; Gualandris et al., 2015; Jakhar et al., 2019; Liu et al., 2018).

[a]Inductive-derived practices.
[b]The item "standards and certification" appears twice because it is considered as relevant for the internal and external levels.

fossil fuels shortcomings (Dale et al., 2018; Hong et al., 2016), different social, environmental, and economic issues communicated by stakeholders along the SC can be identified SC (Almonacid, 2018; Carranza et al., 2020). Despite the land use competition between biomass production for food, material, and energy, multiple studies point to the crucial role of the (sufficient) supply of biomass (e.g., Flores-Fernández, 2020; Hong et al., 2016). Moreover, carbon emissions and noise pollution due to transportation are problems to be considered in regard to bioenergy SCs (Almonacid, 2018; Buchholz et al., 2009). Because these issues affect stakeholders, they put pressure on companies. Gold (2011) claimed that stakeholder management "[…] plays an outstanding role for bioenergy chains […] thus ensuring their license to operate in the middle and long term" (p. 455).

Chile provides an ideal setting for this research because it imports most of its energy in the form of fossil fuels, while its local biomass potential is poorly used. Based on its own limited fossil fuel resources, such as natural gas, hard coal, and oil, Chile needs to import these primary energy carriers (Flores-Fernández, 2020; Román-Figueroa & Paneque, 2015). The permanent shutoff of the natural gas supply provided by pipelines from Argentina exacerbates Chile's dependence on natural gas and is one reason for its critical and fragile energy situation (Flores-Fernández, 2020). Consequently, the pulp, paper, and wood industry has started to tap bioenergy since exploring biomass as a possible energy source. Owing to the expected side effects such as odor, increasing lorry traffic, and water scarcity, local governments and communities have demonstrated against new energy projects in the Chilean province of BioBío. For instance, the mayor of Cabrero (BioBío) protested against the construction of a bioenergy plant and rejected its planning application (Parraguez, 2014). The entire SCs of additional bioenergy operations have to be carefully designed and managed while taking into account the claims of company's stakeholders (Buchholz et al., 2009; Carranza et al., 2020). Using an SSCM perspective to address these challenges might be fruitful because it takes into account stakeholder sustainability concerns.

3 | METHOD

With the aim of theory elaboration, this research followed the design of a single case study with multiple embedded units of analysis (Ketokivi & Choi, 2014). The units of analysis were focal firms in the Chilean pulp, paper, and wood industry and their SCs, which produced energy as a by-product. Compared with large-sample theory-testing methods, case studies have the advantage of enabling closeness to a theoretical item and explaining underlying causal relationships (Hong et al., 2016; Siggelkow, 2007). Furthermore, evidence of the case study's value regarding the analysis of the bioenergy SCs can be seen in other research projects, such as those of Ahl et al. (2018) or Dale et al. (2018), wherein the authors interviewed stakeholders and experts. A comparative analysis between the empirical results and the theory allowed us to provide theoretical propositions, which was the

aim of this study. According to Eisenhardt and Graebner (2007), a case study requires a transparent research process. We followed Stuart et al.'s (2002) suggestion to define the research question; determine the research instruments and field; gather and analyze the data; and, finally, validate the research quality of the entire process (see Figure 1).

3.1 | Description of the research instrument: A case study

Because it enables an in-depth understanding of a specific and real phenomenon by using different data sources to gain knowledge for further interpretations and applications (Yin, 2018), the case study approach might be appropriate for analyzing stakeholder management practices in SSCM, especially in an emerging country setting (Stuart et al., 2002). It is especially reasonable for an analysis in which the boundaries between the phenomenon and its context are indistinct (Bryman & Bell, 2015; Yin, 2018).

This research was based on extensive fieldwork carried out on SCs in the pulp, paper, and wood industry in Chile from November 2016 to July 2017. While Chile has arguably only two big companies in the pulp, paper, and wood sector (when comparing turnover and owned forest area), we mainly focused the data generation on their SCs (PE1, PE6) and the related stakeholder environment (see Tables 2 and 3). To enable the possibility of contrasting the findings, we included one small-sized company (PE8). As suggested by Pagell and Wu (2009), we collected primary and secondary data from more than one company in each SC to enable a full understanding of the implemented SSCM practices (see Table 3). Regarding the primary data sources, it is worth noting that we first elaborated on and discussed the interview instrument with experienced SC researchers to ensure accurate data gathering in the empirical field. We also validated the interview instrument with biomass experts. Next, we asked some Chilean bioenergy experts to review the interview instrument, and together, we adapt it to the local culture and language. We also pretested the questionnaire with a sawmill CEO in Chile; this company produces energy from production waste (biomass). The resulting interview was not part of the final data sample. After the pilot phase, we conducted 28 semi-structured interviews with biomass SC actors and related stakeholders in Chile in Spanish (see Table 2) because the first author is fluent in Spanish.

The semi-structured interviews with various actors provided direct access to practical experiences and different views in the target field, leading to new ideas and useful insights by identifying what, how, and why certain events were taking place (King, 2004;

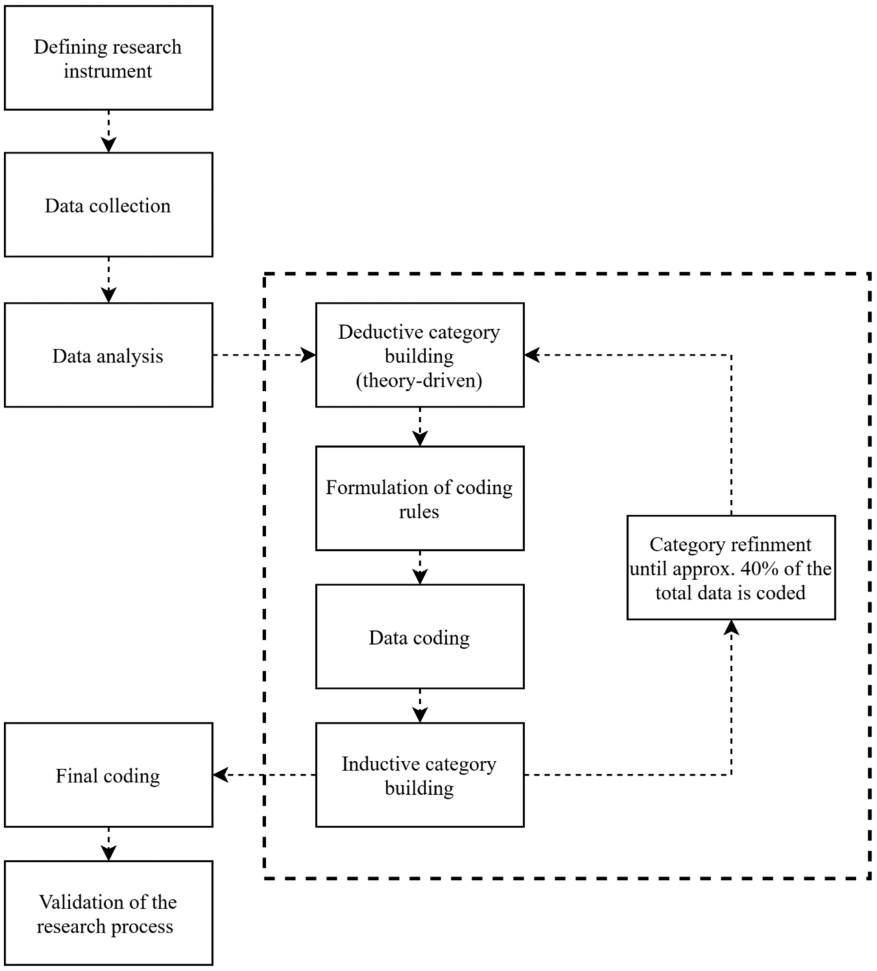

FIGURE 1 Process of data gathering and analysis process

TABLE 2 Overview of the data sample by interviewee position

Organization	N° interviews	Position of interviewee
Producer of energy (PE1)[a]	4	(PE1A) public relations manager, (PE1B) head of environmental development and risk management, (PE1C) head of raw material sourcing, (PE1D) manager of supply strategy, (PE1E) secondary material
Producer of energy (PE6)[a]	2	(PE6B) plant manager, (PE6C) head of sourcing, (PE6A) secondary material
Producer of energy (PE8)[a]	2	(PE8A) supply chain manager, (PE8B) head of R&D for products and processes, (PE8C) secondary material
Supplier (S1)	1	Plant manager
Supplier (S2)	1	Sub-manager for raw material supply
Supplier (S3)	1	Head of logistics and SC management
Supplier (S4)	1	Head of production controlling
Supplier (S5)	1	Head of sale
Supplier (S6)	1	Sub-manager of sales and development
Universities and research institute (U)	7	(UA) head of the chemical engineering department, (UB) professor of the wood engineering department, (UC) research professor at the faculty of forest sciences and natural resources, (UD) director of the chemical engineering department, (UE) research assistant, (UF) head of the environment area, (UG) executive director
Government (G)	1	(G1) regional ministerial secretary
Association (A)	3	(AA) vice president, (AB) project technical secretary, (AC) executive manager
Business consulting (CS)	3	(CSA) independent consultant, (CSB) project engineer, (CSC) project engineer
	28	

[a]For additional insights, these interviews were complemented with integrated reports.

TABLE 3 SC design of the interviewed companies

PE1	PE6	PE8
S2	S1	S3
S4	S3	
S5	S5	
	S6[a]	

[a]S6 is also a supplier of S2.

Yin, 2018). As proposed by Wolf (2011), we checked newspapers and business magazines to identify possible interview partners in the context of bioenergy SCs. Additionally, we selected contacts in cooperation with local project partners. Our primary purpose was to interview representatives in management positions and other influential decision-makers in the bioenergy field. One researcher audiotaped all face-to-face interviews with prior consent. While the interviews were conducted, the questionnaire was slightly modified to accommodate the interviewees' context.

As far as the secondary data are concerned, we took notes based on a series of site visits and considered additional documents provided by the companies whose employees were interviewed. Moreover, relevant information was collected based on three stakeholder workshops that we organized with the involved actors. The data were triangulated using different sources of information.

3.2 | Data analysis

After conducting the interviews, the audio recordings were transcribed according to specific rules that embrace the recommendations of Mayring (2015) and Bryman and Bell (2015) to guarantee the transparency and consistency of interview transcripts. The company names, brand names, locations, and particular practices mentioned during the interviews were anonymized. The total duration of the interviews was 30 h 40 min, which is equivalent to 564 pages of transcripts. Internal validity was ensured by returning summaries of the interviews to the interviewees and asking for their consent. Qualitative content analysis was used to evaluate the interview material. Kassarjian (1977) stated that content analysis should follow a clear and reasonable operational structure. Therefore, a five-step content analysis based on Mayring's (2015) suggestions was applied (see Figure 1). Following this abductive research logic (Kovács & Spens, 2005; Locke et al., 2008), the starting point was to derive deductive categories from the analyzed literature. To complete the resulting composition of categories, further items were added inductively when new issues were discovered while reviewing the material (see Table 1).

After the pilot phase was completed and the final coding scheme was determined, all primary and secondary material was coded, followed by a final reliability and accuracy check. We analyzed and

coded the collected data using the qualitative analysis software MAXQDA. This software was helpful into organizing the content in a coherent category/construct system. Two researchers independently coded all the material and then triangulated the findings to ensure validity.

3.3 | Reliability and validity

The research quality criteria of a case study are particularly important because its theoretical propositions might be questioned with regard to their generalizability, robustness, and testability (Eisenhardt & Graebner, 2007; Stuart et al., 2002). To ensure the quality of the whole research process, critical dissemination of the research findings—including the anticipation of valid and invalid criticism, the assurance of credibility, and the appropriateness of the research questions for the research method—is essential. Therefore, Table 4 summarizes the measurements and criteria that were applied during the research project.

TABLE 4 Research quality criteria

	Objective	Application
Construct validity	The degree of legitimacy to which the operational measures for the studied constructs are established	-interview guideline and deductive categories were based on sound theoretical frameworks. -the interviews' summaries were returned to the interviewees. -data triangulation (primary and secondary data)
Internal validity	The extent to which a particular claim regarding a causal relationship within a study can be proofed	-both the coding scheme and questionnaire were based on relevant scientific frameworks -multiple researchers were integrated within the design of the questionnaire, which was based on theoretical constructs. -the interviews' summaries were returned to the interviewees. -the results were discussed with practitioners and other researchers within Chilean stakeholder workshops
External validity	The extent to which a study's findings and its presumed causal relationships can be generalized	-cases consist of several internal and external actors from different SC stages. -due to abductive reasoning (Locke et al., 2008), analytical generalizability was striven for.
Reliability	The assurance of transparency and the guarantee that the study is replicable under consistent conditions.	-structured research process (Stuart et al., 2002) -definition of rules for the transcription and data analysis process followed the recommendations of Mayring (2015) -sound coding scheme was based on established theoretical constructs. -for the data analysis, different researchers, who did not gather data, were involved. -database and coding were completely done in MAXQDA.

4 | RESULTS

This section presents our case study results to illustrate how focal firms and their suppliers manage stakeholders and their issues while aiming for a more sustainable SC. The data were analyzed using abductive reasoning. Thus, constructs were taken from the literature and inductively enhanced. First, we show how focal firms and their suppliers address stakeholder issues at the internal and external SC levels. This is followed by an examination of the practices into which stakeholders are integrated to maintain or gain legitimacy. Tables 5, 6, 7, and 8 illustrate the condensed results of the conducted interviews. The columns on the left-hand side how (a) the number of coded items observed in the analyzed interviews, (b) the number of interviews in which the constructs could be detected, and (c) the number of companies that referred to the construct.

4.1 | Practices addressing stakeholders' requirements

Focal firms and their suppliers do business in a complex environment in which they need to consider several stakeholders' claims to gain or maintain their legitimacy. To achieve this, both focal firms and suppliers apply different practices at the internal and external SC levels.

4.1.1 | Internal practices addressing stakeholders' requirements

The data revealed that being transparent and communicating with stakeholders are the most dominant practices when it comes to

TABLE 5 Practices to address stakeholders (requirements) reported by companies

Category	Number of			Answer by company								
	References	Interviews	Companies	PE1 A,B,C,D,E	PE6 A,B,C	PE8 A,B,C	S1	S2	S3	S4	S5	S6
Internal												
Transparency by one-way communication	13	6	7	7 A,B,E	3 A	3 B,C	0	0	0	0	0	0
Two-way communication	37	12	7	17 A,B,D,E	7 A,C	4 B,C	3	1	0	0	3	2
Evaluating stakeholder relationships	5	4	3	1 A	2 A,C	1 C	0	0	0	0	0	0
Technical or organizational transformation	5	5	4	1 B	1 B	2 B,C	0	0	1	0	0	0
External												
Educating stakeholders	7	3	3	2 E	2 A	3 C	0	0	0	0	0	0
Linkage development	36	12	6	20 A,B,C,D,E	9 A,B	4 B,C	0	1	1	0	1	0

TABLE 6 Practices to address stakeholders (requirements) reported by stakeholders

Category	Counted/observed number of			Answer by stakeholder			
	References	Interviews	Organization	Association A,B,C	CS A,B,C	U A,B,C,D,E,F,G	G1
Internal							0
Transparency by one-way communication	0	0	0	0	0	0	0
Two-way communication	6	5	4	3 B,C	1 C	1 G	1
Evaluating stakeholder relationships	0	0	0	0	0	0	0
Technical or organizational transformation	0	0	0	0	0	0	0
External	0	0	0	0	0	0	0
Educating stakeholders	2	2	2	0	1 A	1 C	0
Linkage development	4	3	2	0	3 B,C	1 F	0

directly addressing stakeholder requirements stipulated by focal firms and their suppliers.

As Shubham et al. (2018) suggested, an ongoing discourse with stakeholders through *two-way communication* ensures that they are informed about their requirements and can facilitate efforts to meet them. All but one focal firm indicated that they failed to involve their stakeholders, such as communities, and that in the last decades, they have therefore come under increasing pressure from them (PE1D, PE8B, UG). Hence, the results show that all focal firms and four out of six suppliers apply *two-way communication* via different platforms or channels to maintain ongoing dialogue with their stakeholders (see Table 5). Thus, they can also be informed of the stakeholders' concerns and ideas for improvement through, for example, stakeholder workshops, personal dialogue with representatives, field visits, and open doors (e.g., PE1A, PE6A, PE8B, and S5). As one interviewee stated, "The primary objective is to engage with stakeholders through consultation and dialogue processes, open meetings and visits to company operations, thus fostering interaction, creating opportunities to learn about community needs, and receiving and taking in their concerns" (PE1E). Table 6 shows that multiple stakeholder groups have reported that they have been involved in the process of *two-way communication* between the operating companies and other stakeholders. Thus, we argue that *two-way communication* is essential for stakeholder management to discuss stakeholder concerns and might be a way to overcome the loss of legitimacy even beforehand.

Owing to *two-way communication* with stakeholders, the discussion of concerns sometimes needs to be addressed via *technical or organizational transformation* at the internal SC level. All focal firms and one supplier reported cases of *technical or organizational transformation* at the internal SC level to address stakeholder concerns. For example, stakeholders were negatively impacted by odor or noise (the technological improvement of production processes could solve this hazardous risk to health), while others were forced to exclude suppliers or include new ones (P1B, P6A, P8B, and S3). Thus, *technical or*

TABLE 7 Practices to integrate stakeholders reported by companies

Category	Number of			Answer by company								
	References	Interviews	Companies	PE1 A,B,C,D,E	PE6 A,B,C	PE8 A,B,C	S1	S2	S3	S4	S5	S6
Internal												
Transparency by one-way communication	13	6	4	7 A,B,E	3 A	3 B,C	0	0	0	0	0	0
Two-way communication	37	12	7	17 A,B,D,E	7 A,C	4 B,C	3	1	0	0	3	2
Evaluating stakeholder relationships	5	4	3	1 A	2 A,C	1 C	0	0	0	0	0	0
Technical or organizational transformation	5	5	4	1 B	1 B	2 B,C	0	0	1	0	0	0
External												
Educating stakeholders	7	3	3	2 E	2 A	3 C	0	0	0	0	0	0
Linkage development	36	12	6	20 A,B,C,D,E	9 A,B	4 B,C	0	1	1	0	1	0

TABLE 8 Practices to integrate stakeholders reported by stakeholders

Category	Counted/observed number of			Answer by stakeholder			
	References	Interviews	Organization	A A,B,C	CS 1,2,3	U A,B,C,D,E,F,G	G1
Internal							
Standards and certification	7	5	4	3 B,C	3 A,C	1 B	0
Learning	13	8	4	5 B,C	4 A,B	3 A,B,C	1
Re-conceptualization	5	4	3	3 B,C	1 A	1 D	0
Selecting SC partner	1	1	1	1 B	0	0	0
Assessment of supplier	0	0		0	0	0	0
Joint development	7	6	4	1 C	1 A	3 B,C,F	2
Local anchoring	0	0	0	0	0	0	0
External							
Standards and certification	3	3	2	2 A,C	1 C	0	0
Selective monitoring	0	0	0	0	0	0	0
Supplier development	0	0	0	0	0	0	0

organizational transformation can be a way to abolish the issues directly and avoid further reputation loss.

To keep stakeholders informed about business activities, *transparency through one-way communication* is considered necessary (e.g., Gold, 2011; Meckenstock et al., 2015). All focal firms have enhanced their *transparency through one-way communication* instruments (see Table 5). Some interviewees suggested sustainability or a carbon footprint report as two possible ways to inform interested stakeholders about business-related issues such as emissions (e.g., PE1A, PE6A, and PE8B). However, several interviewees indicated that capital-driven companies are legally obligated to publish these reports, which can be seen as the minimum for aligning with the legal requirements (e.g., PE1B and PE8B). Additionally, only the three focal firms used *transparency through one-way communication* instruments, while no supplier reported on this (see Table 5). Therefore, we argue that being transparent through *one-way communication* is only a "must-have" if particular stakeholders are interested in these business reports; it should be more of an add-on rather than the embodiment of a company's stakeholder management (Beske & Seuring, 2014; Meckenstock et al., 2015).

In addition to addressing stakeholder concerns at the internal SC level, *evaluating stakeholder relationships* can entail an assessment of the efforts made and can reveal further improvements. All focal firms reported measurements such as an internal reputation index or external studies used by other stakeholders to evaluate, for example, the reputation of the focal firm from the community's point of view (PE1E, PE6B, and P8C).

However, the results suggested that focal firms and suppliers interact and address stakeholders and their issues at the SC's internal and external levels.

4.1.2 | External practices to address stakeholders (requirements)

To gain further legitimacy, *linkage development* extends the remaining share of the value chain in the target region (e.g., Sauer & Seuring, 2017), which is especially relevant to developing and emerging countries (Kumar et al., 2020).

As the head of a research institute stated, "Chile is generally characterized as a country that produces raw material but not so much processed goods" (UF). Additionally, Chile's communities do not profit directly from, for example, business taxes (CSC). All focal firms and three one-tier suppliers applied *linkage development* instruments to achieve legitimacy for their business operations. Specifically, they fostered microenterprise initiatives and implemented social projects, such as building schools, hospitals, and other infrastructural installations (see Table 5).

One focal firm manager stated, "One of our values as a company is to be a good neighbor … to act as a good neighbor" (PE1B). While most SC actors pinpointed the social outcomes of adopting *linkage development*, some offered a note of caution (PE8B, CSC, and UF). For example, a focal firm manager stated that "permission to operate is bought with money in the end" (PE8B). Thus, the results indicate that *linkage development* seems necessary for involving local stakeholders and improving the community's well-being and might positively contribute to social SC performance. Nonetheless, it needs to be carefully deployed because it can be seen as a bribery intent that might jeopardize the SC's legitimacy.

Moreover, *educating stakeholders* is another strategy to make stakeholders aware of sustainability issues. The coding revealed that all focal firms have developed education programs or workshops for external stakeholders in an effort to raise their awareness about sustainability-related issues (see Table 5). One researcher who was interviewed stated, "The idea is to teach or socialize the knowledge of the use of biomass at the level of the new generations and to educate young people and children on the importance of using biomass in the right way because there we will produce the change" (UC). Several participants agreed that universities or governmental actors were frequently included in these education workshops (see Table 6).

Thus, the findings indicate the importance of providing *education* to stakeholders to enable them to build skills and abilities and forging long-term alliances to reduce negative perception. Therefore, we propose the first set of propositions:

P1. Stakeholder management requires proactive two-way communication.

P2. Addressing stakeholder requirements with SC internal and external practices ensures a minimum level of legitimacy.

P2A. Orientation toward stakeholder management entails willingness regarding technical and organizational transformation, which can lead to legitimacy.

P2B. In developing and emerging countries in particular, the careful application of SC external practices such as linkage development and education for stakeholders, increases business legitimacy.

The results in this section indicate that, on the one hand, stakeholder management consists of different practices used to exchange and target stakeholder requirements. On the other hand, involving stakeholders in the SC operations can be another way to cooperate with them directly. The next subsection, therefore, discusses practices whereby stakeholders are directly integrated in SC activities.

4.2 | Practices whereby stakeholders are integrated

Within SSCM, stakeholders can be integrated at the internal and external levels, with other SC actors, to strive for a more sustainable SC. Integrating stakeholders within SC activities facilitate the closing of resource gaps and extends the legitimacy to do business.

4.2.1 | Internal practices where stakeholders are integrated

Sometimes, stakeholders' integration is obligatory for achieving certain *standards and certification* (e.g., Seuring & Müller, 2008), such as the Forest Stewardship Council, ISO 14064 (carbon footprint), ISO 31.000, ISO 22.301, and the Program for the Endorsement of Forest Certification. However, the results of the analysis indicate that companies cooperate with external actors to develop their own standards because this can add further legitimacy to the focal firm. Many interviewees (from all the focal firms and three suppliers) highlighted the value of external stakeholders' involvement in establish *standards and certification*. As one interviewee employed to a focal firm declared, "All these processes are certified, approved by different people who validate what we are doing in the right way" (PE1A). But others considered the national standards and requirements too low (PE8B, S1, S5, and AB). Hence, one company has created its own standards, together with the community and other stakeholders, to close this gap (P8B).

However, the results indicate that *learning* from and with stakeholders is an essential component of stakeholder management in SSCM (see Table 7); this is in line with, for example, Roscoe et al. (2020). The focal firm can exchange knowledge and information with stakeholders to close knowledge gaps or extend the knowledge base (PE1E, PE6B, and S3). As one interviewee, a researcher, stated, "They [focal firms] are groups that receive education and training in new technologies through the university" (UC).

Moreover, stakeholders can provide new business ideas or transfer new knowledge from other countries to local companies (S3, AC, and UB). One interviewee stated that they, as a company, search for

new business ideas in foreign countries and showcase detected innovations or business ideas to local suppliers (S3 and AC).

The *re-conceptualization* of the current SC structure by integrating nontraditional SC members is essential when striving for a more sustainable SC (Pagell & Wu, 2009). Several interviewees highlighted that they work collaboratively with other nonstandard companies, universities, and governmental actors to achieve a more sustainable business (design) and, therefore, higher sustainability performance (PE1A, PE1B, PE1C, PE6A, PE6C, PE8B, S1, AC, and CSA). Furthermore, two of the three focal firms have started to cooperate with one of their competitors to reduce environmental emissions. Instead of joining an SC as a new SC member, the data indicate that stakeholders can also support firms by *selecting SC partners* (AB, CSA, and G1). One of the interviewed researchers stated, "[The research institute] brings together people who are from the university with people who are in the industry" (UD) and thus supports the focal company's efforts to find the right partner to develop a new product because of the stakeholders' know-how (S3). Additionally, one interviewee employed by a focal firm added that involving stakeholders in the direct *assessment of suppliers* yields the potential of an external evaluation of possible new business partners (PE8C).

Moreover, the analysis revealed that *joint development* with stakeholders has been a fruitful way to launch innovative projects and tackle their limited internal resources. All focal firms and even two of their suppliers reported that they collaborate with stakeholders to develop joint projects or drive research programs to meet the challenge of achieving sustainable innovations (PE1C, PE1E, PE6A, PE8A, PE8B, PE8C, S1, and S3). For example, one supplier stated "We intended to look for new options and in conversations with the Unidad de Desarrollo Tecnológico, [...] we showed them what we were doing, and from that came a joint idea [...]" (S3).

Despite *linkage development*, *local anchoring* is more about (new business) behaviors to integrate local stakeholders by favoring local employment or involving nearby smallholders and families in delivering raw material (PE1C, PE1D, and S5). Representatives from all but two companies stated that they strived for local anchoring (see Table 7). As one interviewee stated, "The company also makes an effort to favor local employment during the recruitment of new staff" (PE1E). A common view that was shared was that once stakeholders were involved in the business activities and were somewhat a part of the value chain, the mutual recognition/acceptance off both sides could be extended (e.g., PE1A, PE1C, PE1D, PE1E, PE6C, PE8C, and S5).

Together, these results provide important insights into the practice of engaging with stakeholders to achieve a more sustainable SC and legitimacy at the internal company level. The following section discusses the practices at the external company level.

4.2.2 | External practices whereby stakeholders are integrated

Regarding *standards and certification*, the empirical findings showed stakeholders' involvement in certifying suppliers, as indicated in the literature (e.g., Oelze et al., 2016). All the focal firms and three suppliers reported that they have worked with stakeholders to certify their suppliers to ensure minimum requirements regarding, for instance, working conditions, community relationships, and environmental practices (see Table 7). As one manager of a focal firm put ii, "There is a certain level of external controls [...] not only audits but also talks with the communities and talks with other stakeholders because they are more demanding in terms of commitments" (PE1B).

Standards and certifications are closely connected to *selective monitoring* because regular audits and monitoring programs to measure environmental or social criteria are frequently a component of standards and certifications (Meckenstock et al., 2015; Perrini & Tencati, 2006). While all focal firms worked with third-party certifiers to monitor their suppliers, two of them also integrated communities or other stakeholders into the monitoring program to ensure acceptable behavior by their suppliers (see Table 8). These firms provide contact centers, online complaint platforms, and roundtables to facilitate immediate communication and to report suppliers' misbehavior (PE1A, PE1B, PE1E, and PE6B).

Supplier development is closely linked to internal-practice SC *partner selection* and external-practice *standards and certification*. All focal firms reported that they cooperate with stakeholders to provide suppliers with training programs to improve their overall sustainability SC performance (PE1A, PE1E, PE6A, PE6B, PE6C, and PE8C). For example, a representative of one focal firm stated, "A pilot project was developed to reduce emissions and foster energy efficiency with contracting transport companies, which involves training for participants provided by the Chilean Energy Efficiency Agency" (PE1E).

Thus, we propose the second set of propositions regarding stakeholder management:

P3. Reconceptualization of the SC by integrating nontraditional SC members can lead to higher sustainability performance.

P3A. Involving stakeholders can close resource and knowledge gaps and deficits at the company level.

P3B. Involving stakeholders allows a focal firm to tackle SC issues beyond its own boundaries.

P4. Involving stakeholders within the SC requires but can also contribute to further legitimacy.

4.3 | Conceptualization of the findings

Together, these results provide essential insights into the operationalization of stakeholder management, as shown in Figure 2. The study findings suggest that two-way communication with stakeholders can be seen as the core of stakeholder management (P1). Moreover, addressing stakeholder requirements with SC internal and external practices ensures a (minimum) level of legitimacy (P2). Therefore, the transformation of the technical and organizational SC design

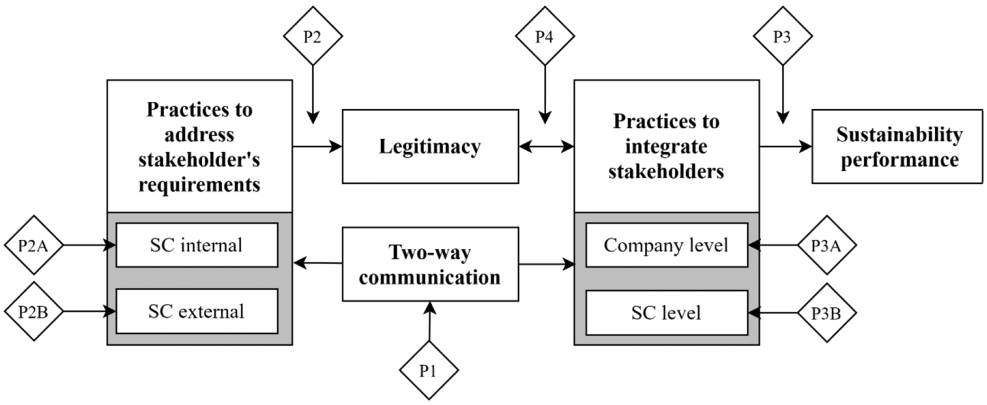

FIGURE 2 Stakeholder management practices in SSCM

may be required (P2A). Additionally, especially in developing and emerging countries, the careful application of SC external practices such as linkage development and education for stakeholders can lead to further legitimacy (P2B).

Thus, stakeholder management combines different practices to discuss stakeholder concerns, address them, and evaluate processes at the SC's external and internal levels to gain legitimacy. However, legitimacy is somewhat a prerequisite for involving stakeholders within the SC, which can, in turn, contribute to further legitimacy (P4).

Furthermore, all practices work toward a more sustainable SC by addressing or integrating stakeholders at different levels (P3). For example, the SC's reconceptualization by integrating nontraditional SC members (i.e., stakeholders) can lead to higher sustainability performance (P3). Involving stakeholders can close resource and knowledge gaps at the company level (P3A) and tackle SC issues beyond its boundaries (P3A and P3B).

The results indicate that certain practices—for example, the reconceptualization of the SC—can improve performance; most interviewees were aware of this but struggled to expound on the interlinkages between certain practices and a particular dimension of sustainability. Thus, the results reveal somewhat limited insights into the relationship between specific practices and one of the three sustainability dimensions. However, they provide evidence of the prerequisite of stakeholder management practices for improving overall SC sustainability performance.

5 | DISCUSSION

Although the management of stakeholder issues is a core element in arguing why companies strive toward a more sustainable SC (Beske & Seuring, 2014; Chowdhury et al., 2019), little research focuses on the operationalization of stakeholder management in SSCM. The current study is an attempt to scrutinize stakeholder management practices in SSCM by applying a case study design. Because SSCM contains myriad aspects, picking suitable practices is a crucial phase. Thus, we followed the considerations of well-accepted studies as a starting point for stakeholder management practices. These deductively derived constructs were complemented inductively based on the empirical data. Hence, we elaborated on theory through construct splitting and restructuring in the SSCM domain (Fisher & Aguinis, 2017). Further, the results provide empirical evidence of how companies interact with stakeholders to establish stakeholder management in SSCM within the scope of the bioenergy field, answering the call from Ansari and Kant (2017) to conduct more case studies to advance the SSCM debate.

The study suggests analyzing stakeholder management practices vis-à-vis the dimensions of "practices to address stakeholder requirements" and "practices where stakeholders are integrated."

In the current SSCM literature, stakeholder management is more a term that lacks specification (e.g., Chowdhury et al., 2019; Perrini & Tencati, 2006) or somewhat an instrument for communicating with the stakeholder (Hofmann et al., 2014). The literature paints an incomplete picture when it comes to an understanding how stakeholder management can be operationalized in SSCM. Thus, the study findings suggest that stakeholder management combines different practices to exchange stakeholder concerns, address them, and evaluate the process at the SC's external and internal levels to gain legitimacy.

In line with the literature (e.g., Beske & Seuring, 2014; Oelze et al., 2016), the results indicate that an ongoing discourse with stakeholders through two-way communication ensures that companies are informed about the stakeholders' requirements and facilitates the process of meeting these requirements. Although two-way communication with stakeholders can be seen as the core of stakeholder management (Beske & Seuring, 2014; Hofmann et al., 2014), the analysis also indicates that a certain willingness to learn and transform the SC design is a prerequisite for a true orientation toward stakeholder management in SSCM, which is in line, for example, with Svensson et al. (2018) and Shubham et al. (2018).

SSCM scholars suggest that linkage development is a relevant strategy for involving stakeholders in businesses, particularly in emerging countries, but it has received minimal attention to date (Sauer & Seuring, 2017). The study findings indicate that further legitimacy can be achieved through linkage development (e.g., job creation and extending the community's well-being) and by educating stakeholders at the external SC level. Further, the results suggest that local

anchoring by adopting (new business) behaviors to integrate local stakeholders due to favoring local employment or involving nearby smallholders and families in delivering raw material can foster direct stakeholders' positive perception; this is in line with, for example, Ahl et al. (2018).

To ensure the stakeholders' legitimacy (Ruf et al., 2001; Xu et al., 2019), "trust-building transparency," "two-way communication," and "knowledge transfer" are proposed practices for stakeholder management (e.g., Beske & Seuring, 2014; Meckenstock et al., 2015). Our findings broaden this view by emphasizing that integrating stakeholders at different SC stages might be an additional stakeholder management component. Both measures can contribute to gaining legitimacy from local actors.

In addition to legitimacy, the findings suggest that stakeholder integration can lead to higher sustainability performance. As indicated by Pagell and Wu (2009) and Shubham et al. (2018), the study shows that SC's re-conceptualization, thus stakeholder integration, contributes to expanding the resource base or closing gaps, such as limited knowledge. Further, collaborating with stakeholders can trigger a company's learning capacity and thereby yield the potential of joint product developments (Manzhynski & Figge, 2020). In accordance with the present results, previous studies have demonstrated that knowledge exchange and frequent communication with stakeholders are essential for innovation (Ahl et al., 2018; Oelze et al., 2016).

A further contribution lies in the selected empirical field. While the current SSCM discourse is clearly dominated by a Western perspective (Jia et al., 2018; Morais & Silvestre, 2018), this piece of research is one further step toward filling the gap by being based on an emerging country setting.

Nevertheless, the empirical qualitative study has its limitations theoretical and empirical limitations (Eisenhardt & Graebner, 2007). Three major limitations can be identified. (a) While we grounded our research on established SSCM constructs, a more reflective approach and the selection of other constructs on stakeholder management and SSCM might yield additional insights. (b) Although we based our research on established SSCM constructs, and the data analysis process followed strict rules (e.g., Mayring, 2015), the researcher's subjectivity in the analyzing process could not be completely avoided. While attempts were made to prevent bias during data gathering and analysis, it might have been impossible to exclude every researcher's influence (Bryman & Bell, 2015; Stuart et al., 2002). (c) The fact that the data were restricted to one industry in one country might have caused limited generalizability of these results.

However, the limitations of our case study point to future research opportunities. Our empirical propositions should be anchored more comprehensively in the existing body of literature. Here, a literature review applied to the field of stakeholder management in SSCM might validate or reject our propositions and reveal what has been studied to date. While the generalizability is currently restricted, further empirical studies in a diverse setting setting—for instance, another industry in an industrialized country—can extend it (Eisenhardt & Graebner, 2007). This would also provide further empirical evidence, as requested by Meixell and Luoma (2015).

6 | CONCLUSION

This study explores SSCM practices applied by focal firms to engage with stakeholders and manage their issues as part of their stakeholder management due to extensive empirical work.

The findings show that stakeholder management combines different practices to exchange stakeholder concerns, address them, and evaluate the process at the SC's external and internal levels to gain legitimacy. We structure these practices based on two dimensions: "practices to address stakeholder requirements" and "practices where stakeholders are integrated."

The results indicate that although two-way communication with stakeholders can be seen as the core of stakeholder management, a certain willingness to learn and transform the SC design is a prerequisite for true orientation toward stakeholder management in SSCM. Additionally, linkage development and local anchoring are practices used to obtain further legitimacy at the external level. These and other insights can help managers develop and implement practices to engage with stakeholders and manage their issues. For example, a company facing resource and knowledge gaps and deficits at the internal level or beyond its boundaries can involve stakeholders in closing these gaps. Furthermore, involving stakeholders within the SC can contribute to legitimacy and lead to higher sustainability performance.

Although this study is the first attempt to analyze stakeholder management practices in SSCM, it has both theoretical and empirical limitations. Thus, digging deeper would contribute to a more comprehensive understanding of stakeholder management in SSCM.

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