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RESEARCH ARTICLE

Linking sustainable business models and supply chains – Toward an integrated value creation framework

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Abstract

Extant literature on sustainable business models highlights that value creation stems from resources exchanged in relationships between a focal firm and its stakeholders. In this context, the literature has, so far, focused on direct relationships. However, despite the acknowledged relevance of sustainability issues in supply chains, this relational view of the focal company and its direct stakeholders has not been extended toward value creation *for* and *with* indirect stakeholders, such as stakeholders of suppliers. Addressing this gap, this conceptual article integrates a relational view of sustainable supply chain management into the management of sustainable business models. It extends the scope of sustainable business models from relationships between the focal firm and its direct stakeholders to indirect relationships with stakeholders of suppliers. A framework is developed that supports analysis and management of value-creating relationships between the focal firm, suppliers, and stakeholders of suppliers. By extending the conceptualization of sustainable business models to consider relationship chains beyond direct relationships, this article proposes that a focal firm has to actively manage interactions both with suppliers and with suppliers' stakeholders.

KEYWORDS

business model, corporate sustainability, integrated framework, multi-tier supply chain, relational view, stakeholders, sustainable supply chain management, value creation

1 | INTRODUCTION

To improve the sustainability of the core business and supply chains of companies, the strategic concepts of sustainable business models (SBMs; Schaltegger, Hansen, & Lüdeke-Freund, 2016; Stubbs & Cocklin, 2008) and sustainable supply chain management (SSCM; Seuring & Müller, 2008b) have been developed in management practice and research. While the SBM concept is concerned with the ecological, social and economic value creation of a focal firm (Evans et al., 2017; Schaltegger et al., 2012), SSCM focuses on managing the flow of goods, information and capital and the relationships between

suppliers, focal firm, and customers to improve sustainability performance (Preuss, 2005; Seuring, 2011). SBMs and SSCM thus share conceptual foundations such as the explicit consideration of stakeholders (Lüdeke-Freund et al., 2016).

SBMs and SSCM also exhibit functional complementarities. Business models serve as “connecting point” (Ritter & Lettl, 2018, p. 7) for different concepts because they span various business functions (Freudenreich et al., 2020; Wirtz et al., 2016). The comprehensive and systemic ambition of SBMs (Evans et al., 2017; Stubbs & Cocklin, 2008) implies that links between social, environmental, and economic issues along supply chains need to be considered in the

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creation and delivery of the value proposition (Boons & Lüdeke-Freund, 2013; Stubbs & Cocklin, 2008). This argument gains weight considering the outsourcing to countries with lower social and environmental standards (Clarke & Boersma, 2017; Reuter et al., 2010) that shifts much of a focal firm's impact into the upstream supply chain (e.g., Lueg et al., 2015; Plambeck, 2012). One example for this is the production of electronic products to China, which has been criticized for poor employment conditions (e.g., Xu & Li, 2013).

Consequently, the management of an SBM needs to exceed the organization-centric value creation perspective of the focal firm and include the inter-organizational perspective of the supply chain (Gold et al., 2010). According to Lüdeke-Freund et al. (2016), however, the complementarities between the two concepts – SBM and SSCM – have so far only been addressed sparsely in the literature while scholars from either field refer to the each other in a general manner, only (e.g., Boons & Lüdeke-Freund, 2013; Lozano, 2018; Pagell & Wu, 2009). Although agreement exists that an SBM needs to consider all stakeholders involved (Freudenreich et al., 2020), the implicit focus of the literature on direct stakeholder relationships implies that indirect relationships to more distant stakeholders are less relevant for SBMs. This is surprising, considering that sustainability problems often originate from indirect supply chain relationships (Miemczyk et al., 2012). The prevalence of sustainability issues at lower tiers (Miemczyk et al., 2012; Seuring & Müller, 2008a) and the risk of negative exposure (Hofmann et al., 2014; Parmigiani et al., 2011) indicate that indirect stakeholders (e.g., employees of suppliers) could often be even more important to an SBM than direct stakeholders. Furthermore, the potential role of suppliers in value creation (e.g., Dyer & Singh, 1998; Touboulis & Walker, 2015) has so far not been conceptualized sufficiently for SBMs. These limitations may restrict achieving the fundamental goal of SBMs to create value for a comprehensive set of stakeholders with solutions to sustainability problems (e.g., Evans et al., 2017; Freudenreich et al., 2020). The same lack of specificity can be observed in the SSCM literature, where the business model has been referred to as antecedent or influencing factor for SSCM on a general level only (Pagell & Wu, 2009; Schaltegger & Burritt, 2014). In summary, a structured analysis of the intersections of SBMs with sustainable supply chains is missing, so far. This paper addresses this research gap by analyzing linkages between the concepts and answering the following research question: *How can sustainable supply chain management contribute to a sustainable business model?*

To answer the research question, this paper connects the business model concept with SSCM from a relationship perspective. Based on the distinction between direct stakeholders with a direct relationship with the focal firm and indirect stakeholders associated with suppliers, this article discusses the role of suppliers in creating value for their stakeholders. Building on this, an integrated framework is developed that consolidates organization-centric SBM and inter-organizational SSCM conceptions (Freudenreich et al., 2020; Gold et al., 2010) from a relational view (Dyer & Singh, 1998). The framework aids academics and practitioners alike in understanding and managing a business model by extending the relational perspective on SBMs beyond dyadic (i.e., two-sided) and direct stakeholder

relationships (Freudenreich et al., 2020) toward indirect and polyadic (i.e., multi-sided) relationships. By bridging the currently separate SBM and SSCM research streams, this paper advances SBM research in its role as an “integrative field” for sustainability management (Lüdeke-Freund & Dembek, 2017, p. 1676). This strengthens the role of SBMs as strategic tool for managing sustainability of the core business of the firm (Evans et al., 2017; Schaltegger et al., 2012). For clarity of argumentation, the paper focuses on the upstream supply chain, the focal firm, and its customers.

The next section introduces the concepts of SBMs combining stakeholder theory with a resource-based view and SSCM with the relational view and explicates gaps and complementarities. The third section develops an integrated conceptual value creation framework for SBMs that considers relationships with stakeholders in the supply chain. The framework is illustrated with an example. The final section concludes with implications and directions for sustainability management of supply chains as part of the business model and for future research.

2 | CONCEPTUAL BACKGROUND: MISSING LINKAGES BETWEEN SBMS AND SSCM

To this date, research on SBMs has stayed relatively isolated from other management fields (Lüdeke-Freund & Dembek, 2017), including SSCM (Lüdeke-Freund et al., 2016). This section introduces the two concepts based on previous literature. Additionally, research gaps about possible intersections are identified.

2.1 | SBMs as organization-centric perspective on value creation

The concept of SBMs, also known as business models for sustainability (Lüdeke-Freund, 2020; Schaltegger, Hansen, & Lüdeke-Freund, 2016; Stubbs & Cocklin, 2008), emerged in part to understand economic value creation from solving social and ecological problems (Schaltegger et al., 2012). SBMs describe a firm's business rationale, taking a systemic and comprehensive perspective that ideally addresses all impacts on and of stakeholders and the natural environment (Evans et al., 2017; Stubbs & Cocklin, 2008). One widely accepted definition is provided by Schaltegger, Hansen, and Lüdeke-Freund (2016, p. 6):

A business model for sustainability helps describing, analyzing, managing, and communicating (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries.

Each of these three aspects answers different questions about the value creation of an organization (Lüdeke-Freund et al., 2020). The first aspect pertains to the question of *what* kind of value is to be created and *for whom* (Freudenreich et al., 2020). The extension of the conventional focus on customer value (Osterwalder et al., 2005) toward multiple stakeholders in SBMs (Schaltegger, Hansen, & Lüdeke-Freund, 2016), results in a set of idiosyncratic *value propositions* for various stakeholders, including customers, suppliers, distributors, employees, financial stakeholders, and societal stakeholders (Freudenreich et al., 2020; Harrison & Wicks, 2013; Tantalo & Priem, 2016; Figure 1), and the natural environment. Stakeholder theory explains how the unique needs and expectations of each stakeholder determine their perception of the value offered by the firm (Donaldson & Preston, 1995; Harrison et al., 2010). Stakeholders perceive a particular *use value* based on both monetary and non-monetary outcomes, and the quality of the relationship itself (Bowman & Ambrosini, 2000; Brozovic, 2020; Harrison & Wicks, 2013). However, this perspective on stakeholder value has not been extended in the SBM literature to stakeholders who have an indirect relationship with the focal firm through suppliers (i.e., stakeholders of suppliers). This is an issue since stakeholders such as customers also evaluate sustainability contributions of the company (Hörisch et al., 2014), the treatment of other stakeholders (Harrison & Wicks, 2013), and the resources used to create value (Hunt, 1995).

The second aspect relates to the question of *how* and *by whom* value is created and delivered in an SBM (Freudenreich et al., 2020). Combining stakeholder theory with a resource-based view (Bowman & Ambrosini, 2000; Donaldson & Preston, 1995) suggests that stakeholders contribute resources (e.g., material and labor) to the *value creation* of business models (Freudenreich et al., 2020). These resources and activities are structured, linked, and transformed through the focal firm's business model (e.g., Osterwalder et al., 2005) to create outputs of higher value *for* its stakeholders (Harrison & Wicks, 2013; Lüdeke-Freund et al., 2020), such as products addressing customer needs. Additionally, the relationship quality with regard to the just treatment of stakeholders and the social benefits of affiliation to the firm (e.g., reputation) is an important value creator in itself (Harrison & Wicks, 2013). As value is always created *with* stakeholders, mutually beneficial relationships and reciprocal value flows (Evans et al., 2017; Freudenreich et al., 2020; Harrison & Wicks, 2013) are crucial to support the social and ecological systems the SBM is embedded in (Brozovic, 2020; Cosenz et al., 2020). However, the role of suppliers in creating value (Boons & Lüdeke-Freund, 2013; Evans et al., 2017) for the focal firm's indirect stakeholders has not yet been analyzed in depth. For example, Lueg et al. (2015) find only a symbolic supplier management approach in their case study that does not affect the supply chain's sustainability substantively. Additionally, *value delivery* explains physical distribution and accompanying communication through which customers receive

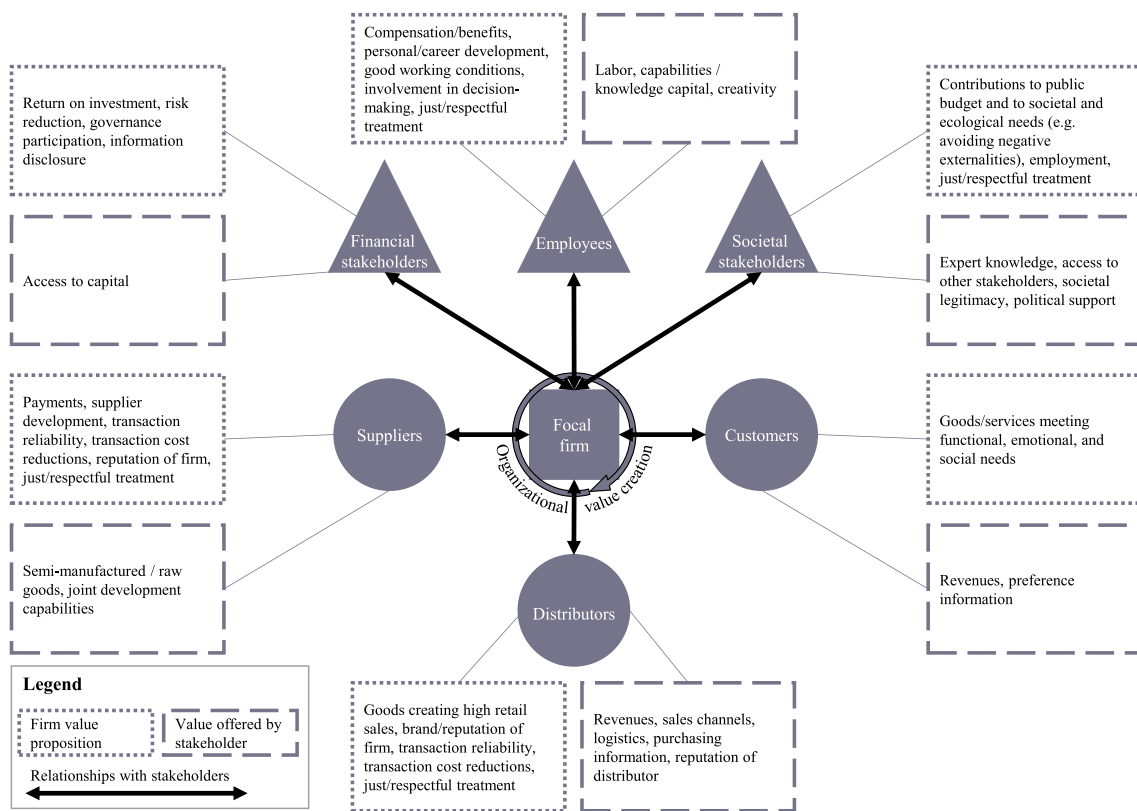


FIGURE 1 SBM framework of value creation for and with direct stakeholders (e.g., Freudenreich et al., 2020; Harrison & Wicks, 2013; Tantalo & Priem, 2016) [Colour figure can be viewed at wileyonlinelibrary.com]

the tangible and intangible aspects defined by the value proposition (e.g., Massa et al., 2017). The potential synergistic effects (Jolink & Niesten, 2015; Tantalo & Priem, 2016) of communicating the value created for a firm's direct and indirect stakeholders in the supply chain to customers (Viciunaite, 2020) require more explicit consideration. Figure 1 illustrates the value created for and with direct stakeholder groups typically addressed in the literature, which misses potential indirect stakeholders in the supply chain and value exchanges among stakeholders themselves.

The third aspect, *value capture*, relates to the question of *how much* value is to be created for each stakeholder, which can be affected by increasing or decreasing the use value offered or the exchange value demanded in return. Business models receive exchange value from stakeholder contributions to value creation (e.g., capital or labor) and distribute other exchange value in return (Bowman & Ambrosini, 2000). An exchange value given by one side has use value for the other, receiving side (Bowman & Ambrosini, 2000), which is incommensurable because of the idiosyncratic, non-monetary outcomes that stakeholders value (Harrison & Wicks, 2013; Lüdeke-Freund et al., 2020). The underlying idiosyncrasies and incommensurability also suggest that value capture is not a zero-sum game where value creation for one stakeholder would be at the expense of another (Donaldson & Preston, 1995). As a stakeholder orientation shifts the focus from maximizing the value captured by the firm toward the maximization of value for stakeholders (Harrison et al., 2010; Jolink & Niesten, 2015), several authors have argued for an equitable balance among all involved stakeholders (Barney, 2018; Boons & Lüdeke-Freund, 2013; Stubbs & Cocklin, 2008). Beyond this, the meaning of equitability and how value capture can be ensured (e.g., Bocken et al., 2014) for all participating supply chain stakeholders remain unclear.

In sum, while various authors emphasize that SBMs should address the entire range of social and ecological impacts (Bocken et al., 2014; Stubbs & Cocklin, 2008), the role of sustainable supply chains for managing an SBM is understood insufficiently (Lüdeke-Freund et al., 2016). To enable a structured analysis of the concepts' linkages, the following section reviews the concept of SSCM.

2.2 | SSCM as inter-organizational perspective on value creation

SSCM emerged from research on the impact of supply management on the environmental (e.g., Green et al., 1996; Handfield et al., 2005) and social performance of buying firms (e.g., Carter & Jennings, 2004). Indicated by the number of literature reviews (Seuring, 2011), SSCM constitutes a more matured research and management field than SBMs. Ahi and Searcy (2013, p. 339) reviewed the variety of existing definitions to synthesize the following comprehensive definition of SSCM:

The creation of coordinated supply chains through the voluntary integration of economic, environmental, and

social considerations with key inter-organizational business systems designed to efficiently and effectively manage the material, information, and capital flows associated with the procurement, production, and distribution of products or services in order to meet stakeholder requirements and improve the profitability, competitiveness, and resilience of the organization over the short- and long-term.

SSCM is concerned with material, information, and financial flows and relationships between upstream and downstream actors in the supply chain (Seuring, 2004, 2011). Compared to conventional supply chain management, SSCM considers a wider range of social and ecological issues and additional stakeholders such as non-governmental organizations (NGOs) or communities (Pagell & Wu, 2009; Seuring & Müller, 2008a). In line with much of the SSCM literature, this article takes the perspective of the focal firm, which is frequently seen as initiator of SSCM (Beske & Seuring, 2014). Adoption of sustainable practices throughout the whole supply chain, however, can only be implemented through collaborative relationships with suppliers (Touboullic et al., 2014; Vachon & Klassen, 2006). To explain why collaborative relationships support value creation, Dyer and Singh (1998) complement the resource-based view, which locates value creation within individual firms, with a relational view, where value creation is located in the dyadic firm-supplier relationship (Gold et al., 2010; Touboullic & Walker, 2015). Within collaborative dyadic relationships, the focal firm and its supplier can jointly create value, which neither of them could have created on their own (Dyer & Singh, 1998). Relational advantages, which may also benefit social and ecological performance (Gold et al., 2010; Vachon & Klassen, 2006), are driven by the following four determinants (Dyer & Singh, 1998). First, in contrast to transactional relationships, the firm and its suppliers can invest in *relation-specific assets*, such as specialized production processes. Second, *knowledge-sharing routines* support a two-way learning process in the firm-supplier relationship (Solér et al., 2010; Wong et al., 2018). Third, combining *complementary resources and capabilities*, such as production expertise for products or components, allows for better use of both the focal firm's and the supplier's individual resources. Fourth, *formal and informal governance mechanisms* (e.g., codes of conduct or informal interpersonal relationships) between the firm and its supplier create mutual trust in the relationship, thereby facilitating the other determinants (Dyer & Singh, 1998; Onofrei et al., 2020; Touboullic et al., 2014). Because of the emphasis on inter-organizational value creation (Gold et al., 2010), the relational view constitutes a useful theoretical lens to explain how value can be created for indirect stakeholders of SBMs jointly by the focal firm and its suppliers.

Recently, SSCM studies have extended the focus from first-tier supplier and customer relationships toward a multi-tier perspective to account for environmental and social impacts at *n*-tier suppliers (Tachizawa & Wong, 2014). This can be attributed to the increased complexity and globalized outsourcing of production (Reuter et al., 2010) that results in many indirect relationships between the focal firm and suppliers at lower tiers (Miemczyk et al., 2012). Here,

information about sustainability issues and preferences of the focal firm's customers is often asymmetrically distributed (Akerlof, 1970) between actors in a supply chain (Sarkis et al., 2011; Solér et al., 2010). Since this obstructs control over sustainability issues and, thereby, invites opportunistic behavior of suppliers, it subsequently exposes the firm to stakeholder pressure (e.g., customers, investors, and NGOs) (Jaegler & Goessling, 2020; Parmigiani et al., 2011; Seuring & Müller, 2008a). Customers and other stakeholders (e.g., NGOs) frequently attribute responsibility for these impacts of the supplier to the focal firm rather than the supplier itself (Hartmann & Moeller, 2014; Parmigiani et al., 2011). In this context, entire *relationship chains* of firm–stakeholder interrelationships need to be considered that connect the focal firm to its indirect stakeholders on all tiers (Busse, 2016; Tachizawa & Wong, 2014). This requires an extension of the unit of analysis in the relational view from dyads toward triadic or even polyadic relationships not only with suppliers, but also with other stakeholders. Here, the narrow set of direct stakeholders (Figure 1) is extended with the focal firm's *n*-tier suppliers and the stakeholders (employees, financial, and societal stakeholders) of suppliers. Unless otherwise stated, the direct and

indirect stakeholders described refer to the focal firm. This paper, therefore, focuses on relationship chains in an upstream supply chain between suppliers, the focal firm and its customers for the sake of clarity and depth of argumentation.

While this perspective fits the comprehensive scope of SBMs, multi-tier SSCM research has so far mainly focused on stakeholders as external pressure (Tachizawa & Wong, 2014; Wilhelm, Blome, Wieck, & Xiao, 2016; Yen, 2018), without explicitly considering them as beneficiaries or contributors. Overall, a focal firm that aims for more sustainable supply chains also needs to establish fit between the supply chain and its business model (Schaltegger & Burritt, 2014). However, authors connecting SSCM to (sustainable) business models usually refer to the general business model concept rather than its specific elements (e.g., Pagell & Wu, 2009). SBM research could benefit from consideration of value creation for supply chain stakeholders and multi-tier relationship chains (e.g., Busse, 2016). Extending the relational view on value creation to indirect stakeholders could explain how an SBM creates value for a variety of stakeholders in collaboration with suppliers. The next sections, therefore, analyze linkages between the two concepts.

TABLE 1 Comparison of SBM and SSCM concepts based on Lüdeke-Freund et al. (2016) and potential complementarities between both concepts

	SBM concept	SSCM concept	Gaps about potential complementarities
Orientation	Comprehensive and systemic consideration of economic, social, and ecological impacts of focal firm (e.g., Bocken et al., 2014)	Consideration of economic, social and ecological impacts along supply chain (e.g., Seuring & Müller, 2008b)	Considering supply chain impacts could support the comprehensive consideration of sustainability impacts in business models.
	Explicit consideration of focal firm's stakeholders (e.g., Stubbs & Cocklin, 2008)	Explicit consideration of stakeholders along multi-tier supply chain (e.g., Seuring & Müller, 2008b)	A multi-tier supply chain perspective could support distinguishing direct and indirect supply chain stakeholders in an SBM.
	Balancing short-term and long-term objectives for focal firm (e.g., Stubbs & Cocklin, 2008)	Improving long-term resilience and short-term performance (e.g., Beske & Seuring, 2014)	
Scope and content	Broadly defined boundaries, high-level condensation of various business functions (e.g., Massa et al., 2017)	Narrower and clearer boundaries (e.g., Ahi & Searcy, 2013)	An inter-organizational supply chain perspective could broaden the organization-centric view with external relationships necessary to create value.
	Elements of value creation and relationships between them (e.g., Upward & Jones, 2016)	Sustainability of forward and reverse material, capital, and information flows across multiple tiers (e.g., Ahi & Searcy, 2013)	Multi-tier SSCM research could inform relationship building and collaboration for stakeholder value creation.
	Organization-centric view: limited consideration of value creation by partners (e.g., Boons & Lüdeke-Freund, 2013)	Inter-organizational view: relationships and coordinating actions between actors in supply chains (e.g., Pagell & Wu, 2009)	
Function and approach	Understanding and improving the focal firm's sustainable value creation (e.g., Schaltegger et al., 2012)	Understanding and improving supply chain triple bottom line (e.g., Carter & Rogers, 2008)	Understanding the role of supply chain partners and collaboration in SBMs could improve sustainable value creation (for stakeholders).
	Institutionalizing sustainability collaboratively in socio-economic environment (e.g., Stubbs & Cocklin, 2008)	Collaborative paradigm to improve sustainability performance (e.g., Gold et al., 2010)	Supply chain could be a lever for SBM-driven sustainability transformations.
	Transforming unsustainable socio-economic structures (e.g., Schaltegger, Lüdeke-Freund, & Hansen, 2016)	Inducing change toward sustainability within supply chain partners (e.g., Preuss, 2005)	

2.3 | Research gap about the complementarities between SBMs and SSCM

Advancing the comparison of SBMs and SSCM by Lüdeke-Freund et al. (2016), Table 1 provides a comparison and overview of the possible complementarities. Both concepts take social and ecological impacts into account and assume responsibility toward stakeholders (e.g., Seuring & Müller, 2008b; Stubbs & Cocklin, 2008). They do so, however, with different scopes and contents: while SBMs reflect an organization-centric view emphasizing value creation for direct stakeholders (Schaltegger, Hansen, & Lüdeke-Freund, 2016), SSCM addresses inter-organizational value creation and relationship chains between the focal firm and supply chain stakeholders (Busse, 2016; Touboullic & Walker, 2015). Furthermore, both concepts entail transformative aspects: Whereas SBMs aim at changing organizational, market, or societal structures (Lüdeke-Freund, 2020; Roome & Louche, 2016; Schaltegger, Lüdeke-Freund, & Hansen, 2016), SSCM diffuses sustainable practices across multiple tiers of supply chains (Preuss, 2005). While SSCM has clearer conceptual boundaries, business models have been described more broadly as “a description of an organization and how that organization functions in achieving its goals” (Massa et al., 2017, p. 73). In this role, the SBM concept acts as “connecting point” (Ritter & Lettl, 2018, p. 7) or “integrative field” (Lüdeke-Freund & Dembek, 2017, p. 1676) for different research fields. Integrating the relational SSCM perspective could support the SBM concept's comprehensive scope (e.g., Stubbs & Cocklin, 2008).

However, the complementarities between the inter-organizational and organization-centric views on value creation in SSCM and SBMs, respectively, have been insufficiently investigated so far in both fields (Table 1). On the SSCM side of the debate, extant literature suggests that a sustainability-oriented business model is a prerequisite for the management of sustainable supply chains, but only argues *that* such a “business model then guides decision making” (Pagell & Wu, 2009, p. 51). What is missing in the literature are arguments that explain *why* or *how* this is the case. The same applies to the SBM side, where some conceptualizations feature the supply chain as a distinct element of SBMs (Boons & Lüdeke-Freund, 2013; Lozano, 2018), focusing on issues such as partner choice and commodities supplied, or cases where sustainability is not deeply embedded into the business model (e.g., Lueg et al., 2015). Freudenreich et al. (2020, p. 14) suggest “the role of different business functions in managing stakeholder relationship[s]” require more attention, and this includes relational value creation through SSCM. To go beyond the general acknowledgement of the supply chain in the SBM literature, Lüdeke-Freund et al. (2016) call for an integrated framework based on a systematic assessment of the linkages between the organization-centric and inter-organizational value creation perspectives.

In this regard, Freudenreich et al. (2020, p. 15) argue that if “a framework is to be analytically useful, it needs to provide a more differentiated picture of the stakeholders involved in their specific mutual value exchanges with a focal business.” SBM frameworks in the literature are commonly arranged around the focal firm's value creation, be it in terms of components (e.g., Bocken et al., 2014;

Joyce & Paquin, 2016; Upward & Jones, 2016) or hub-and-spoke-like dyadic relationships with stakeholders (e.g., Freudenreich et al., 2020). Organization-centric hub-and-spoke arrangements with the focal firm at its center imply that the focal firm can create value *with* and *for* stakeholders directly, which is often not feasible considering the chain of indirect stakeholder relationships prevalent in supply chains (Miemczyk et al., 2012). In other words, the SBM concept needs to integrate a relational view (Dyer & Singh, 1998) to explain the role of supply chain stakeholders in value creation (Touboullic & Walker, 2015). This requires the inclusion of *relationship chains* into the value creation of a SBM.

Previous attempts of integrating SBM and SSCM frameworks (e.g., Lüdeke-Freund et al., 2016) do not explicitly consider indirect supply chain stakeholders of a focal firm and, therefore, have limited utility for the analysis of *sustainable* business models. Thus, a differentiated framework for the description and analysis of SBMs that also considers indirect supply chain stakeholders and polyadic value creation relationships (e.g., Dyer & Singh, 1998) is needed. The following section develops such an integrated framework.

3 | DEVELOPING AN INTEGRATED SBM – SSCM VALUE CREATION FRAMEWORK

This section analyzes the linkages between the SBM concept and SSCM in more detail, based on arguments from stakeholder theory (e.g., Harrison & Wicks, 2013), the resource-based view (e.g., Bowman & Ambrosini, 2000) and the complementing relational view (e.g., Dyer & Singh, 1998). The following multi-tier SBM framework (Figure 2) is proposed to reflect a more comprehensive setup of relationships and mutual value exchanges between the focal firm and its direct and indirect stakeholders. This framework aligns with the relationship emphasis of SSCM (Pagell & Wu, 2009) and the recent argument of Freudenreich et al. (2020) that mutual value exchanges with stakeholders are the foundation of an SBM. It extends previous conceptions of SBMs through the integration of multi-tier relationship chains that consider indirect supply chain stakeholders.

This multi-tier SBM framework describes the default setup of relationships and value exchanges, which can be adapted to the respective needs of a focal firm. While the framework integrates a multi-tier supply chain perspective in a parsimonious manner (similar to Wilhelm, Blome, Wieck, & Xiao, 2016), it is open to extension with additional networked branches of various actors. Next, the framework will be explained with regard to the relationships between supply chain stakeholders in the context of the SBM elements.

3.1 | Value propositions for customers and other supply chain stakeholders

Analyzing the value proposition from a supply chain perspective yields two main reasons why SSCM needs to be considered in SBMs: First, value propositions need to address indirect stakeholders of the focal

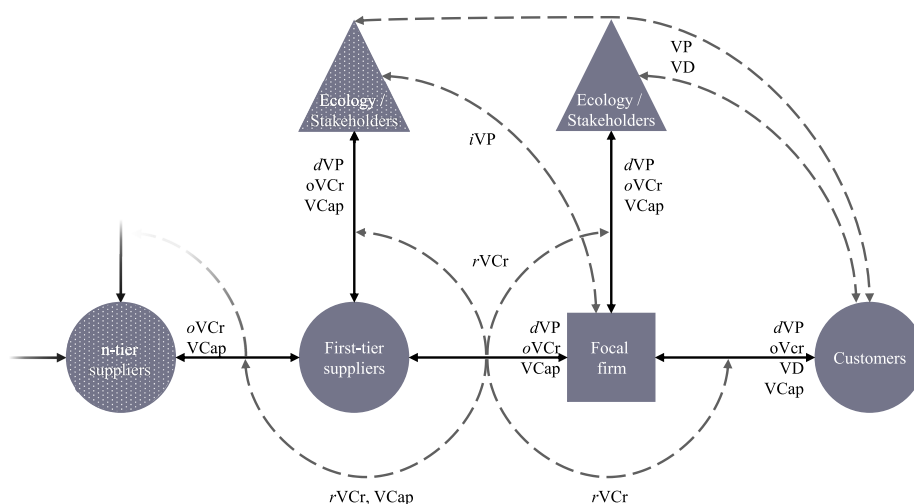


FIGURE 2 Integrated SBM-SSCM value creation framework [Colour figure can be viewed at wileyonlinelibrary.com]

Legend

Stakeholder relationships

- Direct relationships
- Direct stakeholders of focal firm
- - -> Indirect relationships
- Indirect stakeholders of focal firm

Business model aspects

- dVP Direct value proposition
- iVP Indirect value proposition
- $oVCr$ Organizational value creation
- $rVCr$ Relational value creation
- VP Value delivery
- $VCap$ Value capture

firm along supply chains and second, customers may perceive higher value if the business model also creates value for these indirect stakeholders.

The first relates to the increasing globalized outsourcing (Reuter et al., 2010) that externalizes much of a focal firm's impact on stakeholders and the natural environment onto the supply chain (e.g., Clarke & Boersma, 2017; Plambeck, 2012). The requirement of corporate sustainability to create value for the firm's stakeholders (Hörisch et al., 2014), in combination with the comprehensive nature of SBMs (Stubbs & Cocklin, 2008), calls for consideration rather than externalization of these impacts. The argument that stakeholder interests have an intrinsic value, which warrants consideration of these interests (Donaldson & Preston, 1995), extends not just to direct stakeholders (Figure 1), but also to those in the supply chain. Because of this, sustainable value creation for stakeholders (Freudenreich et al., 2020) reflects the use value from addressing the unique needs of supply chain stakeholders and the natural environment (Bowman & Ambrosini, 2000; Harrison & Wicks, 2013). This paper argues that these stakeholders are direct stakeholders of suppliers (e.g., Busse, 2016) and, therefore, indirect stakeholders of the focal firm's SBM. Suppliers' employees, for instance, are embedded in the work environment managed by the respective supplier (e.g., Egels-Zandén, 2007). While these supply chain stakeholders evaluate the use value of the outcomes and quality of the relationship to the supplier (Harrison & Wicks, 2013), it can also be argued that they may attribute this value to the focal firm of the supply chain (e.g., Hartmann & Moeller, 2014). As the findings of Harrison and Wicks (2013) imply, the perceived value for (supply chain)

stakeholders of being affiliated to an organization can extend beyond the direct affiliation to the supplier to an indirect affiliation with the focal firm. Workers at independent contract manufacturers for large electronics brands (e.g., Xu & Li, 2013), for instance, may attribute their treatment by the manufacturer to the focal firm based on their perceived indirect affiliation with the brand.

Second, value propositions for different recipients should not only be treated separately from each other, but also with regard to interlinkages, as companies with an SBM should strive to create synergies between them (e.g., Harrison & Wicks, 2013; Schaltegger et al., 2012; Tantaló & Priem, 2016). Harrison and Wicks (2013) argue that stakeholders evaluate the value they receive in the context of the value created for other stakeholders. As the example of fair-trade products like the Fairphone shows (Zufall et al., 2020), customers may hold value-driving expectations regarding the outcomes and relationship quality for other direct and indirect supply chain stakeholders and the natural environment (Harrison & Wicks, 2013). Growing evidence supports that consumer perception of the firm and its value proposition can indeed be affected by the sustainability of the supply chain (Hartmann & Moeller, 2014; Jaegler & Goessling, 2020; Nichols et al., 2019). For instance, customers may consider the working conditions at suppliers (Seuring & Müller, 2008b) and hold the focal firm accountable (Hartmann & Moeller, 2014; Parmigiani et al., 2011). Conversely, the focal firm can embed positive aspects such as the just treatment of workers in the supply chain in its customer value proposition (Harrison & Wicks, 2013; Zufall et al., 2020). The effect on customer value will be moderated by the firm's exposure to stakeholder pressures (Hofmann et al., 2014; Parmigiani et al., 2011). The focal

firm, through its value proposition, can and should actively moderate this relationship between customers and its other stakeholders.

In summary, the value proposition in an SBM should consider the needs of the focal firm's direct and indirect stakeholders along the supply chain and integrate these idiosyncratic kinds of value into the value proposition to customers. As these aspects are usually determined early in the supply chain or even require continuous maintenance (Seuring, 2011), they have important implications for value creation.

3.2 | Creating value together with supply chain stakeholders

Value creation is concerned with stakeholder relationships, activities, and resources (Osterwalder et al., 2005) required to create the value proposition. Due to the multi-directional and reciprocal nature of value creation in SBMs (Donaldson & Preston, 1995; Freudenreich et al., 2020), it needs to be discussed whether and how value creation differs for indirect stakeholders along supply chains, and how supply chain relationships can contribute to a focal firm's value creation (e.g., Touboulic & Walker, 2015).

To remedy the unsustainability emerging from indirect supply chain relationships (Miemczyk et al., 2012), SBMs create value for indirect stakeholders that initially have no direct relationships with the focal firm. The argument that these stakeholders are direct stakeholders of suppliers (e.g., Busse, 2016) suggests that the focal firm needs to manage a *triadic relationship chain* (Mena et al., 2013) between itself, the respective supplier, and the indirect stakeholder to influence value creation. Suppliers may even feel treated unjustly when bypassed by the focal firm, lowering their perception of the value of their relationship, and thereby, their willingness to reciprocate (Harrison & Wicks, 2013). This shifts the locus of value creation from individual organizations to a triad between the focal firm, supplier, and the stakeholder of the supplier. Similar to the creation of economic value for a supplier–firm dyad (e.g., Dyer & Singh, 1998), value for indirect stakeholders is created from the relationship with suppliers. Therefore, extending a relational view (Dyer & Singh, 1998) of value creation for indirect stakeholders beyond a dyadic to a triadic relationship requires involvement of the supplier in managing the relationship between the focal firm and the indirect stakeholder. As mediator of this relationship, the relationship between the supplier and its direct stakeholders (i.e., indirect stakeholders of the focal firm) becomes in itself a *complementary resource* for the value creation of the focal firm. The supplier mediates this relationship between the focal firm and its indirect stakeholders. For example, the focal firm cannot implement better working conditions for the suppliers' employees itself, it can only collaborate with suppliers to achieve this (Vachon & Klassen, 2006). While this certainly applies to internal stakeholders of suppliers (e.g., employees, Egels-Zandén, 2007), it also applies when suppliers directly affect external stakeholders (e.g., neighboring communities) or the natural environment. From this perspective, the relationship of the focal firm with its customers may

be the complementary resource for the supplier because it allows the supplier to market the value created for stakeholders. This also requires *knowledge-sharing routines* (Dyer & Singh, 1998) between supplier and the focal firm to share information about the value created for the supplier's stakeholders and consumer preferences (e.g., Solér et al., 2010; Wong et al., 2018), respectively. *Knowledge-sharing routines* and *formal and informal governance mechanisms* (such as codes of conduct) are thus ideally extended toward the stakeholders of suppliers as well.

In turn, the value creation of suppliers for indirect stakeholders contributes to the sustainability of the focal firm's value creation for customers. The sustainability of procured materials greatly affects the sustainability of the focal firm's processes and outputs (Green et al., 1996; Handfield et al., 2005). For instance, if a focal firm offers a fair-trade product, it requires fair-trade inputs from suppliers who created value for their employees and surrounding communities. However, sustainable inputs based on sustainable value creation of suppliers, such as fair-trade or organic materials, are not always readily available (Seuring, 2011). Because suppliers may initially lack the necessary capabilities, resources, and motivation, they may benefit from a focal firm's sustainability knowledge for their own practices. A focal firm may have to develop *relationship-specific assets* (Dyer & Singh, 1998) with the supplier to support value creation for customers and supply chain stakeholders. This requires both the focal firm and suppliers to invest (e.g., knowledge or resources) into sustainable supply chain practices and processes to address business model specific sustainability challenges (Touboulic & Walker, 2015).

In sum, differentiating between a focal firm's direct and indirect stakeholders requires new triadic relationships between the focal firm, suppliers, and indirect stakeholders for jointly creating sustainable value, which neither of them could have created on their own.

3.3 | Delivering customer value based on the value created for other supply chain stakeholders

With regard to sustainability in the upstream supply chain, value delivery is concerned with delivering the intangible value based on value for supply chain stakeholders and the natural environment to customers (Tantalo & Priem, 2016). Since the resources used to create the offer, as well as the value created for other stakeholders are evaluated by customers (Harrison & Wicks, 2013; Hunt, 1995), they need to be easily discernable. However, these qualities can in most cases not be physically delivered with the product, which makes them intangible *credence* qualities: Whereas *product-embedded* sustainability qualities (e.g., reparability) may be experienced in-use, intangible *supply chain-related* sustainability qualities are neither observable, nor can they be experienced by the consumer without significant effort and support by third parties (Karstens & Belz, 2006). Information about the value created for supply chain stakeholders and the natural environment is thus asymmetrically distributed between the focal firm and its customers (Akerlof, 1970). Information gaps relating to supply chain sustainability are exacerbated by the geographical distance

between customers and the respective stakeholder or local natural environment (Clarke & Boersma, 2017; Parmigiani et al., 2011). To make the value exchanges between firm, suppliers, and other stakeholders discernable, the information gaps need to be overcome with communication (Sarkis et al., 2011).

In other words, these sustainability qualities, exemplified by organic or fair-trade production, can only be perceived if information about them is delivered to customers through value communication (Abdelkafi et al., 2013). Therefore, the focal firm needs to acquire reliable information from its stakeholders about the beneficial effects of SSCM (e.g., Busse et al., 2017) which is complicated by indirect relationships to lower tiers of the supply chain (Miemczyk et al., 2012). The complexity and length of supply chains also poses a challenge to communicate in a way that is comprehensive yet parsimonious to support sustainable consumption decisions (Karstens & Belz, 2006). Because the needs of the various stakeholder groups differ, the dimensions in which value is perceived do as well (Harrison & Wicks, 2013). Due to this, any communication to customers of the value created for supply chain stakeholders requires translation into the language and dimensions relevant to customers (Viciunaite, 2020). For instance, improved working conditions for workers in a supply chain can be framed as an issue of fairness for customers. This can be considered a key requirement for the focal firm to moderate the relationship chain between the indirect stakeholders in the supply chain and its customers.

Overall, the delivery of intangible sustainability value requires more targeted communication efforts to stakeholder groups by the focal firm compared to (conventional) business models where supply chain sustainability is marginal for customer and other stakeholder value perceptions.

3.4 | Distributing financial value among supply chain stakeholders

Value capture in SBMs organizes revenue streams based on its value propositions and the cost structure resulting from value creation (Richardson, 2008) for stakeholders and the natural environment (Boons & Lüdeke-Freund, 2013). In the context of this discussion, value capture results from supply chain aspects associated with the value proposition, creation, and delivery. As the revenue model has to capture exchange value from the use value proposed to customers (Bowman & Ambrosini, 2000), it should reflect the intangible value based on the value created for stakeholders and the natural environment realized with SSCM (e.g., Crook & Combs, 2007). Whether customers perceive an additional (intangible) use, value rests on the successful value delivery through the communicative translation of stakeholder value for customers (Viciunaite, 2020). This exchange value paid by customers is then used by the firm to create monetary and non-monetary outcomes with a use value for supply chain stakeholders (Bowman & Ambrosini, 2000; Harrison & Wicks, 2013), the cost of which representing the exchange value expended by the firm.

Taking a supply chain perspective then also raises the question of how an equitable distribution of the monetary outcomes that

characterize SBMs can be achieved (Boons & Lüdeke-Freund, 2013; Griffith et al., 2006). Barney (2018) argues that in a resource-based stakeholder model of profit appropriation, all stakeholders contributing to a firm's bundle of valuable resources have a claim on profits. Since other stakeholder resources besides the ones of financiers have a use value for the firm (the potential for value creation) (Figure 1), it would be consistent to also accept claims of these supply chain stakeholders on the profits of this use value based on their marginal contribution (Barney, 2018). Additionally, value creation can be idiosyncratic to a specific firm-supplier relationship (Dyer & Singh, 1998) or even a triad of the focal firm, the supplier, and its stakeholder. Referring to the value creating role of supply chain actors and the relevance of intangible sustainability customer value, both suppliers and their value-adding stakeholders (e.g., the employees of suppliers), therefore, have claims on the focal firm's profits. The focal firm plays a key role in the sharing of profits in relationship chains because it possesses more accurate information about the value of its offers compared to stakeholders (Barney, 2018). This empowers the focal firm to negotiate the distribution of captured value (Crook & Combs, 2007) under consideration of distributive justice (Griffith et al., 2006).

This profit-sharing approach is different to a conventional business model where contracts might be based on fixed payments defined before profits of the focal firm are known. As profits are only finally determined after all costs have been deducted from the exchange value captured from customers, supply chain stakeholders' participation in the profits created with their support is not a conventional cost factor. It rather needs to be seen as a contribution-based residual profit sharing (e.g., Griffith et al., 2006). This supports the goal of balancing stakeholder value creation over several points in time (Harrison et al., 2010; Lüdeke-Freund et al., 2020). Here, stakeholders are considered at two stages: they receive an initial exchange value when they contribute to value creation and a proportional share once the use value of their contribution to the firm is known. Achieving such stakeholder participation in profits would therefore require new profit-sharing agreements with suppliers that ensure they share their profits with their stakeholders as well (Pagell & Wu, 2009). These agreements could specify conditions for profit participation, complementing conventional fixed payments contracts with a component based on marginal contribution and sustainability performance (e.g., Beske & Seuring, 2014; Crook & Combs, 2007). Alternatively, the focal firm could commit the residual profits to other activities that create non-monetary types of value for stakeholders. This could both incentivize suppliers to improve sustainability performance by enhancing perceptions of distributive justice (Griffith et al., 2006; Harrison & Wicks, 2013), and improve the firm's competitiveness in crucial factor markets (Barney, 2018).

In summary, the profit-sharing argument suggests a method to provide a focal firm's direct and indirect stakeholders with benefits in return for their value creating contribution to the business model (Freudenreich et al., 2020). It also shows the limits of applying conventional business model understanding (e.g., Richardson, 2008) to an SBM, where various stakeholders have claims on profits. Here, the

goal is to balance the distribution of value captured by the various direct and indirect stakeholders with regard to their contributions to value creation.

3.5 | Conclusion of analysis

This section investigated complementarities between the organization-centric SBM perspective and the inter-organizational perspective of SSCM. First, compared to a conventional business model, the value proposition of an SBM is not limited to the customer, but also includes direct and indirect stakeholders and the natural environment. The stakeholder and ecological value offered along the supply chain can be embedded into the customer value proposition as well. Second, adopting a relational view shifts the origin of value creation from the focal firm to relationship chains between the focal firm, suppliers, and stakeholders of suppliers. Value creation extends beyond the boundaries of the focal firm toward collaboration with suppliers and *n*-tier suppliers. Third, to deliver customer value, the focal firm has to act as mediator to overcome information asymmetries and differences in value perceptions between itself, its suppliers, and indirect stakeholders as well as between itself and its customers. Fourth, balancing financial value capture of supply chain stakeholders entails different mechanisms of profit-sharing based on their relative contribution to value creation leading to profit creation. A key finding is thus that – instead of being a separate element in SBMs (e.g., Boons & Lüdeke-Freund, 2013) – supply chain and stakeholder issues intersect with all elements of SBMs. Additionally, SBMs consist of polyadic and mediated relationships among a variety of stakeholders along the supply chain. The implications of adopting a relational supply chain perspective for managing the SBM components are summarized in Table 2.

In conclusion, in an SBM, the value proposition, value creation, value delivery, and value capture are fulfilled by the focal firm *for* and in relationships *with* the direct and indirect stakeholders in the supply chain.

3.6 | Illustration of the framework using the example of Fairphone

The following example illustrates the conceptual linkages and framework outlined in the preceding sections. Fairphone, a sustainability pioneer in the smartphone industry, addresses the unsustainability of smartphone production, consumption, and disposal through its business model (Wernink & Strahl, 2015). The SBM addresses the supply chain, *inter alia*, by improving working conditions at its suppliers' factories and integrating conflict-free minerals sourced from conflict-laden regions into its smartphone (Zufall et al., 2020).

The *value proposition* (VP in Figure 2) addresses Fairphone's indirect stakeholders (suppliers' workers and communities) which are directly related to suppliers in the first tier (contract manufacturers) as well as in the lowest tier (mines) of the supply chain. Based on their

TABLE 2 Linkages between SBM elements and the supply chain

SBM element	Linkage to supply chain
Value proposition	<ul style="list-style-type: none"> - An SBM offers value to customers, other direct stakeholders of the focal firm, and indirect supply chain stakeholders, as well as the natural environment. - A sustainable customer value proposition reflects the value created for other direct and indirect supply chain stakeholders and the natural environment.
Value creation	<ul style="list-style-type: none"> - Supply chain stakeholders contribute to value creation as part of the business model of the focal firm. - Value for indirect supply chain stakeholders and the natural environment is created and managed jointly in triadic relationship chains between the focal firm, suppliers, and indirect stakeholders. - The sustainability of inputs from suppliers is determined by their value creation for indirect supply chain stakeholders and the natural environment and contributes to a focal firm's value creation for customers.
Value delivery	<ul style="list-style-type: none"> - Customer value based on the sustainability of the supply chain is an intangible credence quality with high information asymmetry between the focal firm and its customers. - A focal firm delivers more value when it translates value created for supply chain stakeholders and the natural environment into (intangible) use value meaningful to customers.
Value capture	<ul style="list-style-type: none"> - The revenue streams in an SBM capture the customer use value based on value created for supply chain stakeholders and the natural environment. - An SBM organizes profit sharing for supply chain stakeholders according to their contribution to value creation.

justified expectation for fair employment conditions (e.g., Harrison & Wicks, 2013), these indirect supply chain stakeholders value the outcomes from Fairphone-initiated improvements, such as skill development or improved workplace conditions. At the same time, the firm name indicates “fairness” as key customer value aspect of the device based on improvements made for indirect stakeholders in the supply chain (Zufall et al., 2020). The fairer Fairphone's indirect stakeholders are treated by Fairphone's suppliers, the more customers will evaluate Fairphone favorably as being fair toward its direct and indirect stakeholders (Harrison & Wicks, 2013). As a counterexample, the supplier negligence leading to situations such as the 2010 Foxconn employee suicide crisis has been negatively attributed to conventional competitors of Fairphone (Clarke & Boersma, 2017; Xu & Li, 2013). This illustrates that without a fair supply chain, Fairphone would only have a conventional value proposition like any other smartphone company.

In terms of *value creation* (VCr in Figure 2), Fairphone's manufacturing is completely outsourced to a vertically disintegrated supply chain (Wernink & Strahl, 2015), which means that the workers addressed by Fairphone have an indirect relationship to the firm. Fairphone, therefore, collaborates with its contract manufacturers, and *n*-tier suppliers (Wernink & Strahl, 2015). As a result, suppliers create value jointly with Fairphone for Fairphone's indirect supply chain stakeholders: Fairphone and its suppliers link the relationships to Fairphone's customers and to their workers, respectively, together as *complementary resources* (Dyer & Singh, 1998) in order to create and market the improved employment conditions that workers value. In this regard, the investment in a worker welfare fund as well as in social assessment and certifications (Wernink & Strahl, 2015) represent *relationship-specific assets* (Dyer & Singh, 1998) that create value for the workers of one specific supplier. The *knowledge-sharing routines* (Dyer & Singh, 1998) between Fairphone and its suppliers allow Fairphone to learn about relevant stakeholder issues in the supply chain and to create the necessary transparency (Zufall et al., 2020). These interactions within the supply chain are also supported by formal and informal *governance mechanisms* (Onofrei et al., 2020) in the form of multi-stakeholder initiatives and the fair-trade scheme with regard to conflict minerals (Zufall et al., 2020).

The importance of intangible fair supply chain aspects in the value proposition require an extension of *value delivery* (VD; see Figure 2) from physical distribution of tangible products alone to additional communication of intangible aspects. The improved working conditions in suppliers' factories and mines are often not easily observable for customers. Interestingly, these information asymmetries between Fairphone and customers were among the reasons why Fairphone had been initially launched as awareness campaign (Wernink & Strahl, 2015). Fairphone delivers the customer value of being fair toward stakeholders by making the contributions of stakeholders to value creation transparent and identifiable for its customers (Wernink & Strahl, 2015). Extensive customer communication raises awareness for supply chain issues and translates (Viciunaite, 2020) the value Fairphone creates for supply chain stakeholders, such as good working conditions, into value that consumers understand, such as fairness of the offered product (Zufall et al., 2020). The transformation from campaign to company underscores that communication around a tangible product helps consumers understand how the value other stakeholders create and receive relates to the use value they receive.

With regard to the *value capture* (VCap in Figure 2), the additional use value created for miners and workers is reflected in the exchange value (i.e., price) of the Fairphone, which is made transparent for customers through a cost breakdown (Wernink & Strahl, 2015). Fairphone can capture this exchange value for its other stakeholders from customers who perceive additional use value from the fair treatment of stakeholders. Achieving a balanced value capture among supply chain stakeholders is difficult due to the supply chain's complexity and the comparatively low power of Fairphone in the supply chain. However, Fairphone's use of fair-trade gold exemplifies how a higher proportion of the proceeds can be shared throughout relationship chains, for example, with miners.

In sum, Fairphone illustrates how the sustainable management of business models and supply chains can be inextricably linked together in practice.

4 | DISCUSSION AND CONCLUSION

This paper brings two key concepts of corporate sustainability together that have so far been largely disconnected: the management of sustainable supply chains and SBMs. In this regard, this research contributes threefold to the discourse surrounding these two strategic concepts: First, to better integrate supply chain aspects into the management of an SBM, it introduces a distinction between direct stakeholders and indirect stakeholders and highlights the importance of the latter for SBMs. Second, it discusses a new mediating role of suppliers that enables relational value creation *for* and *with* these indirect stakeholders. Third, the subsequent extension of the relationship perspective on SBMs beyond dyadic and direct relationships toward considering relationship chains supports analysis and management of these indirect value creation relationships in SBMs.

4.1 | Conceptual implications

The starting point for this paper was the broad, yet unspecific or implicit acknowledgement in the literature that supply chains are relevant for SBMs (e.g., Boons & Lüdeke-Freund, 2013; Lozano, 2018; Pagell & Wu, 2009). However, extant literature makes insufficient use of the integration potential of the business model concept (Lüdeke-Freund & Dembek, 2017; Ritter & Lettl, 2018) to integrate insights from the SSCM field that could advance the systemic nature of SBMs (e.g., Evans et al., 2017; Stubbs & Cocklin, 2008). In this regard, it does not explain sufficiently *why* the supply chain needs to be considered for the sustainability of the business model. In response, this paper offers two arguments: first, from a stakeholder theory perspective (e.g., Donaldson & Preston, 1995; Harrison & Wicks, 2013; Hörisch et al., 2014), this paper argues that the comprehensive and systemic scope of SBMs (Stubbs & Cocklin, 2008) requires consideration of the needs of indirect supply chain stakeholders (e.g., fair treatment of suppliers' employees) next to direct ones (e.g., fair treatment of focal firm's employees). The SBM literature with its focus on direct stakeholder relationships and organization-centric value creation suggests that the more indirect a stakeholder relationship, the less important it would be for the business model. However, the existence of sustainability issues located with more distant stakeholders (e.g., Miemczyk et al., 2012; Seuring & Müller, 2008a) in the upstream supply chain highlights the strong importance of inter-organizational value creation for indirect stakeholders in SBMs. Based on this argument, a new distinction between value creation with and for direct and indirect stakeholders in the supply chain is introduced allowing for a more comprehensive representation of SBMs (e.g., Stubbs & Cocklin, 2008). Second, from an instrumental perspective, it is proposed that the value created for indirect stakeholders in relationship chains can be

synergistically integrated into the focal firm's customer value proposition (e.g., fair-trade products). This adds new indirect relationships between indirect supply chain stakeholders and customers that exceed the previous emphasis on dyadic and direct firm–stakeholder or firm–customer relationships (e.g., Freudenreich et al., 2020). Additionally, this finding demonstrates how supply chain performance in terms of stakeholder value creation can lead to differentiation and competitive advantage under high exposure (Parmigiani et al., 2011). The example of Fairphone illustrates how value creation for indirect stakeholders (i.e., factory workers and miners of suppliers) can become a key differentiator of a firm's sustainable value proposition.

Based on this finding that an SBM needs to address indirect supply chain stakeholders as well, current research on SBMs does not explain *how* value for these indirect stakeholders can be created. Regarding the role of suppliers in SBMs, extant research takes an organization-centric view (Boons & Lüdeke-Freund, 2013; Cosenz et al., 2020; Lozano, 2018), describing aspects such as selected suppliers and supplied resources only. This view only reflects a transactional and dyadic firm–supplier relationship without considering suppliers' relationships and role for the value creation to their stakeholders. From a relational view (Dyer & Singh, 1998; Touboulic & Walker, 2015), the analysis here suggests that indirect stakeholders in the supply chain are connected to the business model through suppliers. Therefore, it cannot be assumed that value creation for these indirect stakeholders can be managed without the involvement of respective suppliers. For instance, Fairphone cannot affect the working conditions of the employees of suppliers without collaborating with the respective suppliers. Different to value creation for direct stakeholders that is usually the implicit focus of SBM research (e.g., Freudenreich et al., 2020), this paper proposes that value for indirect stakeholders can only be created jointly by the focal firm and suppliers through a collaborative relationship. Just as business models require collaboration with distributors to deliver value to customers (Osterwalder et al., 2005), they require collaboration with suppliers (Pagell & Wu, 2009; Sharfman et al., 2009; Vachon & Klassen, 2006) to deliver value to indirect supply chain stakeholders. Fairphone, for instance, needs to engage its suppliers in order to realize fair employment conditions embedded in its customer value proposition. In turn, this elevates the importance of suppliers for value creation in an SBM, also in comparison to a conventional business model, and implies that value-creating processes for other stakeholders are managed collectively, similar to the relational view of inter-firm rent-generation (Dyer & Singh, 1998). Hence, relational value creation for indirect stakeholders can be supported by building relational capabilities (Parmigiani et al., 2011) and relationship-specific inter-organizational resources (Gold et al., 2010). Additionally, the focal firm needs to engage with suppliers on every tier, or rely on suppliers' double agency (Wilhelm, Blome, Bhakoo, & Paulraj, 2016) or third parties to reach all suppliers (Tachizawa & Wong, 2014) as well as stakeholders relevant to its business model.

Overall, these findings expand the previous conceptualizations of SBMs, which focus on direct and dyadic firm–stakeholder relationships (e.g., Freudenreich et al., 2020). However, not only are the outcomes

for stakeholders and suppliers decisive for the sustainability of a business model, but also the indirect relationships that drive these outcomes. The proposed framework extends the relationship view of Freudenreich et al. (2020) by including polyadic and indirect relationships (e.g., Mena et al., 2013) between the focal firm, its suppliers, customers and other stakeholders. Through this differentiated depiction of stakeholders involved in an SBM that Freudenreich et al. (2020) call for, it provides improved analytical utility and extends previous frameworks. Going beyond multi-tier supply chain frameworks focusing on the relationship between the focal firm and suppliers alone (e.g., Mena et al., 2013; Tachizawa & Wong, 2014; Wilhelm, Blome, Wieck, & Xiao, 2016; Yen, 2018), indirect stakeholders are also active business model participants in the framework. While the framework is generic and parsimonious, it can and needs to be adapted to the specific firm or industry context when analyzing an SBM, as shown with the example of Fairphone.

Regarding the transformational aspect in SBMs (Schaltegger, Lüdeke-Freund, & Hansen, 2016; Stubbs & Cocklin, 2008), the findings imply a strong dependency (Pfeffer & Salancik, 1978) on transformation within supply chain partners when implementing SBMs. While previous literature has emphasized the “horizontal” impact on competing market actors (Schaltegger, Lüdeke-Freund, & Hansen, 2016), this finding suggests vertical transformational influence on the business models of suppliers as well. Because radical business model transformation may require transformation of suppliers' business models, the supply chain becomes a new lever for sustainability transformations. Affecting suppliers' business models through non-traditional supplier development (Pagell et al., 2010) might create spill-over effects for competitors and, thereby, indirectly affect their sustainability. This extends the “horizontal” processes through which a firm can influence the business models of incumbents (e.g., Schaltegger, Lüdeke-Freund, & Hansen, 2016) with a spill-over process.

4.2 | Practical implications

The framework supports practitioners in broadening the scope of business models with regard to the roles and contributions of suppliers and indirect supply chain stakeholders, as suggested by Miemczyk et al. (2012). By adapting the generic template, strategic managers can gain a better understanding of value-creating and value-receiving stakeholders as well as potential mediating suppliers and relationship chains that need to be managed. The discussion here suggests that companies pursuing SBM innovation need to consider hotspots of ecological and social impacts in their supply chain rather than focusing on direct impacts alone. This will not only help avoiding risks of negative stakeholder exposure (e.g., Hofmann et al., 2014; Parmigiani et al., 2011), but also allow the firm to differentiate its value proposition. Companies should attempt to create synergies between value for stakeholders and intangible customer value. This may even be a necessary condition to sustain the business model economically considering that supply chain impacts and costs may no

longer be externalized (Boons & Lüdeke-Freund, 2013; Stubbs & Cocklin, 2008). Particularly businesses with supply chains in low-cost countries (e.g., Lueg et al., 2015) could consider this and develop approaches similar to organic or fair-trade certification and communication (Jaegler & Goessling, 2020). Managers can utilize tools such as the sustainable purchasing portfolio (Pagell et al., 2010) to assess the criticality of commodities to value creation and hence, which parts of the supply chain need to be managed as part of the SBM.

Depending on the extent to which the supply chain needs to change, business model innovators need to include both supply chain managers of the focal firm and supply chain partners in the innovation process (e.g., Lüdeke-Freund, 2020; Roome & Louche, 2016) early on to avoid intra- and inter-organizational tensions (Griffith et al., 2006). Strategic managers need to perceive supplier relations as key driver of their business models' value creation and incentivize rather than constrain supply chain managers in pursuit of social and ecological outcomes together with suppliers (e.g., Preuss, 2005). Rather than shifting responsibility to suppliers (e.g., Lueg et al., 2015), companies can build and leverage the relationships to first and lower-tier suppliers to shift attention toward creating value for their stakeholders.

4.3 | Future research

In terms of future research, it needs to be acknowledged that supply chains may actually resemble complex supply networks rather than linear chains (e.g., Choi & Krause, 2006; Miemczyk et al., 2012). While the objective of this paper was to establish the argument that SBMs and supply chains are interconnected from the perspective of a focal firm, future studies may examine the implications of adopting an SBM for the relationships among the entire range of supply chain stakeholders such as NGOs and *n-tier* suppliers. Complementing research on the co-evolution of horizontally-competing SBMs (Schaltegger, Lüdeke-Freund, & Hansen, 2016), research could pursue the vertical co-evolution of suppliers' SBMs emanating from a focal firm's business model innovation for sustainability further. In recognition of the current academic work on circular business models and their overlap with closed-loop/reverse supply chains (Lüdeke-Freund et al., 2018), the framework can be further developed through the integration of circular and closed-loop supply chain management. To further explore the framework's implications empirically, future research could analyze whether different value propositions, for example, emphasizing the product itself versus the way it was produced, drive specific supply chain activities. To conclude, the framework proposed here provides conceptual and practical implications that develop SBMs toward an "integrative field" (Lüdeke-Freund & Dembek, 2017, p. 1676) for the comprehensive management of sustainability.

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