

ORIGINAL ARTICLE

The role of purchasing and supply management in diffusing sustainability in supply networks: A systematic literature review

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Abstract

One of the most difficult supply network challenges facing companies today is how to diffuse sustainability not only among their direct (first-tier) suppliers but also throughout their supply networks. Although a growing body of research has been dedicated to addressing this challenge, the role of purchasing and supply management (PSM) in sustainable supply network development remains underexplored. In this paper, we present a systematic review of the literature on the role of PSM in the diffusion of sustainability in supply networks. We analysed 133 peer-reviewed papers published in 21 journals in the field of PSM. We scrutinized the theories, methods and levels of analysis used in sustainable PSM research, classified the practices for diffusing sustainability in supply networks and identified the role of PSM in the diffusion of sustainability. Accordingly, we put forward a set of propositions that link diffusion practices—and the role of PSM in these practices—with embedded and peripheral sustainability and suggest future research directions.

KEYWORDS

diffusion, purchasing, supply networks, sustainability, systematic literature review

1 | INTRODUCTION

Companies cannot achieve sustainability on their own, as they rely heavily on their supply networks for the development, production and delivery of goods and services to consumers (Andersen & Skjoett-Larsen, 2009; Krause et al., 2009). Therefore, they need to diffuse sustainability not only among their direct (first-tier) suppliers but also throughout their supply networks (Meqdadi et al., 2017). We use the term “diffusion” with a meaning similar to that of *cascading* (Marttinen & Kähkönen, 2022; Villena & Gioia, 2018) or *extending* (Vachon & Klassen, 2006) to refer to the sustainability practices that companies aim for their suppliers to adopt. However, whereas cascading implies a hierarchical top-down process, diffusion suggests a

less rational, unidirectional process. This concept emphasizes both immediate, or first-tier, suppliers and indirect, or sub-tier, suppliers in the wider supply network (Meqdadi et al., 2019; Tate et al., 2013).

Companies use various practices to diffuse sustainability. For example, research has shown that some companies implement sustainable sourcing practices by implementing codes of conduct and certification (Wilhelm et al., 2016) in the supplier selection process, whereas others engage in supplier monitoring through supplier audits or supplier self-assessment questionnaires (Villena, 2019). However, the question that arises is who is responsible for managing these practices.

Given the cross-disciplinary challenges of achieving sustainability, several business functions need to be involved (Adams

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et al., 2016). However, purchasing and supply management (PSM) should play a key role. This realization is supported in practice, for example, by the creation of the Sustainable Purchasing Leadership Council (www.sustainablepurchasing.org) in 2013 and the Sustainable Procurement Pledge (www.spp.earth) in 2019, which have gained considerable momentum in a relatively short time. The increasing maturity and professionalization of PSM are reflected not only in practice but also in its development as an academic discipline (Ellram et al., 2020). Whereas PSM used to be considered a low-level, tactical business function primarily aimed at delivering (cost) savings (Spina et al., 2013), it has evolved into a strategic function with a considerably broader remit and is now widely considered critical to developing sustainable supply networks (Schultze et al., 2019). However, PSM's role in organizations has traditionally been linked to risk mitigation by safeguarding operations from material shortages and supply disruptions (Kraljic, 1983), even though PSM is now also seen as a contributor to value-adding activities, such as innovation, that require tapping into suppliers and wider supply networks (Narasimhan & Narayanan, 2013; Wagner, 2012).

Sustainable PSM refers to “[...] the consideration of environmental, social, ethical and economic issues in the management of the organization's external resources in such a way that the supply of all goods, services, capabilities and knowledge that are necessary for running, maintaining and managing the organization's primary and support activities provide value not only to the organization but also to society and the economy” (Miemczyk et al., 2012, p. 489). Managing an organization's external resources involves upstream *supply networks*, which include all companies that participate directly or indirectly in supplying industrial inputs to a focal company with or without its knowledge (Choi et al., 2001). Besides differentiating supply networks from supply chains by clearly limiting the former to those that provide inputs (i.e. upstream actors), this suggests a lack of visibility and control over sub-tier suppliers due to the inherent complexity of supply networks (Choi et al., 2001). Moreover, focusing on supply networks rather than supply chains, which also extend downstream, assigns PSM a central role in managing the external resources provided by supply networks. However, as Villena (2019) argues, PSM is, in fact, a “missing link” in research on how companies cascade sustainability to supply networks. This does not imply that there is a scarcity of research into sustainable PSM per se but that there may be important gaps in our understanding of PSM's role in diffusing sustainability in supply networks. Villena's (2019) observation is also supported by a lack of systematic literature reviews (SLRs) related to the role of PSM in diffusing sustainability. Although several SLRs have dealt with sustainable supply chain management (SCM) (e.g. Cloutier et al., 2020; Gimenez & Tachizawa, 2012; Srivastava, 2007), none have focused on the role of PSM. Moreover, although the few SLRs on sustainable PSM have focused on various issues, such as definitions and measures (Miemczyk et al., 2012) and the use of theories (Johnsen et al., 2017), none have focused on PSM's role in managing *practices* for sustainability diffusion in supply networks.

This is an important gap because of the critical role of PSM in this process.

We aimed to fill this gap by conducting an SLR to identify the role of PSM in managing a set of practices for diffusing sustainability in supply networks and to develop a framework based on these practices. We established the theoretical and methodological foundations for this analysis by identifying the theories and methods used in extant research and examined the theoretical perspectives and methodological choices adopted according to different levels of analysis. Based on this analysis, we put forward propositions concerning whether the various practices aim to *do less harm* (e.g. risk mitigation activities) or *eliminate harm* (Montabon et al., 2016) and, thus, whether they are related to peripheral or embedded sustainability (Aguinis & Glavas, 2013). Unlike peripheral sustainability, which is an add-on to other practices and is considered separately, embedded sustainability relies on a firm's core competencies and integration of sustainability into its strategy, routines and operations (Aguinis & Glavas, 2013). Embedded sustainability is by nature context specific because an organization needs to build on its unique core competencies to achieve it. Finally, we offer guidance for scholars who seek to conduct research on sustainability diffusion in supply networks by suggesting future research directions in terms of themes, theories and methods that can advance the field.

We adopted a systematic approach to the literature search and analysis to synthesize the results of the extant research. Given the large number of papers on sustainability published in the past few years, we deemed this systematic approach necessary for identifying and analysing studies with a specific focus on the topic of interest.

2 | METHODOLOGY

According to Tranfield et al. (2003), the key steps in a systematic review include planning, conducting the review and reporting and disseminating the findings. The aim of this method is to identify the current state of research and its key contributions to a specific research question (i.e. the aim of the review). A review should adopt a replicable, transparent and scientific process and follow certain steps that need to be clearly defined and described (Tranfield et al., 2003). In this review, we systematically analysed peer-reviewed publications on sustainable supply chains with a focus on PSM published in English-language business, management and accounting journals and included in the Scopus database. To identify relevant papers, we conducted a search of article titles, abstracts and keywords using search terms categorized into three groups:

- supply chain/supply network; (suppl*) AND (chain OR network) AND
- sustainable/environment/social/CSR/responsible/green; (green OR environment* OR sustain* OR social OR responsib* OR CSR) AND

- procurement/sourcing/purchasing; (procure* OR sourc* OR purchas*)

We used combinations of these three groups to ensure that as many relevant articles as possible would be identified.

We decided to include articles published in the past 25 years based on Johnsen et al.'s (2017) observation that publications on sustainable PSM increased from the late 1990s onwards, with only sporadic publications before this time, dating back to Gravereau et al.'s (1978) study. We included papers published up to 2020 when we concluded the search process and started the analysis.

The first stage of the search process yielded 5009 papers. We narrowed down this large volume by focusing on papers published in the top 32 journals in the field of PSM research. The selection was based on three major reviews: two general reviews of PSM to identify key PSM journals (Spina et al., 2013; Zsidisin et al., 2007) and one review focusing on sustainable PSM (albeit with a different focus; Miemczyk et al., 2012). This filtering process reduced the list to 1553 papers published in 26 journals, as we identified no papers in some of the 32 selected journals.

Subsequently, two researchers engaged in the screening process. First, they checked the titles of the papers for relevance, identifying 461 candidate papers. Then, they screened the abstracts of these papers to exclude articles that did not concern organizational purchasing, such as papers on techniques for emission reduction (e.g. technical utilization of mining waste and carbon integration) or papers concerning the consumer/marketing end of the supply chain (e.g. impact on customer loyalty and usage behaviour)—in other words, purely technical articles and papers related to modelling. In case of disagreement, the researchers read the entire papers in question and then decided whether to exclude them after a discussion. In this process, 21 of the 154 papers were excluded. Thus, 133 papers published in 21 journals were included in the analysis (Figure 1).

Figure 2 shows the evolution of publications on sustainable SCM with a specific focus on PSM from 1996 to 2019. This period witnessed an increasing number of publications, with a peak in 2016 (21 papers).

3 | DATA ANALYSIS AND CODING

We began the coding process by entering data on the 133 papers into an Excel spreadsheet. Two researchers coded all the papers independently. This process was followed by regular meetings between the four researchers to evaluate and finalize the codes. We commenced the analysis by examining theoretical backgrounds, dimensions of sustainability, methodologies and levels of analysis. We

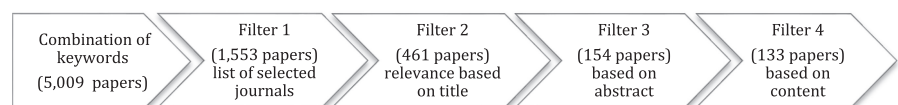
then analysed and classified sustainability practices, focusing on the role of PSM.

We structured the practices into a process framework inspired by Johnsen et al. (2018) that considers the processes involved in sourcing, including selecting and approving new suppliers, and the continuous cycle of monitoring, managing and improving suppliers. We chose this framework as the basis for our analysis because it covers the entire PSM life cycle, from sourcing to continuous supplier performance monitoring, collaboration and development. Monczka et al. (2002) and van Raaij (2016) proposed similar models that comprise sourcing processes and continuous supplier evaluation, management and development. A recent review (Bäckstrand et al., 2019) classified purchasing process models as hybrid linear cyclical models. We chose this type of process model to capture not only the process of sourcing, which is inextricably linked to the processes of finding, selecting and evaluating suppliers, but also the post-sourcing supplier management processes.

We adapted the PSM process model to the context of sustainability because we wanted to discern the different ways in which companies could diffuse sustainability among their immediate suppliers and in their wider supply networks (Meqdadi et al., 2019). To this end, we developed the process framework based on six sustainable sourcing and supply management practices proposed by Akhavan and Beckmann (2017). Although these constituted the starting point, new categories emerged from our analysis. Akhavan and Beckmann (2017) distinguished between social and environmental issues in studies on supplier screening and development. However, because we identified overlaps when using this approach in our analysis, we took the entire sustainability aspect into consideration. Other important categories in our framework were sourcing, supplier development and co-creation with suppliers. The six categories included in our framework were (1) internal integration and governance, (2) sourcing, (3) supplier monitoring, (4) supplier development, (5) joint development and co-creation with suppliers and (6) stakeholder management. Thus, this framework adds internal integration and stakeholder management to Johnsen et al. (2018) framework. In line with Akhavan and Beckmann (2017) and other scholars (e.g. Meqdadi et al., 2020), we refer to these as *practice categories*, each of which includes specific *practices*.

Figure 3 shows the framework that provided the basis for our analysis of the practice categories related to the diffusion of sustainability in supply networks. Our specific interest was the role of PSM in managing the practices included in these six categories. The role of PSM in the diffusion of sustainability starts with sourcing practices, followed by continuous supplier monitoring, supplier development and joint development and co-creation practices. The continuous nature of these practices is emphasized by their

FIGURE 1 Systematic literature review process.



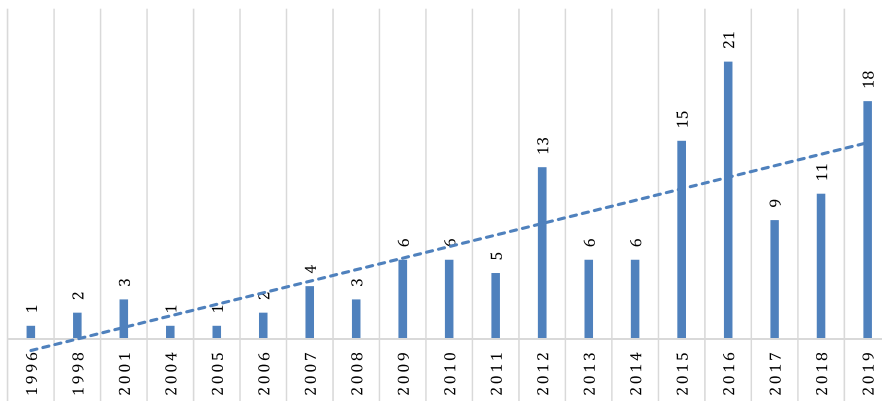


FIGURE 2 Growth in publications on sustainable supply chain management with a purchasing and supply management focus. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/beer.12622)]

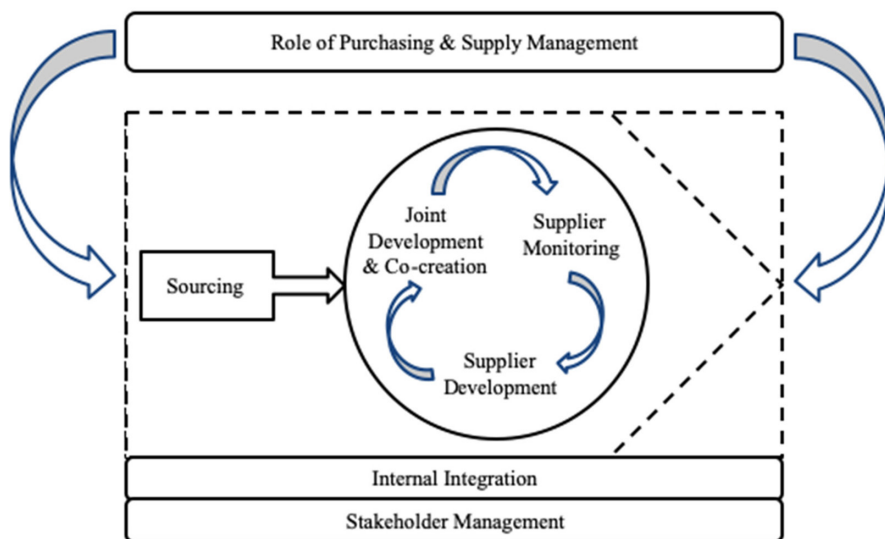


FIGURE 3 Conceptual framework for the diffusion of sustainability in supply network. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/beer.12622)]

circularity. The arrows from the top indicate that PSM can contribute to all these practices.

4 | FINDINGS

In this section, we begin by presenting a brief overview of the results of the analysis of the theories, methods and levels of analysis used in sustainable PSM research. This provides the theoretical and methodological foundation for our analysis of practices related to the diffusion of sustainability in supply networks and the role of PSM in this process.

4.1 | Theoretical backgrounds

As shown in Figure 4, many articles referred to theories in their literature review sections but did not specify theories used in the respective studies. In the remaining 51% of the studies, institutional theory was the most commonly used theoretical perspective, followed by the resource-based view (RBV) and stakeholder theory. For example, based on institutional theory,

Hoejmose et al. (2014) argued that the decision to implement green purchasing and supply chain practices and the choice between them were contingent upon institutional pressures (mimetic, normative and coercive). Liu et al. (2016) adopted an RBV perspective to explain the associations between supply chain capabilities and key elements of environmental management strategies. Pullman and Wikoff (2017) used stakeholder theory and a life cycle assessment (LCA) perspective to understand the environmental impacts of stakeholder-driven sustainable purchasing policies in institutional settings. Other theories, such as organizational theory, the industrial marketing and purchasing (IMP) interaction approach, practice theory and learning theory, are categorized here as “other” because relatively few studies used them. For example, adopting an IMP interaction approach, Meqdadi et al. (2017) sought to understand sustainability spread as a change process affecting different supply network actors and the impact of power and trust on the diffusion process. Compared with firm-specific theoretical perspectives, such as the traditional RBV and organizational theory, theories that focus on understanding multiple network actors or stakeholders have been more widely used in sustainable PSM research (Johnsen et al., 2017).

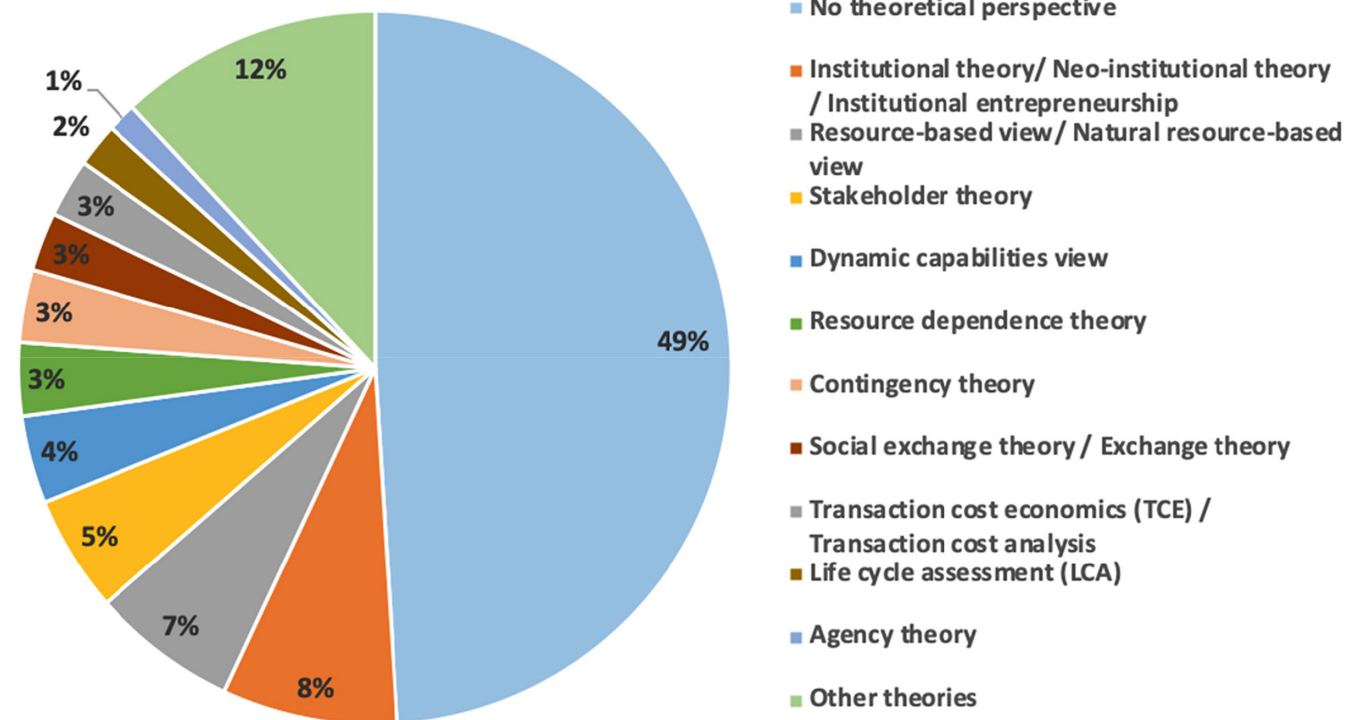
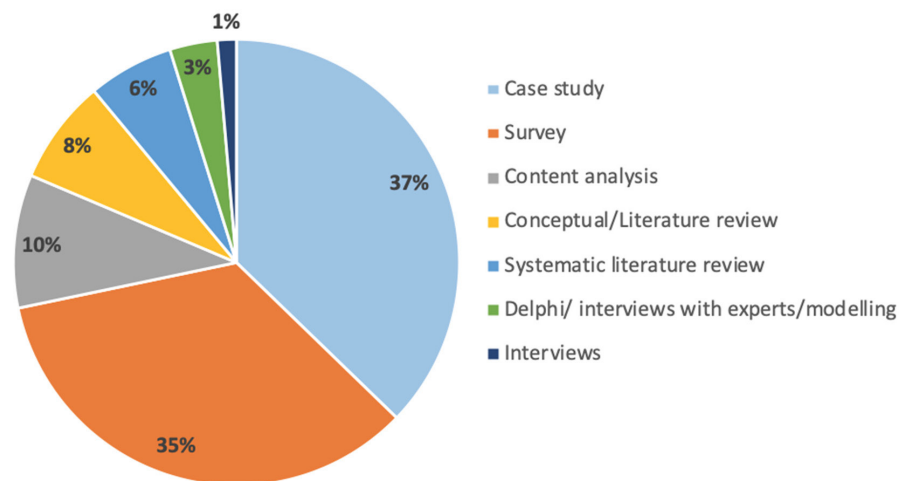


FIGURE 4 Proportion of papers based on theoretical background. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

FIGURE 5 Proportion of papers based on the method of research. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]



4.2 | Research methods and levels of analysis

As shown in Figure 5, the most frequently used methods were case studies and surveys. However, unlike Spina et al.'s (2013) review, which identified surveys as the most widely used tools in general PSM research, we found that case studies were considerably more common in sustainable PSM research. These two types were followed by content analyses based on annual reports or dedicated CSR or sustainability reports. Other common types were conceptual studies, SLRs, Delphi studies and interview-based studies.

We identified four levels of analysis employed in the included studies: (1) the firm level, concerning firms' internal functions; (2) the dyadic level, concerning firms' relationships with first-tier suppliers; (3) the supply chain level, concerning extra-dyadic, multi-tier

involvement; and (4) the supply chain plus stakeholder level (supply network), including not only multiple levels of the supply chain but also other stakeholders, such as NGOs and public authorities. Following Crespín-Mazet and Döntenwill (2012) and Johnsen et al. (2017), we considered stakeholders part of the supply network due to their increasingly active involvement in diffusing sustainability in supply networks—for example, through supplier audits.

Figure 6 shows the methods applied to the various levels of analysis. Some studies used more than one method—for example, combining a literature review with a content analysis. Thus, the total number of studies shown in Figure 6 is higher than the number of papers included in this review.

Wilhelm et al. (2016) exemplified how in-depth case studies can be used to gain rich insights into supply chain sustainability,

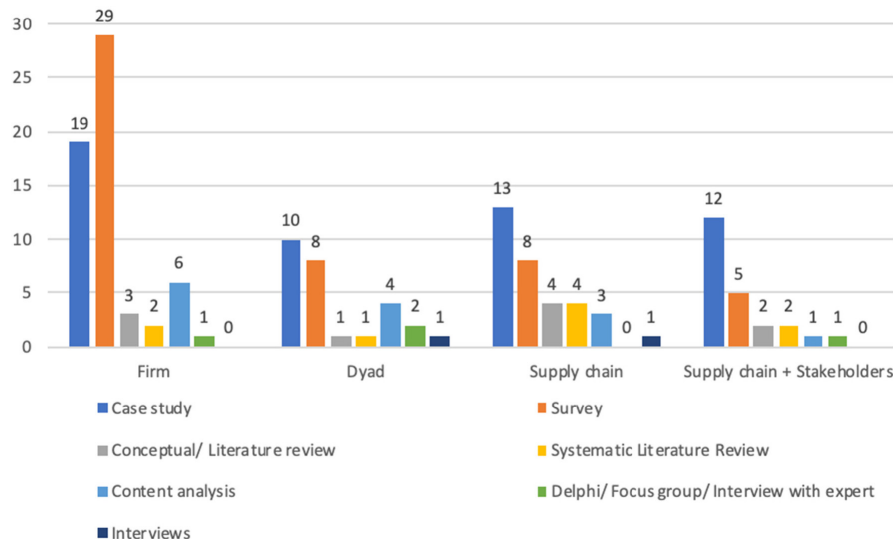


FIGURE 6 Different levels of analysis and applied methodologies. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/beer.12622)]

highlighting the importance of multi-tier involvement for achieving compliance along the supply chain. Most literature reviews, including SLRs, focused on the supply chain level of analysis, although they did not report empirical findings from any level of analysis.

4.3 | Sustainability dimensions

Sustainable PSM not only encompasses the dimensions of environmental, social and economic sustainability but also separates the ethical dimension. Most of the analysed studies focused on one or two of these dimensions. As shown in Figure 7, few studies (23%) focused on the social aspects of sustainability identified by Miemczyk et al. (2012), even fewer (7%) focused exclusively on social sustainability and only 2% focused on social and ethical sustainability. Despite the importance of ethical sustainability for the PSM function, only 20% of the analysed studies included this dimension, either alone or with others. Finally, only 11% of the studies considered all three dimensions.

Table 1 is complementary to Figure 7 and shows a range of typical research issues within each sustainability dimension. Many studies investigated green SCM practices and performance effects (e.g. Green et al., 2012; Large & Gimenez Thomsen, 2011), with some linking them to green product design (Li et al., 2016). Green supplier selection as part of the sourcing process was another popular topic in the wider literature and the literature focusing on PSM (e.g. Igarashi et al., 2013, 2015). As noted above, we found relatively few studies focusing specifically on social sustainability. Table 1 highlights a few studies focusing, among others, on socially sustainable supplier selection (Ehrgott et al., 2011) and worker conditions (Lund-Thomsen & Lindgreen, 2014), typically in developing countries (i.e. countries with “low-cost” sourcing). Ethical issues in purchasing were extensively explored (e.g. Carter, 2000; Cooper et al., 2000) and included topics such as using buyer power to abuse small suppliers (Simangunsong et al., 2016) and conflicts of interest (Handfield &

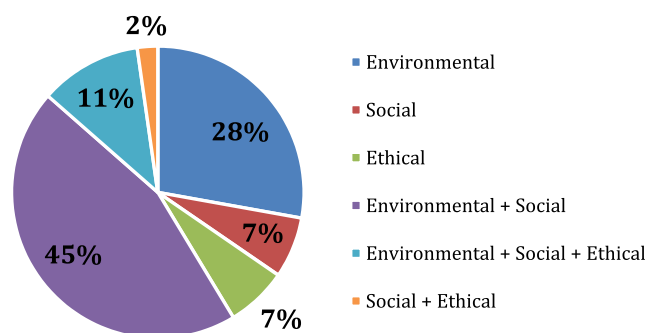


FIGURE 7 Proportion of papers across the different dimensions of sustainability. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/beer.12622)]

Baumer, 2006; Husser et al., 2014). Finally, some studies adopted a more holistic perspective.

4.4 | Overview of practices related to the diffusion of sustainability in supply networks

Figure 8 shows the number of studies related to each practice category. As some studies covered more than one category, the sums shown in Figure 8 are greater than the number of analysed studies. The most investigated practice category was sourcing, followed by internal integration, supplier development, external stakeholder management, supplier monitoring, and joint development and co-creation.

Inspired by Akhavan and Beckmann (2017), we identified specific practices and grouped them into the six categories shown in Table 2.

A summary of each of the six practice categories is provided below.

1. *Internal integration*. This category included practices such as the introduction of key performance indicators (KPIs) for internal sustainability measurement and management, including the PSM function, and the adoption of certification related to social

TABLE 1 Dimensions of sustainability in papers under study.

Dimensions of sustainability	Examples	References
Environmental	<ul style="list-style-type: none"> Green SCM (GSCM) practices Improvement of environmental performance through development of green products, design, manufacturing and logistics Green supplier selection and sourcing Green purchasing (procurement) and supply in private and public sector 	<p>Börjeson et al. (2015); Green et al. (2012); Hojmosse et al. (2014); Large and Gimenez Thomsen (2011)</p> <p>Green et al. (2012); Handfield et al. (1997); Knight et al. (2015); Li et al. (2016); Liu et al. (2016)</p> <p>Bala et al. (2008); Igarashi et al. (2013); Igarashi et al. (2015); Rueda et al. (2017)</p> <p>Appolloni et al. (2014); Carter and Carter (1998); Mosgaard (2015); Preuss (2001); Pullman and Wikoff (2017)</p>
Social	<ul style="list-style-type: none"> Social side of CSR, e.g. poor labour/working conditions Socially responsible supplier selection 	<p>Lund-Thomsen and Lindgreen (2014); Kourula and Delalieux (2016)</p> <p>Ehrgott et al. (2011); Thornton et al. (2013)</p>
Ethical	<ul style="list-style-type: none"> Ethical purchasing Ethical behaviour in supplier selection and ethical trade Ethical issues in managing SC uncertainty: (1) collusion among suppliers, (2) unethical influences on government policy and (3) abuse of power of large buyers over small suppliers 	<p>Carter (2000); Cooper et al. (2000); Handfield and Baumer (2006); Husser et al. (2014)</p> <p>Griffis et al. (2014); Reuter et al. (2012); Perry et al. (2015)</p> <p>Simangunsong et al. (2016)</p>
Environmental and/or social and/or ethical	<ul style="list-style-type: none"> CSR strategy/practices considering both environmental and social and/or ethical perspectives Sustainable and responsible purchasing/procurement Sustainable SCM 	<p>Andersen and Skjoett-Larsen (2009); Airike et al. (2016); Haleem et al. (2017); Knight et al. (2017); Maloni and Brown (2006); Perry and Towers (2013); Preuss (2009); Quarshie et al. (2016); Rotter et al. (2014); Snider et al. (2013)</p> <p>Chkanikova (2016); Crespin-Mazet and Döntenwill (2012); Ferri et al. (2016)</p> <p>Amann et al. (2014); Dabhikar et al. (2016); Giunipero et al. (2012); Gualandris et al. (2014); Macchion et al. (2018)</p>

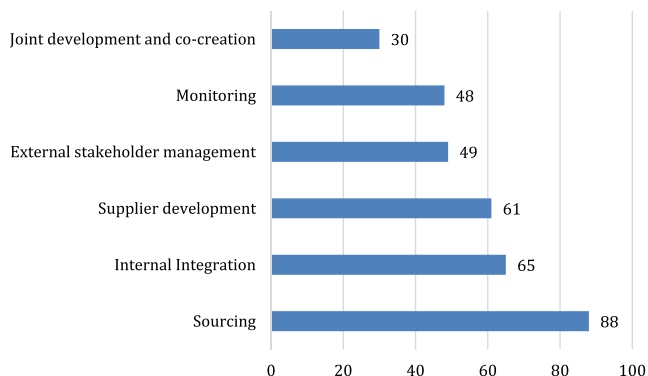


FIGURE 8 Frequency of sustainable purchasing and supply management practice categories studied. [Colour figure can be viewed at wileyonlinelibrary.com]

and environmental sustainability (e.g. SA8000 and ISO14000; Ciliberti et al., 2008; Macchion et al., 2018). A range of internal sustainability practices were related to setting standards, developing internal capabilities and sharing and communicating sustainability practices across functional areas and at different organizational levels.

2. *Sourcing*. This category refers to the process of finding, selecting and evaluating suppliers (Bäckstrand et al., 2019), either as market qualifiers or order winners, which can be based on sustainability criteria (Wilhelm et al., 2016). As shown in Figure 8, sourcing was the most studied practice category, dominated by extensive research into green or sustainable supplier selection and evaluation. The preliminary step in this practice was supplier qualification, which should include sustainability-related elements (Green et al., 1996). Among them, certification (such as ISO14000 or EMAS) was a typical criterion considered in the qualification process (Preuss, 2009). A frequently mentioned sourcing practice was requiring suppliers to adhere to sustainability guidelines and codes of conduct (Tate et al., 2012; Wilhelm et al., 2016). Another stream of research focused on sustainability risk assessment, considering the potentially detrimental impact of suppliers' unsustainable behaviours on purchasing firms (Foerstl et al., 2010).
3. *Supplier monitoring*. This category refers to the assessment of suppliers' sustainability compliance and performance. Specific practices identified in the analysed studies included environmental supplier audits (Zsidisin & Siferd, 2001), self-assessment questionnaires, supplier self-reporting, supplier product testing

TABLE 2 Practice categories and practices for the diffusion of sustainability in supply networks.

Practice categories	Practices	Exemplar references
Internal integration	Organizational policies/certifications/guidelines/life-cycle assessment	Griffis et al. (2014); Macchion et al. (2018); Ciliberti et al. (2008)
	Internal training	Bala et al. (2008); Andersen and Skjoett-Larsen (2009)
	Top management commitment	Akhavan and Beckmann (2017); Knight et al. (2017); Griffis et al. (2014)
	Internal environmental actions/remanufacturing/recycling/waste reduction	Subramanian and Gunasekaran (2015); Testa et al. (2016)
	Rewards and incentives for employees	Akhavan and Beckmann (2017); Gualandris et al. (2014)
	Sustainability KPIs and target setting	Lo and Shiah (2016); Macchion et al. (2018)
	Cross-functional collaboration	Testa et al. (2016); Walker and Jones (2012)
	Internal communication	Mosgaard (2015); Subramanian and Gunasekaran (2015)
	Sustainability position, e.g. sustainability manager/field experts	Foerstl et al. (2010); Mosgaard (2015); Peters et al. (2011)
	Centralized sustainability department/function	Mosgaard (2015)
Learning from external best practices	Gualandris et al. (2014)	
Sourcing	Guidelines & codes of (sourcing) conduct	Wilhelm et al. (2016); Preuss (2009); Andersen and Skjoett-Larsen (2009)
	Certifications & standards; sustainability reports/supplier policies	Maloni and Brown (2006); Perry et al. (2015); Preuss (2009)
	Supplier risk assessment	Foerstl et al. (2010); Preuss (2009); Villena (2019)
	Sustainability supplier selection & evaluation criteria	Foerstl et al. (2010); Green et al. (1996)
Supplier monitoring	Supplier audits	Zsidisin and Siferd (2001); Wilhelm et al. (2016); Meqdadi et al. (2017); Villena (2019); Saunders et al. (2019)
	Verification of compliance issues	Chkanikova (2016); Reuter et al. (2010)
	Supplier self-assessment questionnaires	Bowen et al. (2001); Meqdadi et al. (2017); Mosgaard (2015); Preuss (2001); Tachizawa et al. (2015); Villena (2019)
	Vendor/supplier rating	Bowen et al. (2001); Hollos et al. (2012); Macchion et al. (2018)
	Product testing & sampling	Boström (2015); Börjeson et al. (2015)
Communication of monitored results	Hollos et al. (2012); Leppelt et al. (2013); Tachizawa et al. (2015)	
Supplier development	Collaboration & sharing of best practices	Andersen and Skjoett-Larsen (2009); Börjeson et al. (2015)
	Supplier training	Akhavan and Beckmann (2017); Hoejmose et al. (2014); Villena (2019)
	Incentives & rewards—Sanctions & filtering	Preuss (2009); Quarshie et al. (2016)
	Extending relationships	Perry et al. (2015); Knight et al. (2015)
	Follow-up actions & corrective action planning	Leppelt et al. (2013); Tate et al. (2012)
Profit or asset sharing with suppliers	Akhavan and Beckmann (2017); Pagell et al. (2010)	
Joint development and co-creation	Joint product design/green packaging/eco-design/green design development	Amann et al. (2014); Crespín-Mazet and Döntenwill (2012)
	Joint green manufacturing development	Hollos et al. (2012); Knight et al. (2015)
	Joint green logistics improvement	Pullman and Wikoff (2017); Simangunsong et al. (2016)
Stakeholder management	Collaboration with NGOs/non-business actors	Akhavan and Beckmann (2017); Crespín-Mazet and Döntenwill (2012)
	Facing governmental policies/standards/regulations/legislation	Igarashi et al. (2015); Knight et al. (2015)
	Engagement in stakeholder initiatives	Rueda et al. (2017); Chkanikova (2016)
	Philanthropic practices	Perry and Towers (2013); Rueda et al. (2017)
	Joint or industry or cross-industry initiatives and actions to tackle sustainability	Meehan and Bryde (2015); Mosgaard (2015); Quarshie et al. (2016); Simangunsong et al. (2016)

(Börjeson et al., 2015; Boström, 2015) and supplier, or "vendor", rating (Bowen et al., 2001; Preuss, 2001). Meqdadi et al. (2017) investigated the use of monitoring practices, including audits and self-assessment questionnaires, to reduce exposure to supplier non-compliance (Chkanikova, 2016; Reuter et al., 2010) and the role of the focal firm's power and trust. Given the widespread use of such practices to demonstrate compliance and due diligence, it is rather surprising that among the studies focusing on PSM, monitoring was the second least frequently investigated practice category.

4. *Supplier development.* Even when focusing on sustainability, this category is similar to supplier development in general, as it concerns efforts to improve supplier capabilities through developmental programmes. As an alternative to simply discontinuing cooperation with non-compliant suppliers, supplier development aims to help suppliers achieve compliance. Sometimes described as supplier mentoring (Gimenez & Tachizawa, 2012), supplier development for sustainability involves helping suppliers understand the relevance of and need for the implementation of sustainability practices. In the PSM literature, supplier development practices took the form of incentive schemes (Villena, 2019), training and profit sharing, as well as sanctions and penalties (e.g. threatening to cut ties with or "filter out" suppliers). Supplier development was also closely associated with long-term supplier relationship management and partnering (Andersen & Skjoett-Larsen, 2009; Lo & Shiah, 2016).
5. *Joint development and co-creation.* The practices in this category aimed to use the focal firm's and potential suppliers' complementary capabilities to co-develop, among others, new green product designs or packaging, joint green manufacturing and logistics projects (Crespin-Mazet & Dontenwill, 2012; Pullman & Wikoff, 2017). The main objectives of joint sustainable product development were to minimize the use of non-renewable materials and increase the use of renewable materials, to avoid the use of toxic and hazardous materials (Li et al., 2016), to increase the use of recycled materials and to reduce waste (Tate et al., 2012). Buyers and suppliers could jointly develop product specifications to design more sustainable products (Saunders et al., 2015; Zsidisin & Siferd, 2001). As shown in Figure 8, this was the least studied practice category in our sample.

6. *Stakeholder management.* This category involved engagement with diverse external stakeholders, such as NGOs, governmental institutions (Akhavan & Beckmann, 2017; Rueda et al., 2017), industrial associations (Kourula & Delalieux, 2016; Normann et al., 2017), business communities (Meehan & Bryde, 2015), competitors and trade associations (Akhavan & Beckmann, 2017). Some studies on PSM examined the role of stakeholder pressure on companies' decisions to invest in sustainability and to consider it in their PSM practices. For example, Tachizawa et al. (2015) found that strict governmental regulations influenced firms' willingness to engage the PSM function in monitoring supplier compliance to avoid penalties for sustainability non-compliance. We also found PSM studies investigating how some stakeholders led the development of sustainability guidelines, codes of conduct or regulations for companies. For example, Font et al. (2008) examined how industrial associations were involved in introducing new criteria for sustainable purchasing policies. Normann et al. (2017) investigated the roles of codes of conduct and certification proposed by industry initiatives such as the Sustainable Apparel Coalition (2016). Villena (2019), Marshall et al. (2019) and Foerstl et al. (2018) explored the role of PSM in interacting with stakeholders to implement sustainability practices in supply networks. This stream of research highlighted the interplay between PSM and external stakeholders, such as NGOs and regulatory authorities. However, few of the analysed studies specifically focused on the active role of PSM in collaborating with stakeholders to achieve sustainability diffusion.

4.5 | The role of PSM in sustainability diffusion practices

Although PSM managers have often participated in interviews and surveys, few of the studies in our sample focused on the role of the PSM function in developing sustainable supply chains or networks. For example, Rueda et al. (2017) investigated green sourcing and green purchasing in the agri-food industry but did not focus on the role of the PSM function. Indeed, apart from reporting empirical findings based on PSM respondents, 50% of the analysed studies lacked a focus on PSM, as the PSM respondents were not asked about the PSM function (Figure 9).

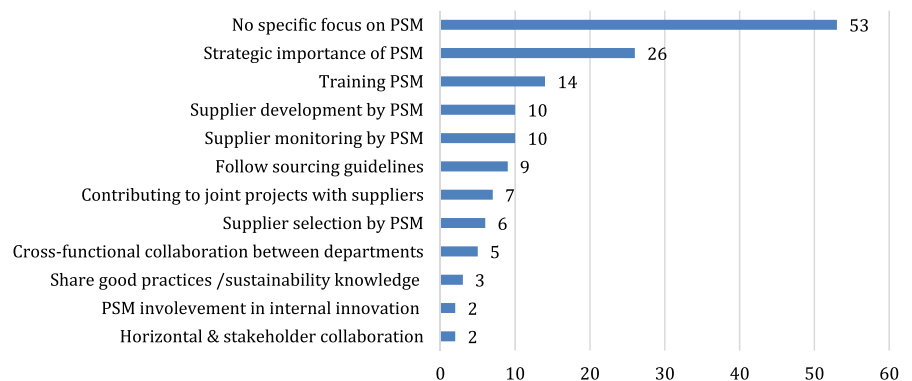


FIGURE 9 The role of purchasing and supply management in diffusion of sustainability in supply networks. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

Among the studies that focused on the role of PSM in sustainability, 26 were concerned about how PSM could become more strategic by focusing on sustainability (Figure 9). For example, some studies found that a strategic PSM function increased operational performance and offered a competitive advantage, especially through sustainability (Hollos et al., 2012; Yu et al., 2017). Similarly, González-Benito et al. (2016) showed that green purchasing practices improved overall purchasing performance. Large and Gimenez Thomsen (2011) and Ruparathna and Hewage (2015) found that strategic PSM required long-term planning to support a sustainable business strategy and direct participation in the decision-making process to implement sustainability practices. Overall, although a few studies examined the strategic importance of the PSM function for implementing sustainability, only some of them focused on diffusion practices, which we report below.

Fourteen studies explored internal PSM development and training for acquiring new skills and competencies. For example, Yu et al. (2017) highlighted the importance of having a well-trained PSM function for increasing awareness of environmental, social and ethical issues. Bals et al. (2019) categorized current and future PSM competencies, noting the increasing importance of sustainability and digitization competencies. In a related study, Schultze et al. (2019) focused on competencies for sustainable PSM and highlighted the importance of functional-, cognition-, social- and meta-oriented competencies. Walker and Jones (2012) focused on the role of PSM in supporting and training key suppliers and building strong relationships with them. However, this required the allocation of sufficient resources. Likewise, the PSM function fostered sustainability development by encouraging first-tier suppliers to work with small local businesses, contracting with voluntary organizations or replacing hazardous materials in product design (Preuss, 2009). More recently, Villena (2019) investigated how companies built sustainable supply networks by pressuring first-tier suppliers to cascade their sustainability requirements to lower-tier suppliers. She examined three interlinked PSM (or procurement) processes—assessing, training and incentivizing—and found that a lack of internal collaboration between PSM and other departments and external collaboration with other stakeholders prevented the creation of sustainable supply networks. Her research thus demonstrated the key role of PSM in the successful diffusion of sustainability in supply networks.

Despite the abundance of studies on green or sustainable supplier selection and evaluation, surprisingly few studies examined PSM's role in establishing sustainability criteria for supplier selection and monitoring, although studies on supplier monitoring, including codes of conduct and supplier auditing and self-assessments, showed an increasing trend. Marshall et al. (2019) applied a power perspective to analyse the adoption of socially responsible procurement (e.g. through supplier monitoring and training) by first- and second-tier suppliers, concluding that where unmediated power had a positive influence, the use of mediated power had no significant impact. The challenge of achieving

sustainability through practices such as supplier monitoring and development in the extended supply network attracted increasing attention (Meinlschmidt et al., 2018; Villena, 2019). Some studies also focused on the role of third parties, such as NGOs and local governments (Foerstl et al., 2018; Marshall et al., 2019; Saunders et al., 2019) in diffusing sustainability.

Seven studies investigated the involvement of PSM in joint development and co-creation with suppliers to create greener product designs (e.g. Bowen et al., 2001; Yen & Yen, 2012). Carter and Carter (1998) focused on PSM involvement in internal innovation projects related to the reduction, recycling, reuse and substitution of materials. Other themes included cross-functional collaboration with the sustainability department (Testa et al., 2016) or the R & D department (Green et al., 1998). Some studies also examined horizontal collaboration in which the PSM function directly interacted with subsidiaries on sustainable issues (Mosgaard, 2015) or collaboration with voluntary organizations in which PSM was directly involved (Preuss, 2009). Figure 10 summarizes the findings with specific examples of how PSM contributed to sustainability diffusion practices, mapping these to the conceptual framework.

5 | DISCUSSION AND FUTURE RESEARCH AVENUES

This section is divided into three parts: (1) linking diffusion practices to embedded and peripheral sustainability, (2) future directions for researching PSM's role in sustainability diffusion and (3) future directions for theories, methods and levels of analysis.

1. Diffusion practices: Embedded or peripheral sustainability?

Our findings reveal a small but slowly growing body of research dedicated to studying the role of PSM in diffusing sustainability in supply networks. The most investigated practices are related to sourcing, including the use of sustainability criteria for supplier qualification and selection, guidelines, codes of conduct, certification, standards, ethical sourcing codes, sustainability reports and supplier policies (e.g. Preuss, 2009; Wilhelm et al., 2016). The literature has also stressed the importance of practices for continuous supplier monitoring and development.

However, sourcing and supplier monitoring and development activities are fundamentally concerned with risk mitigation and therefore aim to achieve peripheral sustainability (Aguinis & Glavas, 2013)—in other words, to *do less harm* rather than *eliminating harm* (Montabon et al., 2016). Not only are these activities based on the assumption that the diffusion of sustainability takes place in a top-down cascading fashion in which the focal manufacturer controls its suppliers and imposes its standards and policies by exploiting its position of power (Marshall et al., 2019; Marttinen & Kähkönen, 2022), but they are also principally intended to minimize non-compliance and avoid public exposure. These activities do not aim to change what companies produce and market to consumers,

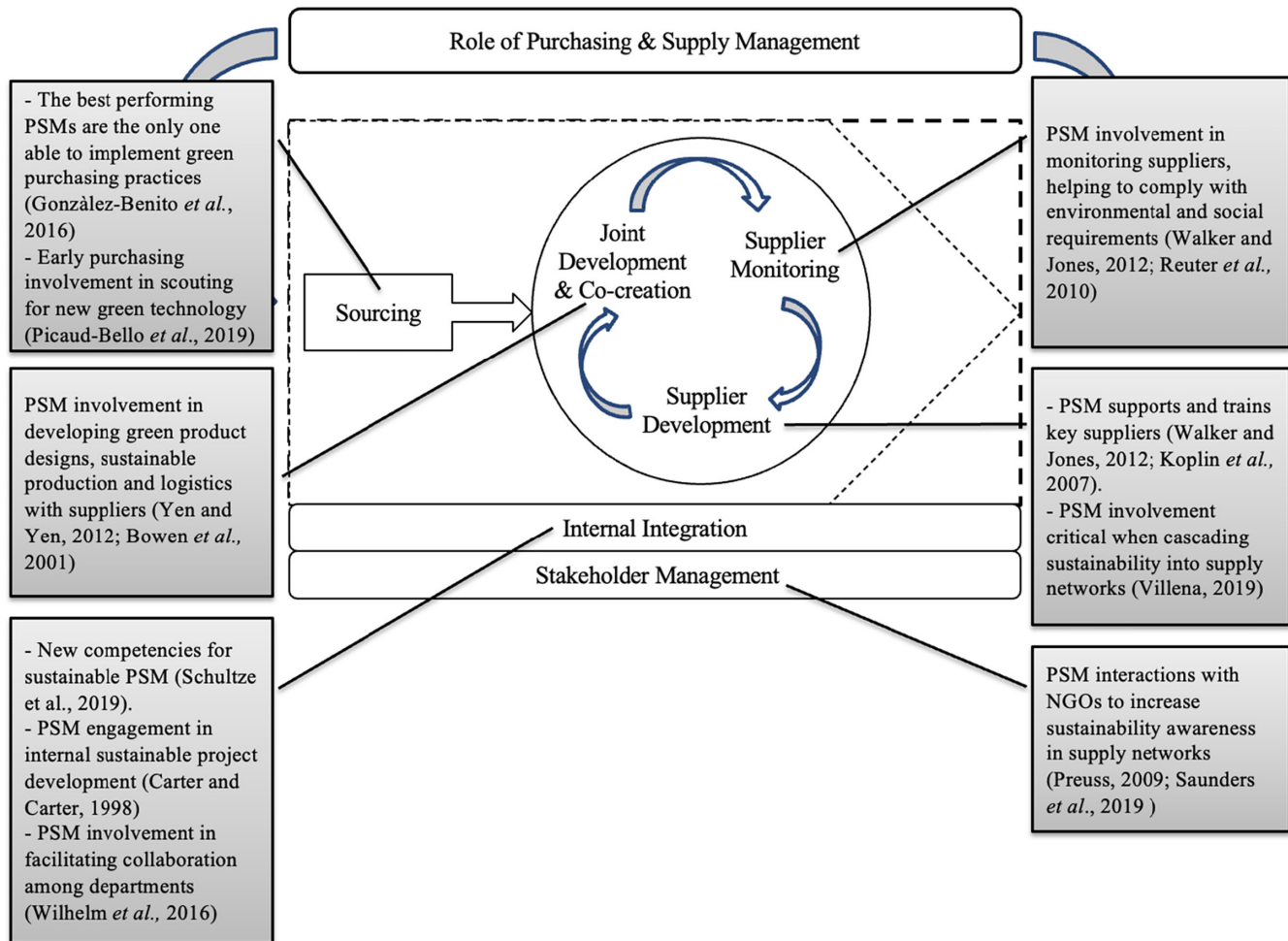


FIGURE 10 The role of purchasing and supply management in diffusing sustainability. [Colour figure can be viewed at wileyonlinelibrary.com]

which may still be fundamentally unsustainable. Therefore, we put forward the following proposition:

Proposition 1. *Sourcing and supplier monitoring and development aim to reduce rather than eliminate harm, thus leading to peripheral sustainability.*

Our findings reveal that the joint development and co-creation of green products involving the PSM function is the least investigated aspect of sustainability. These joint projects typically revolve around green product design, green packaging, green manufacturing and green logistics (e.g. Amann *et al.*, 2014; Crespín-Mazet & Döntenwill, 2012). In contrast to sourcing, monitoring and development activities, this does not concern imposing conditions on suppliers but tapping into suppliers' specialized capabilities that are critical to innovation (Wagner, 2012).

Sustainable innovations constitute an essential part of industrial green transitioning and lie at the heart of a company's core business. These may take the form, for example, of designing out toxic product components or materials or developing recycled packaging materials in collaboration with suppliers in pursuit of a circular business model. Thus, joint development and co-creation

through supply networks aim to achieve embedded sustainability (Aguinis & Glavas, 2013). Accordingly, we put forward the following proposition:

Proposition 2. *Joint development projects are aimed at sustainable innovations through supply networks to eliminate rather than merely reduce harm, thus leading to embedded sustainability.*

Sustainability diffusion requires interaction with multiple supply network actors, as well as external stakeholders. However, stakeholder management, which is aimed precisely at interacting with external stakeholders to achieve sustainability diffusion, is one of the least studied topics. A central problem that limits the promotion of sustainability throughout supply networks is the lack of collaboration between PSM and other internal functions—that is, the CSR or sustainability and R & D departments—as well as external stakeholders. For example, in “horizontal collaboration”, the PSM function directly interacts with subsidiaries to address sustainable issues (Mosgaard, 2015). Our findings show that little is known about the role of PSM in interacting with external stakeholders. Some research suggests that PSM can be part of the interaction with stakeholders,

such as NGOs, governments and competitors, in initiatives to increase sustainability awareness in supply networks (Preuss, 2009). PSM clearly needs to respond to pressures from a wide range of stakeholders. However, it is less clear whether it plays an active role in interactions with stakeholders, which are required for embedded sustainability. This is also in line with the Sustainable Development Goals (SDGs), which require the active engagement of various stakeholders. Although many reviews have addressed various aspects of sustainability, they have not touched specifically upon SDGs (Jamali et al., 2022). This indicates a direction for research on sustainable supply chain management with a focus on the role of PSM.

2. PSM's role in diffusion practices aimed at embedded and peripheral sustainability

Our findings reveal a growing body of research into PSM's role in sustainability diffusion practices (see Figure 10). However, we argue that these practices mainly concern peripheral sustainability—that is, sourcing (Picaud-Bello et al., 2019), supplier monitoring (Reuter et al., 2010; Walker & Jones, 2012) and supplier development (Koplin et al., 2007; Villena, 2019). Whereas some studies on these practices have focused on the dyadic level of buyer–supplier relationships (Ruparathna & Hewage, 2015; Yu et al., 2017), others have highlighted the critical role that PSM plays beyond the dyadic level by enabling the cascading of requirements to wider supply networks (Marshall et al., 2019; Marttinen & Kähkönen, 2022). Villena (2019) demonstrated this most clearly by showing that unless the buyer's PSM unit directly engages the supplier's PSM unit, the supplier's PSM personnel are not informed of the buyer's requirements and therefore cannot transmit them to their own suppliers. Thus, PSM becomes a missing link in the diffusion process. The challenge of impacting sub-tier suppliers is rapidly becoming vitally important due to the introduction of supply chain due diligence regulations that require companies—depending on size—to identify risks of rights violations by first-tier suppliers and, where relevant, sub-tier suppliers. These risks concern both social and human rights, such as child or forced labour and conflict minerals, and environmental destruction, such as deforestation (see, for example, the OECD's due diligence guidelines for various industries: <https://www.oecd.org/corporate/mne/>).

Few studies have explored PSM's involvement in joint green product development and co-creation with suppliers (e.g. Bowen et al., 2001; Yen & Yen, 2012) and internal cross-functional collaboration for developing sustainable product solutions (e.g. Green et al., 1998; Testa et al., 2016). The fact that most research has focused on PSM's involvement in practices aimed at peripheral sustainability is not surprising, since it is well-established that PSM's primary responsibility is to secure supplies—that is, goods and services—from the supply base and to protect against supply risks (Kraljic, 1983). As some of the analysed studies show, PSM also plays an important role in mitigating sustainability-related risks and protecting against supplier misconduct but requires mature supplier management capabilities for supplier sustainability risk assessment and classification (Foerstl et al., 2010).

Only recently has PSM embraced its responsibility for implementing sustainability practices. As some of the analysed studies show, this requires a strategic and mature PSM function (e.g. Hollos et al., 2012; Yu et al., 2017). PSM's active involvement in practices aimed at peripheral sustainability is only natural. However, this does not mean that it cannot make substantial contributions to embedded sustainability, particularly by engaging in sustainable innovation sourcing.

As Narasimhan and Narayanan (2013) argued, green innovations are supply network enabled—that is, they require sourcing or *scouting* green technologies from suppliers located in or on the fringes of existing supply networks (Yan et al., 2015). Scouting innovations is not only natural but also challenging task for PSM, as this is typically the domain of R & D (Constant et al., 2020). There is increasing research on PSM's contribution to innovations (Johnsen et al., 2022), including radical or disruptive innovations, which are increasingly driven by the need to promote sustainability. PSM can play a critical role in managing innovation sourcing and scouting processes for such innovations (Picaud et al., 2022). Accordingly, we put forward the following propositions:

Proposition 3a. *As responsible for sourcing, supplier monitoring and supplier development, PSM enables the diffusion of peripheral sustainability in supply networks.*

Proposition 3b. *PSM can enable the development of sustainable innovations by contributing to sourcing and scouting processes, thus diffusing embedded sustainability in supply networks.*

3. Future directions for researching PSM's role in sustainability diffusion

An obvious suggestion for future research is to focus on the practice categories that have been the least investigated but are at the same time considered highly relevant to and effective in diffusing embedded sustainability with the purpose of doing *no harm* rather than *less harm*. Our results show that the role of PSM remains largely unresearched. Therefore, we suggest that more research be conducted on the role of PSM in facilitating joint sustainability projects with suppliers, such as projects aiming to develop green packaging or technology or redesigning production processes and technologies to improve working conditions. Future research may also explore whether and how PSM can assume a more active role in interacting with external stakeholders—for example, by advising on the development of new standards or regulations.

In distinguishing between embedded and peripheral sustainability, Aguinis and Glavas (2013) focused on companies' internal organization. However, since sustainability today is mainly a supply chain challenge (Andersen & Skjoett-Larsen, 2009; Krause et al., 2009), we propose extending their conceptualization to PSM. Future research could explore the role of the PSM function in moving beyond superficial sustainability practices to integrate sustainability into not

only companies' daily operations and routines but also their supply networks (Montabon et al., 2016).

Research has also shown that PSM can be involved in sharing good practices in the supply chain (Börjeson et al., 2015) and in sustainability training (Koplin et al., 2007). However, does PSM simply execute what other functions dictate, or does it take the lead—for example, in developing sourcing guidelines (Goebel et al., 2012; Leppelt et al., 2013; Preuss, 2009)? There is clearly a broad scope for further research on PSM's internal contributions to sustainability. It would be pertinent to investigate how PSM can be equipped to take on such a leading internal role—for example, by examining new competence requirements (Schultze et al., 2019).

Finally, future research should go beyond studying diffusion merely as a cascading process in which sustainability spreads in a top-down fashion from the focal company to its suppliers one tier at a time. This view is based on the assumption that powerful focal companies are in the driver's seat (Marshall et al., 2019; Marttinen & Kähkönen, 2022) when, in reality, other supply network actors pushing for sustainability may be both more powerful and more knowledgeable. As Johnsen et al. (2022) showed, sustainability may not flow only from the focal company to upstream suppliers but also in the opposite direction—what they described as “up against the tide”. This may lead to conceptualizing diffusion as a non-ordered process of “contagion” (Mena & Schoenherr, 2020). As part of such a research agenda, the role of first-tier suppliers as bridge builders (Wilhelm et al., 2016) or non-focal companies warrants further study.

4. Future directions for theories, methods and levels of analysis

Our results show that few studies have adopted a theoretical perspective. Therefore, the first suggestion for future research is to increase the use of theories to guide studies on sustainability diffusion in supply networks and strengthen their theoretical contributions.

Our findings also reveal the most commonly used theories, which can indicate directions for future research. Institutional and stakeholder theories are clearly appropriate for addressing research questions concerning sustainability drivers and stakeholder pressures because they help explain stakeholders' motivation and salience. Understanding what drives companies to engage in sustainability in different circumstances is more about *why* than *how* they go about implementing sustainability practices (Pagell & Wu, 2009). Therefore, institutional theory can be used to understand the drivers of sustainability, although on its own, it may have limited explanatory power in terms of how companies promote sustainability in supply networks. Stakeholder theory is often used in combination with institutional theory (e.g. Snider et al., 2013). Considering that promoting sustainability in supply networks requires collaboration with diverse (including non-regulatory) stakeholders, such as NGOs and industry associations, stakeholder theory has the potential to further advance the field.

Our review shows that the RBV has also been frequently used. However, we believe that natural RBV (NRBV), an RBV derivative, has the potential to make more important contributions. Whereas

the classic RBV largely focuses on the protection of firms' internal resources and the ways in which these resources can offer competitive advantages by being valuable, rare, inimitable and non-substitutable (thus, distinctive or core resources), the NRBV, as proposed by Hart (1995), focuses on firms' relationship with the natural environment—that is, natural resources. In particular, this view focuses on three interconnected strategies: pollution prevention, product stewardship and sustainable development. Therefore, it may be suitable for the study of circular—or closed-loop—supply chain development (Miemczyk et al., 2016), including the emerging concept of circular procurement (Alhola et al., 2019). For instance, the NRBV can help understand how relationships with new supply chain actors, such as companies offering recycling services, can be developed to close the loop and how such new and complex relationships can provide sustained competitive advantages. Li et al.'s (2016) study is a good example of how stakeholder theory can be combined with the NRBV.

Future studies may also employ agency theory (Jensen & Meckling, 1976), especially in examining different actors', or agents', roles in diffusing sustainability, which we recommended as an avenue for future research in the previous subsection. For example, Wilhelm et al. (2016) used agency theory to reveal the contingency factors affecting the coupling of the secondary agency role with first-tier suppliers. Our research shows that agency theory has rarely been used. However, its focus on monitoring as a way of minimizing risks through outcome- or behaviour-based approaches (Eisenhardt, 1989) indicates its usefulness for studying supplier monitoring and development practices.

The use of theoretical perspectives is linked to the levels of analysis and research methods used. Our findings show that, whereas older research focused mostly on buying firms or first-tier suppliers, the need to gain visibility of the extended multi-tier supply chain has recently been acknowledged and reflected in research methods (Wilhelm et al., 2016). Some authors have argued that understanding sustainability requires a higher level of analysis (Johnsen et al., 2017) that includes external stakeholders. The challenge of adopting this level of analysis is the multitude and diversity of stakeholders involved in sustainable development. Achieving sustainability requires multiple interconnected actors, who are likely to have different ambitions and objectives, which may cause considerable friction between them (Araujo & Harrison, 2002).

We encourage researchers to go beyond firm-specific studies that rely on survey methods and to conduct case studies of multi-tier supply chains, collecting data from diverse stakeholders to understand their perspectives. The scarcity of empirical research at the network level highlights many research opportunities despite the methodological challenges involved. Case studies are useful for capturing the complexities of supply networks. However, whereas in the past it may have been sufficient to conduct case studies based on relatively few actors, we advise researchers to expand case studies to multi-tier actors. We are aware—and have experienced ourselves—that case studies that rely on collecting data from multiple supply network actors and stakeholders are difficult to conduct. Companies can often be reluctant to consent to interviews with

their suppliers. One strategy for overcoming this reluctance is to ensure that companies receive insights from their suppliers in return (possibly without disclosing the suppliers' identities). Trading more case studies for richer case studies is a good way forward.

Another promising methodological development is content analysis of specialized secondary sources, such as sustainability reports, which are increasingly adopted, structured according to international standards and certified by third-party auditors, and increasingly contain rich supply chain information. We identified preliminary attempts to use this method (Ghadimi et al., 2016; Preuss, 2009), which is a promising area for development, especially because it can consolidate or triangulate empirical research. Furthermore, specialized providers build databases of sustainability information on large numbers of companies, enabling the collection of information on supply networks that can be used in network-wide quantitative analyses. We found no examples of using this novel source of information. We recommend combining qualitative and quantitative methods to take advantage of the strengths of both and overcome their inherent limitations.

6 | CONCLUSION

6.1 | Contribution to research

The overall contribution of this systematic review of the literature on the role of PSM in sustainability diffusion is the development of propositions on diffusion practices linked to embedded and peripheral sustainability. We provide guidance on new promising directions for future research, theoretical perspectives that can be used to address different research questions and research methods that may be suitable for these questions.

Our propositions capture our theoretical contributions regarding the role of the PSM function in diffusing sustainability in supply networks. Our findings suggest that PSM should be considered a key business function and a mediator between focal firms and their suppliers that can embed sustainability both in firms' daily operations and routines and in multi-tier suppliers. This is a clear direction for future research. We also recommend a closer examination of the role of PSM as one of the main actors involved in developing and implementing sustainable practices at all stages, from sourcing to supplier monitoring, supplier development, and joint development and co-creation. Future research may address the question of how PSM can drive the diffusion of sustainability in supply networks.

In this review, we focused on the role of PSM in identifying and classifying the categories of practices for the diffusion of sustainability in supply networks. We deliberately emphasized *supply networks* rather than *supply chains* to focus on the actors who provide inputs—that is, upstream suppliers at multiple tiers—who may not be visible to focal firms due to the inherent complexity of supply networks (Choi et al., 2001). We adapted six practice categories inspired by Akhavan and Beckmann's (2017) work: (1)

internal integration, (2) sourcing, (3) supplier monitoring, (4) supplier development, (5) joint development and co-creation and (6) stakeholder management. For each category, we also identified the practices that have been examined in the extant literature and developed a comprehensive framework based on which we identified the role of PSM in these diffusion practices. This framework can guide future studies on the diffusion of sustainability in supply networks. We found that most studies have focused on the sourcing strategy, mainly concerning certification and guidelines, which lead only to peripheral sustainability (Aguinis & Glavas, 2013). Few studies have explored issues related to promoting embedded sustainability through co-creation and collaboration with other actors and external stakeholder management (Aguinis & Glavas, 2013). We argue that to effectively diffuse sustainability throughout a supply network, the entire range of practices needs to be employed, including cross-functional collaboration between departments, joint development and co-creation with suppliers and collaboration with external stakeholders.

Finally, although some studies have investigated stakeholder pressures as drivers of adopting sustainability, it is not clear how specific practices, such as supplier development and monitoring in collaboration with stakeholders, can help achieve embedded sustainability. Further research may investigate how the PSM function can interact with other business functions and external stakeholders to diffuse sustainability in supply networks.

6.2 | Practical implications

Although this is a review of academic publications primarily aiming to systematize knowledge and identify future research directions, our findings also have practical implications for companies, especially PSM managers who wish to play an active role in diffusing sustainability in their supply networks. First, our framework of practices (Table 1) may serve as a useful reference to the many tools available for pursuing sustainability in a systematic way, providing a comprehensive overview of the multiple areas of intervention that need to be considered. Second, we provide guidance on how PSM can play an active role in these practices (Table 2), and Figure 10 can serve as a starting point for identifying and evaluating them. Our discussion of the role of the PSM function sheds light on the transformation needed for the function to assume a proactive role and mature further. Third, the analysis of external stakeholder interactions is becoming an essential area of development for modern PSM functions aimed at diffusing sustainability in supply networks. Our results provide useful guidance in this respect.

6.3 | Implications for policy

Our study also has several policy implications. The idea that companies must prove due diligence in their supply chains is rapidly

gaining traction, as demonstrated by the German Supply Chain Due Diligence Act (<https://www.csr-in-deutschland.de/EN/Business-Human-Rights/Supply-Chain-Act/supply-chain-act.html>) and the EU's Corporate Sustainability Due Diligence Directive (https://commission.europa.eu/business-economy-euro/doing-business-eu/corporate-sustainability-due-diligence_en). These legal developments render companies responsible for the actions of their suppliers—and not only first-tier suppliers. Although the way to prove due diligence may not be entirely clear to companies, supplier audits are seen as essential. However, SME suppliers often lack the competence and resources required to properly measure and provide the requested information. This calls for the PSM function to assume an active role in supporting suppliers. However, our findings show that monitoring practices are only part of a range of practices for diffusing sustainability and are ultimately aimed at achieving peripheral sustainability. We urge policymakers to go beyond a focus on monitoring practices to effect more profound changes in the long term. For example, various public policies aim to foster SME innovation, including the role of public procurement in promoting SME engagement in public sector supply chains (Harland et al., 2019). SME collaboration is instrumental in ensuring the uptake of green innovations, and policy measures can facilitate SME access to both the public and private sectors.

6.4 | Limitations

The main limitation of this study is related to certain methodological choices. Any literature review reflects a particular point in time. This is especially true for the rapidly developing sustainability field. The reviewed papers were published in the past 25 years (up until the end of 2019). Future reviews that consider different time frames may obtain different results. Moreover, although we exercised care to ensure that we used the most appropriate search terms according to our research goals, the choice of search terms can always influence the search results (i.e. the papers retrieved) and thus may affect the findings. Future reviews may consider whether other search terms should be included.

FUNDING INFORMATION

No funders were available.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

PEER REVIEW

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/beer.12622>.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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How to cite this article: Miandar, T., Johnsen, T. E., & Caniato, F. (2024). The role of purchasing and supply management in diffusing sustainability in supply networks: A systematic literature review. *Business Ethics, the Environment & Responsibility*, 33, 505–522. <https://doi.org/10.1111/beer.12622>