Chapter 11
Implementing Sustainable Supply Chain Management: A Literature Review on Required Purchasing and Supply Management Competences

Heike Schulze and Lydia Bals

Abstract Implementing social and environmental dimensions in global supply chains remains a major challenge in practice. While processes and actions needed to implement sustainable supply chain management (SSCM) have been subject to more research in the last years, the question who implements these in practice is much less understood. Purchasing and supply management (PSM) stands out as a function with particular influence on the global supply base. Thus, there is a central connection between SSCM implementation and PSM as a function. While the organizational level has usually been in focus of research on sustainability issues in PSM, it is ultimately the individual buyer who implements specific processes and performs specific actions. Therefore, this chapter seeks to shed light on the relationship between SSCM implementation requirements and PSM competences needed on an individual buyer level. Based on a literature review, the current coverage of PSM competences in relation to SSCM is presented in order to discuss further avenues for research.

Keywords Literature review • Purchasing • Supply management • Sustainability

H. Schulze
University of Applied Sciences Mainz, Lucy-Hillebrand-Str. 2, 55128 Mainz, Germany

London South Bank University, 103 Borough Road, London SE10AA, UK
e-mail: heike.schulze@hs-mainz.de; schulzeh@lsbu.ac.uk

L. Bals (✉)
University of Applied Sciences Mainz, Lucy-Hillebrand-Str. 2, 55128 Mainz, Germany

Department of Strategic Management and Globalization (SMG), Copenhagen Business School (CBS), Kilevej 14, 2. Floor, 2000, Frederiksberg, Denmark
e-mail: lydia.bals@hs-mainz.de; lb.smg@cbs.dk

M. Brandenburg et al. (eds.), *Social and Environmental Dimensions of Organizations and Supply Chains*, Greening of Industry Networks Studies 5,
DOI 10.1007/978-3-319-59587-0_11

11.1 Introduction

The current global business environment holds many social and environmental challenges. Existing or expected scarcity of resources like water or fossil fuels as well as increasing ecological damage is triggering social and ecological conflicts and fostering the discussion on how to ensure appropriate living conditions globally on a long-term base (BMU 2012; ERD 2012). In turn, businesses are increasingly feeling the impact of political frameworks and growing reporting requirements and legal regulations on their day-to-day operations. The 2030 Agenda for Sustainable Development adopted by the United Nations in 2015 with the agreement on new global sustainable development goals (UN General Assembly 2015) and the commitment of the United Nations community to the Paris Agreement and its efforts to combat climate change explicitly postulate the responsibility of businesses to support the social and ecological goals (UN 2015). These political frameworks not only focus on the level of a focal firm but clearly state a companies' responsibility to promote ecological and social standards within its entire supply chain. Also, since 2016, the European Union Directive on Nonfinancial Information Disclosure (European Parliament and Council 2014), for example, requires companies with more than 500 employees to report annually on environmental and social matters and also with regard to their business relationships. Therefore, transparency within supply chain networks will increasingly be required for businesses to fulfill their regulatory requirements as well as their stakeholder expectations.

When considering which functions influence the implementation of environmental and social aspects in supply chains, purchasing and supply management (PSM) stands out as an area with particular influence on the external supply base of the firm. More than half of the total turnover of a modern industrial firm in Europe is directly transferred to suppliers (Laios and Moschuris 2001). This has even been estimated as high as 60–80 % more recently (e.g., Monczka et al. 2010; Van Weele 2010). The PSM function manages the firm's supplier relationships. Moreover, the bulk of supplies now is no longer of domestic origin but international. As this network economy with a low depth of production and high reliance on international suppliers is a recent phenomenon that has emerged in the last two decades (Van Weele and Van Raaij 2014), firms are still struggling to find effective and efficient ways to manage it.

In this overall context, purchasing organizations are additionally faced with the requirement to manage sustainability aspects and risks within their supply chains. The scope of sustainability management in PSM can be defined as "(…) 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, 489).

Purchasing organizations will be even more challenged in the near future due to the abovementioned scarcity of resources, stakeholder expectations, and growing legal regulations. This was also emphasized in 2012 in the work by Schneider and Wallenburg (2012, 243), in their article directly headlined with the question "Implementing sustainable sourcing – Does purchasing need to change?", in which stakeholder management capabilities in PSM were emphasized as essential to address sustainability objectives.

Despite the growing importance of both social and ecological aspects on supply chain management, companies still tend to handle sustainability issues with a risk-oriented approach or even on an ad hoc base when issues occur (Harms et al. 2013). While SSCM has been defined to include a triple bottom-line perspective (TBL; economic, environmental, and social, Elkington 1998) as: "(…) the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements" (Seuring and Müller 2008, 1700), the coverage of the economic and environmental aspects prevails over coverage of the social and/or multidimensional (Hutchins and Sutherland 2008; Müller and Stölzle 2015; Yawar and Seuring Forthcoming).

Sustainable supply chain management (SSCM) seems to remain predominantly focused on how to manage currently unsustainable supply chains in a more compliant matter, rather than how to establish an innovative SSCM approach (Pagell and Shevchenko 2014). Consequently, it has been suggested to "(…) move the field from studying how to manage unsustainable supply chains in a more sustainable manner, to managing truly sustainable supply chains" (Pagell and Shevchenko 2014, 45).

Together with the aspect of how truly sustainable supply chains might be characterized, also the understanding of sustainability itself has been recently shifting to a new paradigm: from a triple bottom-line approach that equally emphasizes economic, social, and environmental aspects (Elkington 1998) to new prioritizations such as an ecologically dominant logic (Montabon et al. 2016). According to the ecologically dominant logic, environmental and social interests supersede economic interests, and managers should first check environmental and then social and finally economic viability of a decision. As these authors suggest: "(…) we offer an alternative logic, which we call Ecologically Dominant (ED), that we argue can lead to truly sustainable supply chains" (Montabon et al. 2016, 11f.).

While overall the performance implications of sustainable supply chains (e.g., Hart 1995; Campbell 2007; Halme and Niskanen 2001) and other aspects such as the ecological performance of supply chains (e.g., Sundarakani et al. 2010; Mallidis et al. 2012, 2014) or sustainability implications of certain raw materials like the so-called conflict minerals (OECD 2016; Hofmann et al. 2015) have been discussed in the literature, the aspect of how to successfully implement SSCM in practice remains largely unaddressed. In their study on dynamic capabilities needed to perform sustainable global supplier management, Reuter et al. (2010, 52) proposed that "PSM's capability to respond to alternating stimuli from globally dispersed

stakeholders determines the effectiveness of SGSM [Sustainable Global Supplier Management] to mitigate sustainability related risks in global sourcing." Although this statement is made with an organizational-level analysis in mind, the same competence requirements can be inferred for the individual level.

While sustainability in supply chains is indicated as a major challenge faced by organizations, currently to our knowledge, there is only little research dealing explicitly with individual competences that are relevant for buyers to design and execute sustainable supply chain relationships and networks. Employee competences in general do play an important role in SCM and logistics (Hohenstein et al. 2014; Ellinger and Ellinger 2014; Fisher et al. 2010). Also, previous research has already emphasized the role of human resources in PSM (e.g., Knight et al. 2014; Giunipero et al. 2006; Giunipero and Pearcy 2000). However, while such research has mainly concentrated on the organizational level, the individual-level capabilities of employees for implementing sustainability are more recently coming into focus, which has also been coined the micro-foundations of CSR (Aguinis and Glavas 2012; Tate and Bals Forthcoming).

Therefore, this research focuses on individual-level factors of PSM personnel to act successfully in the interplay of targets and actors in SSCM. It strives for answers to the following research question: "Which PSM knowledge and competences described in literature can promote a professional and successful management of social and environmental targets in supply chains?"

11.2 The Role of PSM and Buyers in SSCM

When referring to PSM and SCM, we herein follow the so-called unionist perspective (Spina et al. 2013; Larson and Halldorsson 2002), in which PSM is a subset of SCM in terms of a discipline. Turning toward the scope of SCM and SSCM, this then entails implementing triple bottom-line criteria both upstream and downstream. Generally speaking, the tasks of implementing sustainability along this scope may then be organizationally allocated to various functions such as SCM, PSM, logistics, quality, and/or a central staff department for sustainability. The latter may have the role to initiate, design, and communicate SSCM, but implementation occurs at the operational level. While the authors certainly acknowledge that how these responsibilities are allocated in practice specifically depends on the individual company setup, within this domain, PSM's focus usually lies on the upstream supplier network. This typical denomination of responsibilities is shown in Fig. 11.1.

Turning toward the operational execution, the upstream part of SSCM relates to PSM: PSM has an important role in avoiding reputational damage and image loss of a company by preventing sustainability issues in the supply chain (e.g., Reuter et al. 2010; Carter and Jennings 2004; Handfield et al. 2002). The format and framework of the business relationship to suppliers fundamentally impacts the implementation of SSCM. PSM coordinates this relationship based on more traditional performance indicators like cost quality and delivery (Tsoulfas and Pappis 2006). In addition,

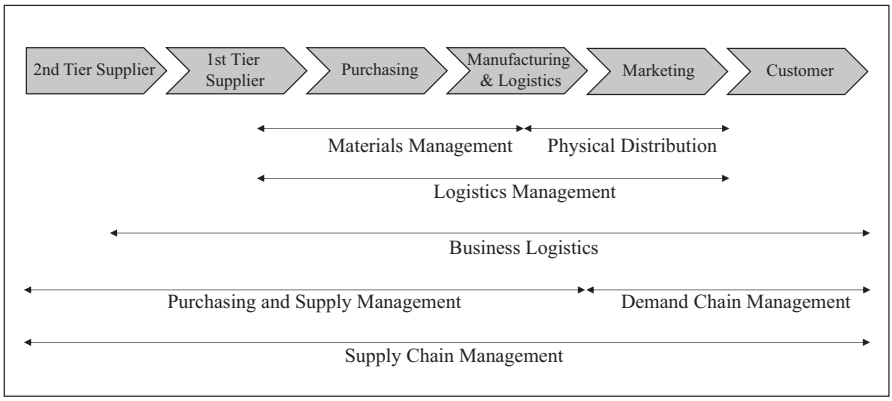

Fig. 11.1 Typical scopes of various functions' domains (Adapted from: Van Weele 2002, 207; Chopra and Meindl 2013, 15)

PSM is increasingly required to contribute to SSCM and eventually to the sustainability strategy of a company by including environmental and social aspects into the design of supplier relationships (e.g., Carter and Rogers 2008).

11.2.1 PSM's Processes in the Context of SSCM

Considering the scope of SSCM and delimiting it from the scope of sustainable PSM, Fig. 11.2 provides an overview of previous' research understanding of SSCM tasks, specifically for bringing environmental and social sustainability into supply chains. It is striking how many of the responsible supply chain actions outlined in it directly correspond to working with suppliers.

From the upstream supplier network perspective, it becomes apparent that two activities depicted in Fig. 11.2 directly fall into PSM's scope: environmental/social supply chain monitoring and environmental/social supply chain management systems (Marshall et al. 2015). Additionally, specifically for managing social issues in the supply chain, Yawar and Seuring (Forthcoming) have highlighted that both the managements of the external and internal stakeholder network are important. Although they do not discuss who/which function should perform these actions, they clearly define three responsible supply chain actions: (i) communication strategies (e.g., reporting), (ii) compliance strategies (e.g., codes of conduct, auditing, monitoring), and (iii) supplier development strategies. The tasks of both Marshall et al. (2015) and Yawar and Seuring (Forthcoming) have been combined in Fig. 11.2. Herein, particularly the second and third can be readily linked to PSM. For implementation of SSCM via PSM, these activities underline an extended view over the supply chain entities to be monitored as well as that of the internal company network of stakeholders. In line with this, research on sustainable sourcing has been

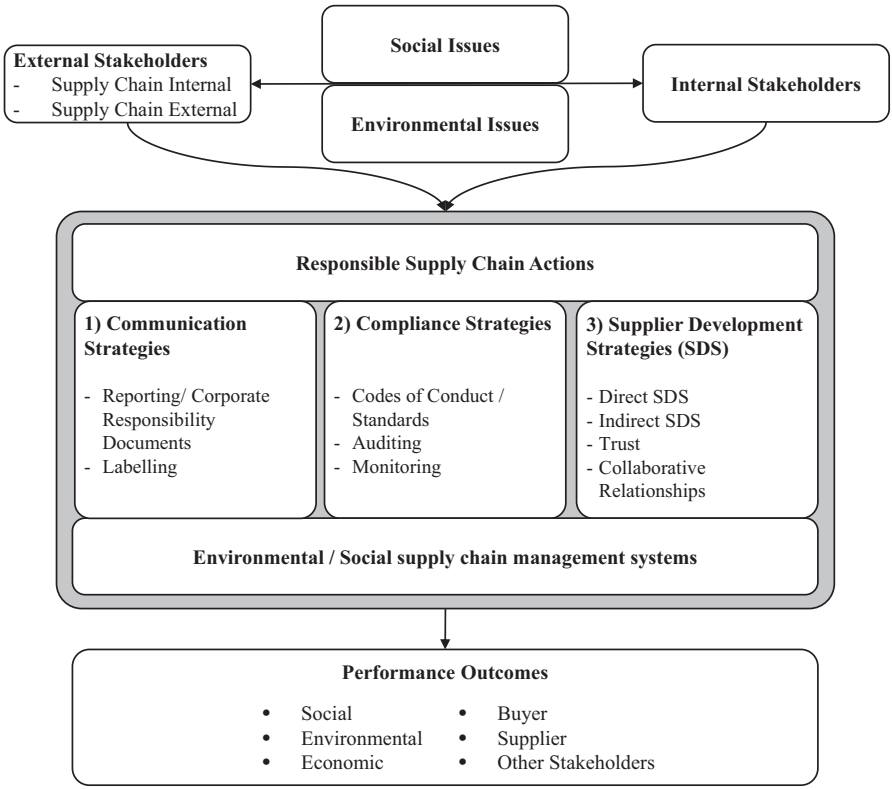

Fig. 11.2 Framework for environmental and social supply chain sustainability actions, own illustration (Adapted from: Marshall et al. 2015, 674; Yawar and Seuring Forthcoming)

mainly utilizing stakeholder theory as its theoretical foundation (Johnsen et al. 2016), which will be discussed further below.

Regarding the operational responsibilities of PSM, these in general terms comprise the management of external inputs – materials, services, capabilities, and knowledge – that are required for building, running, and maintaining the focal firm's processes (Van Weele 2010) while simultaneously managing the external and internal stakeholder network with an extended upstream supply network understanding. When turning toward how to depict its processes in brevity, Fig. 11.3 provides an overview of the overall procure-to-pay process, divided into the strategic sourcing part (source-to-contract) and the transactional processing part (purchase-to-pay).

Apart from the top and bottom processes, the middle of Fig. 11.3 depicts PSM department activities and processes, which are not necessarily related to any specific requisition or purchase order. The most direct linkages to the sustainability actions previously mentioned are through "supplier relationship management" and "sustainability/compliance" activities which directly refer to the "environmental/social supply chain monitoring"/"supplier development strategies" and "compliance

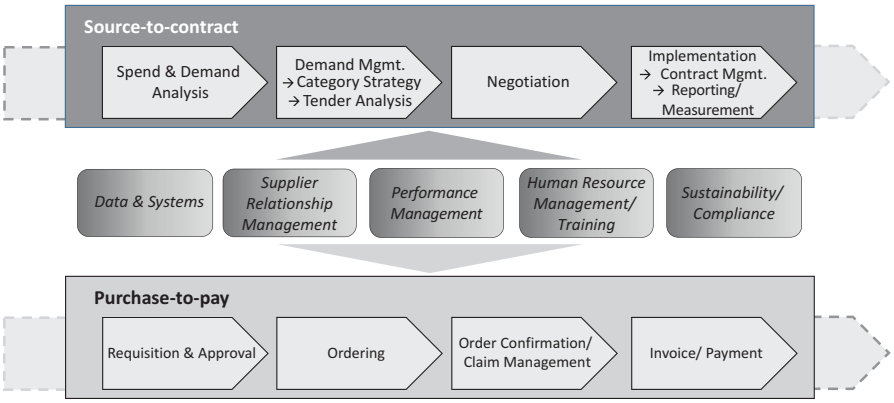

Fig. 11.3 The procure-to-pay purchasing process, own illustration (Adapted from Van Weele 2010; Monczka et al. 2010)

strategies" mentioned in Fig. 11.2. There are also other interfaces: "Environmental/social supply chain monitoring" can also be regarded as connected to "implementation" in the source-to-contract process, when it comes to contract management and reporting/measurement. This aspect is also relevant for "data and systems," as high-quality monitoring data is a prerequisite for needed transparency and serves as basis for corrective actions.

What is interesting to note is that the SSCM actions shown in Fig. 11.2 above did not yet specifically address earlier parts of the source-to-contract process, though they hold potential to promote sustainability both through the internal and external stakeholder network: internally, in "demand management," because PSM has an opportunity to ensure specifications also reflect sustainability standards during the demand clarification process, and externally in "tender analysis," as during the tender phase sustainability criteria can be brought in, and also in "negotiation," as this could provide an opportunity for joint exchange about finding ways to commonly avoid waste, increase output, etc. as part of the dialogue toward a final contractual agreement.[1] Also, measures like supplier communication on sustainability standards and expectations as well as capability building like supplier trainings are not addressed in Fig. 11.2. In general, there might be potential to put PSM into a broader and more proactive position with regard to SSCM rather than solely focusing on control and compliance.

The importance of the external and internal stakeholder network for successful SSCM implementation warrants to further elaborate on it. Figure 11.4 below illustrates PSM's interconnectedness.

[1] In line with that, both "supplier selection and evaluation" and "supplier development" have been discussed in previous research as key processes to achieve sustainable global supplier management (Reuter et al. 2010, 54f.).

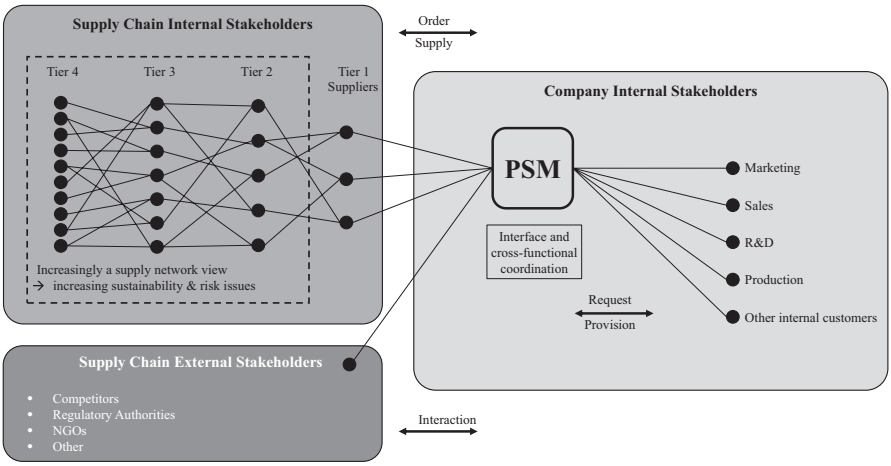

Fig. 11.4 PSM as the interface between the company internal and upstream supply chain actors, own illustration (Adapted from: Kummer et al. 2009; Schneider and Wallenburg 2012)

As shown in Fig. 11.4, the internal network comprises all other functions for which PSM procures materials, goods, and services. Externally, Fig. 11.4 highlights that PSMs extend beyond dealing with the tier 1 suppliers, spanning a network of n suppliers (here for illustration just until tier 4). While PSM in the past might have dealt mostly with tier 1 suppliers, more recently due to supply chain disruptions and scandals (such as the collapse of Rana Plaza in Bangladesh in 2013, which exposed subcontractors in the garment industry, or the contamination of Mattel's toys in 2007 that happened beyond their tier 1 suppliers), the necessity to look beyond the closest tier and adopt a comprehensive network view has been reemphasized (Wilhelm et al. 2016). Related to stakeholders and their connection to sustainability, Van Weele and Van Raaij (2014, 61) suggested that "When we adopt this [external stakeholder] perspective, suppliers should not only create value for the firm's markets (customers), but also help the buying firm in creating value for society (all stakeholders representing social and environmental concerns) and for those who invested financial resources in the firm (shareholders and investors)." Apart from the company-internal and supply chain-internal stakeholders beyond the own firm such as suppliers, there is also a plethora of supply chain-external stakeholders such as competitors, regulatory authorities, and NGOs that have to be taken into account in sustainable sourcing (Schneider and Wallenburg 2012). Toward creating TBL shared value in such a network, all three dimensions – environmental, social, and economic – become represented as stakeholders (Bals and Tate 2016; Tate and Bals Forthcoming).

Not surprisingly, previous research has therefore emphasized stakeholder management and internal cooperation as capabilities of value in the context of sustainability, though further research on additional ones has been suggested (Schneider

and Wallenburg 2012). This chapter takes this as a starting point to create a literature-based overview of buyer capabilities required for SSCM implementation.

11.3 Buyer Competences for Sustainability: The Current State of Research

The preceding sections elaborated on the increasing expectations toward the sustainability performance of companies and their sustainable supply chain management and how this affects the role and responsibility of PSM as a department. It was already emphasized that buyers are the ones who execute SSCM in PSM on the individual level. However, there is no complete picture yet on the knowledge and competences they require to successfully perform the respective activities. To help address this, the authors performed a systematic literature review of current academic research to find and summarize the current state of research and build a foundation for further research.

11.3.1 Definitions

When applying the terms "competence" and "knowledge," this study refers to two main concepts. First, "competence" is defined as a comprehensive combination of individual knowledge, skills, and abilities (e.g., Mirabile 1997; Barnes and Liao 2012). Second, "knowledge" is further specified in the areas of explicit and tacit knowledge, relying on the knowledge-based theory of the firm (Grant 1996). Explicit knowledge is defined as "knowing about facts and theories (…) and is revealed by its communication" (Grant 1996, 111). To give an example, within this study buyer knowledge about international standards for labor conditions or about environmental standards like ISO 14001 would be defined as explicit knowledge. The application of this knowledge in specific situations when communicating with a supplier to implement social or environmental standards is defined as tacit knowledge, the "knowing how" (Grant 1996, 111). Competences linked to tacit knowledge are, for example, interpersonal communication and conflict management. Taking additionally into consideration the influence of "individual desire" on behavior (Von Rosenstiel 2011), the authors follow the approach to differentiate tacit knowledge into two categories, which means to complement the abovementioned "knowing how" with the cognitive dimension (Nonaka and Takeuchi 1995; Giunipero et al. 1999). The "cognitive dimension reflects our perspective of the world around us as it exists and what it ought to be" (Giunipero et al. 1999, 44). This cognitive dimension of tacit knowledge is revealed by individual motivations, beliefs, or values.

These definitions and concepts build the foundation of the systematic literature review of this study and additionally provide the framework for the evaluation of the results. Concerning the latter, the identified competences and knowledge will be discussed regarding their explicit versus tacit properties.

11.3.2 Systematic Literature Review: Methodology

A systematic literature review usually is conducted as one of the first steps within a research process. The aim of this method is to identify the current state of academic research and its key scientific contributions with regard to a defined research question. The review adopts a replicable, transparent, and scientific process and follows certain steps that need to be clearly defined and described (e.g., Tranfield et al. 2003). The first stage of a systematic literature review defines the research question, the keywords for the search process, the selection of data sources, and the search concept. Next, selection and reading of the matching studies is done in the second stage, followed by the final data evaluation and dissemination (Tranfield et al. 2003).

It is crucial for a systematic literature review to execute every step in a transparent manner and to document the researcher's decisions and actions to cope with the weakness of this research method: It will always be a one-time screening of a predefined sample set in a selected database, conducted by individuals with a certain research interest, cultural background, language preference, and other influencing factors.

To evaluate the state of research on competences and knowledge for sustainability within PSM, the researchers defined the following strategy and core elements for the systematic literature review:

- **Overall research question:** "Which competences and knowledge are required to support sustainable buyer behavior?"
- **Keyword, definition**: Three main terms or term clusters were derived out of the research question, i.e., "sustainability," "competence and knowledge," and "purchasing and supply management." Synonyms to those keywords have been identified based on literature, common linguistic usage, and experience of the researchers. All keywords were discussed with a panel of experts to ensure appropriate coverage of the review and enhance the quality of the process and the results. After the first set of keywords was identified, a test search run revealed a few of them to be too generic and to result in a very high number of unrelated hits (e.g., social, value chain). These keywords were taken out of the final set. The review was eventually conducted with a set of the following keywords, shown in Table 11.1
- **Bibliographic sources:** The Web of Science database was used in a first step, as it is an established source of data in business and management and at the same time includes articles from a broad range of academic disciplines (see, e.g., Johnsen et al. 2016; Osagie et al. 2016). In a second step, the search was dupli-

Table 11.1 Keywords and search terms

Keywords	Search terms
Sustainability	Sustaina* OR responsib* OR ethic* OR green OR "corporate social responsib*" OR CSR OR "triple bottom line" OR TBL
Competence and knowledge	Competenc*, knowledge, skill*, capabil*, abilit*, know-how, qualification, attitud*, behavio?r, belief*, attribute, "intellectual capital," maturity
Purchasing and supply management	Purchas* OR sourcing OR procurement OR "supply chain management" OR buy* OR "supply network"

cated in EBSCO host to verify and complement the results in the EBSCO databases on business and education research.

- **Search strategy:** Various tests with the defined sets of keywords resulted in the decision to conduct a block search strategy (see, e.g., Casimir and Tobi 2011; Osagie et al. 2016). A block search strategy allows to combine keywords with different search areas. The keyword family determined to be the most important for the research project was searched in the title of articles, the other keywords in the topic. This allowed to further narrow the number of relevant findings, as some of the final keywords continue to be generic and used in the context of multiple research areas (e.g., "capabil*"). The keyword family around "competence and knowledge" was split up in two search approaches to cover the knowledge area as well as the area around attitudes and characteristics.

The block search strategy helped to focus the search; nevertheless, further refinement in terms of the subject areas of the search results was needed (see Table 11.2), as a significant portion of the initial results covered other research areas like consumer behavior, economic development, or medical sciences. In the end, due to the small number of final articles that exactly met the research question, decision was taken not to restrict either time given for the literature review, nor to restrict journals in scope for the review.

- **Selection of articles:** The selection process of articles was twofold. First, one researcher screened the title, keywords, and abstract of all articles that resulted out of the search. Articles that were out of scope were delisted (e.g., sustainable food supply, open source in information technology). Articles that covered one or more keywords of the search in the title or abstract and seemed to refer to the research question were selected. The total of 2,118 articles that resulted out of the block search as outlined in Fig. 11.1 resulted in a list of 102 papers. In a second step, the researcher prioritized the papers according to their fit to the research question. Those that covered all search terms of the block search were taken in the scope of this review, resulting in a total of 35 articles. As even this reduced list of articles revealed that only some of them explicitly fit to the research question, an evaluation scheme was developed that allowed to group the articles in four research areas, based on the search terms they met (shown in the next section as Fig. 11.5).

Table 11.2 Systematic literature review – search approach, refinement, and results

Block search Keyword combination	Refinement criteria	Database and search date	# of results
Search block 1:	Languages: English and German	Web of Science, September 27, 2016	352 results – 20 articles selected
Focus: competenc* OR knowledge OR skill*+ capabil* OR abilit* OR know-how OR qualification	Publication source types: academic articles	EBSCOhost; September 29, 2016	563 results – 51 articles selected
Attributes: sustaina* OR responsib* OR ethic* OR green OR "corporate social responsib*" OR CSR OR "triple bottom line" OR TBL	Subject area: exclude research areas like consumer behavior, media sciences, and others		
Demarcation: purchas* OR sourcing OR procurement OR "supply chain management" OR buy* OR "supply network"			
Search block 2:		Web of Science, September 29, 2016	341 results – 11 selected
Focus: attitud* OR behavio?r OR belief* OR attribute OR "intellectual capital" OR maturity		EBSCOhost, October 3, 2016	862 results – 20 articles selected
Attributes: sustaina* OR responsib* OR ethic* OR green OR "corporate social responsib*" OR CSR OR "triple bottom line" OR TBL			
Demarcation: purchas* OR sourcing OR procurement OR "supply chain management" OR buy* OR "supply network"			

The selection of studies for research areas 1–4 was based on the following approach:

Research area R1: "Competences/knowledge + sustainability +PSM," all articles that met the research question precisely.

Research area R2: "Competences/knowledge + sustainability," all articles that matched with these keywords were taken into the scope of the review.

Research area R3: "Sustainability + purchasing and supply management," these keywords yielded the highest number of results. Therefore, not all of them were selected for the final review. Only articles that included hints in the abstract that they either impact the research questions with their findings or looked promising for a later review of their reference lists were selected for the final research set.

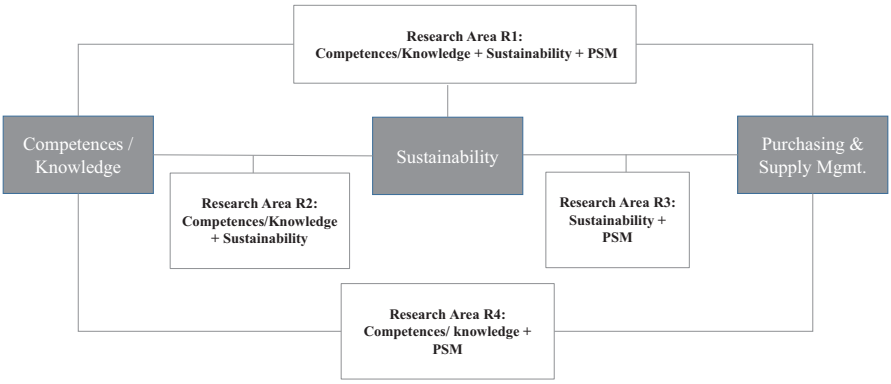

Fig. 11.5 Keyword combinations and research areas identified

Research area R4: "Competences/knowledge + PSM," the articles that were selected for further review gave an indication that they might give input on the individual competence and knowledge area adaptable to the research question.

11.3.3 Overview of the Current State of Research

As outlined in Sect. 11.3.2, the combinations of keywords could be conceptualized into four research areas, which are shown below in Fig. 11.5.

The systematic literature review delivered a broad range of studies with findings that impact a sustainability competence and knowledge profile for buyers but that are nevertheless focused on the organizational level phenomena (see research area RA3 in Fig. 11.5). Other papers deal with knowledge and competences generally in the context of PSM, very often related to performance (research area RA4 in Fig. 11.5). Dedicated research on the breakdown of ecological or social aspects in purchasing to the individual buyer level though seems to be still in its beginning (RA 1 in Fig. 11.5). Also, definitions of sustainability knowledge and competences in a broader scope, be it in an organizational or educational context, seem to be an evolving research area (see research area RA2, Fig. 11.5). As the later mentioned research areas 1 and 2 showed the best alignment to the research question and therefore for the development of a competence model for buyers with respect to sustainability, the following evaluation focuses on those two fields of study.

11.3.4 Social and Environmental Knowledge and Competences in PSM (Research Area 1, Fig. 11.5)

Only a limited sample of papers precisely meets the research question of this paper, covering each of the three term clusters with regard to sustainability, knowledge/competence, and PSM. The paper of Grandia (2016), for example, encompasses sustainable public procurement behavior regarding environmental criteria, whereas others focus on selected aspects of sustainability knowledge and competences in private PSM. Research identified in this area mostly covers either one aspect of the triple bottom line, particularly the environmental pillar (e.g., Bowen et al. 2001), or centers on sustainability knowledge specifically needed for certain products (e.g., Börjeson et al. 2015) or certain complex situational requirements like decision-making and trade-offs with regard to conflicting interests (e.g., Wu and Pagell 2011; Eltantawy 2016). It is interesting to note that these papers are mostly published over the last 5 years.

Studies found in this research area cover the organizational level as well as the individual level of influence on behavior. Grandia (2016), for example, assumes that individual knowledge on sustainability issues, combined with a commitment to change and believe in the benefits of sustainability, promotes sustainable public procurement behavior which finally results in die application of sustainable public procurement. Bowen et al. (2001) list a set of main competences and resources. Some of them, "liaison between purchasing and other functions" or "a collaborative partnering approach with suppliers" or "detailed purchasing policies and procedures," refer to the organizational level. Two impact factors that are mentioned in the study explicitly relate to individual skill requirements: "an understanding of environmental issues and how they affect supply" and "the technical skills of purchasing personnel" (Bowen et al. 2001, 176–178).

As this research is based on the knowledge-based theory of a firm (Grant 1996; see Sect. 11.3.1), the authors' intention is to derive knowledge and competence indicators out of the studies found in the systematic review and to group the findings into tacit or explicit knowledge areas. All papers that were identified to deal with buyer competences for sustainable PSM listed facets of *explicit knowledge* in the meaning of "knowing about facts and theories (…)" (Grant 1996, 111). Knowledge about environmental or social impacts of the products buyers purchase is one clearly explicit knowledge area. As mentioned earlier, Bowen et al. define the "understanding of environmental issues and how they affect supply" (Bowen et al. 2001, 177) as one of their key capabilities for green supply. In the same manner, the study of Börjeson et al. (2015) specifies the knowledge on product specifics regarding sustainability issues, like components and their effect on health and safety or working conditions to manufacture or gain the product as one determining requirement for responsible supply chain management of chemicals in the textile industry, accompanied by knowledge on respective regulations and policies (Börjeson et al. 2015). The paper of Eltantawy (2016) explores managers' competences and resilience needed to manage ambidexterity regarding sustainability in supply management.

She describes the "access to keystone vulnerability competency" as one fundamental knowledge area in this context. It is specified as a capability to identify and manage operational and managerial aspects that have the potential to perturb or strongly impact the system (Eltantawy 2016, 128), therefore applying a risk management-driven lens. The gathering and acquisition of knowledge on sustainability aspects for the PSM department is also mentioned in some studies as a key competence. For example, Bowen et al. (2001) outline the need to collect and integrate data for green supply into PSM and relate this to the technical skills of purchasing personnel. This is further supported by Grandia (2016) mentioning the knowledge for professional procurement of services and goods as an impact factor for sustainable behavior. As a result, general knowledge about procurement can be named as one explicit knowledge area that enables buyers to purchase in a sustainable manner.

A significant number of papers cover the *explicit as well as the tacit* aspects of knowledge. As mentioned earlier, tacit knowledge encompasses the "knowing how" (Grant 1996, 111) as well as the dimension revealed by individual motivations, beliefs, or values (e.g., Ginuipero et al. 1999). Eltantawy's framework (2016) already mentioned earlier is a rich and comprehensive source to derive buyer competences that are explicit as well as tacit. Based on the theoretical framework of dynamic capabilities (e.g., Barney 1991), the model describes four competence areas that lead to supply management resilience: "cultural competency," "operational competency," "situational awareness," and "access to keystone vulnerabilities," the latter already described above being a rather explicit knowledge sector (Eltantawy 2016, 126). Nevertheless, all of these competence areas have explicit as well as tacit knowledge aspects. Cultural competence, for example, is described as the ability of a buyer to recognize changes in his/her network regarding all triple bottom-line dimensions and to adapt business processes accordingly (Eltantawy 2016, 125). Communication skills, building trustful relationships, or being able to achieve compromises might be competences residing on the tacit side. Conversely, explicit skills in this context can be data evaluation, knowledge on product specifics, or stakeholder mapping. Decision-making especially in trade-off situations (e.g., Wu and Pagell 2011) is another competence that combines both explicit and tacit knowledge elements. Again, information generation to prepare decisions can be mentioned as the explicit aspect of decision-making. The tacit equivalent is more about commitment, standing, as well as communication as part of individual decision-making in the context of sustainable purchasing and in the face of conflicting goals or uncertainties (Wu and Pagell 2011).

Tacit knowledge and competences required for buyers in the sustainability context embrace a wide variety, as already indicated in the preceding paragraphs. Networking and building as well as maintaining far-reaching relationships (e.g., Börjeson et al. 2015), commitment to change (e.g., Grandia 2016), or resilience are key tacit competence areas. Eltantawy (2016) defines two types of resilience: "Supply Management engineering resilience describes the capacity to adapt to turbulent change and underlies the buyer's cultural and operative competences. Supply Management ecological resilience determines the capacity to transform in the face

of turbulent change and unpredictability and underlies the buyer's situational awareness and access to keystone vulnerabilities competencies" (Eltantawy 2016, 130).

Especially, the tacit knowledge areas that were identified in this preliminary evaluation of current research correlate in some aspects with the notion of PSM being the interface to a broad network of internal and external players (see Fig. 11.4). Consistent with the majority of the studies (e.g., Eltantawy 2016; Wu and Pagell 2011), networking, relationship management, communication, or dealing with unclear situations seem to be competences that are crucial for PSM personnel to fulfill this moderating role in a complex stakeholder network also with regard to sustainability. However, it is not elaborated in more detail which specific aspects of the networking competence are needed depending on the role and responsibility of a buyer related to the steps in the purchasing process (see Fig. 11.3).

11.3.4.1 Competences and Knowledge Requirements for Sustainability in General (Research Area 2, Fig. 11.5)

Very few papers were found that matched with the keywords "knowledge," "competences," and "sustainability," all of them having been published recently. They focus on competence profiles of personnel in roles dedicated to corporate sustainability or in general management positions.

Osagie et al. (2016) or Wesselink et al. (2015), for example, studied individual competences that support the implementation of corporate social sustainability (CSR) within companies, based on a systematic literature review and interviews with CSR managers. They deduce lists of specific CSR-related competences. Other studies like the one from Maletic et al. (2014), elaborating on the relationship between sustainability practices and performance on the organizational level, derive certain sustainability competences as being relevant impact factors. Maletic et al. (2014) outline competences for sustainability exploitation as well as sustainability exploration: "While sustainability exploitation is characterized by practices aimed at making an organization more efficient through incremental improvements in processes and outputs (products/services), sustainability exploration is concerned with challenging existing sustainability solutions with innovative concepts and developing capabilities and competencies for sustainability-related innovation" (Maletic et al. 2014, 183).

Summing up some of these findings and applying the results to the notion of tacit and explicit knowledge, the outcome is fairly comparable to the analysis of buyer-specific sustainability knowledge and competences. The *explicit* knowledge elements apply to the area of data and information sources for procurement (e.g., Craig and Allen 2013), project management, leadership, and communication, reflecting a certain professionalism that is required in the job. "Understanding CSR drivers, CSR standards, and CSR regulations" (Osagie et al. 2016), "managing CSR projects and programs" (Osagie et al. 2016), and "embracing diversity and interdisciplinary" with labels like "facilitating dialogue" or "involving stakeholders" (Wesselink et al. 2015, 504) are to be mentioned.

Certainly, some of those competences comprise at the same time *explicit and tacit* knowledge aspects. Exemplary, "managing CSR projects and programs" does also incorporate tacit knowledge areas like "build critical alliances" or "take action despite inconclusive evidence" (Osagie et al. 2016, 241). Stakeholder orientation (e.g., Maletic et al. 2014, Wesselink et al. 2015) includes the more explicit knowledge of stakeholder mapping or communication tools, as well as implicit knowledge regarding relationship management of conflict resolution. Notably, literature delivers more competences and knowledge requirements that one would certainly see on the tacit category, certainly emphasizing the individual beliefs or values. Toward the latter "systems thinking" or "interpersonal competence – empathy and compassion" (Wesselink et al. 2015, 504), self-reflection of "balancing personal ethical values and business objectives" (Osagie et al. 2016) is suggested as being relevant competence area.

11.3.5 Limitations of the Systematic Literature Review

Although considerable effort was made to ensure that the review would be all-inclusive, it is possible that some relevant research studies may have inadvertently been omitted, posing a limitation. The restriction to articles written in German or English language and therefore the focus on authors as well as journals that publish in these languages is certainly to be taken into consideration. Also, some cultural and disciplinary bias of the researchers during the information selection approach cannot be completely ruled out. However, the authors consider that this review is an accurate representation of the body of research on sustainability in relation to PSM competences published during the specific time frame when the review was conducted. The study gives a preliminary overview of PSM competences for SSCM provided in current literature. It is meant to serve as an overview and starting point for future research suggestions.

The dedicated focus on social and environmental sustainability and the intentional exclusion of the economic aspect of SSCM did narrow the outcome of the review to only two of the triple bottom-line aspects. Although some sources rely on surveys, future research should validate the results by additional empirical data, taking into consideration the management of the extended upstream supply chain.

11.4 Conclusions, Outlook, and Opportunities for Further Research

11.4.1 Conclusions and Outlook

This research started out with the research question "Which PSM knowledge and competences described in literature can promote a professional and successful management of social and environmental targets in supply chains?"

The analysis of current research did show that the influence of individuals on sustainable performance of organizations or specifically of the PSM function is recognized in recent studies. This includes the recognition that the impact of individuals is twofold, i.e., based on knowledge and based on motivation. Also, there is evidence of explicit as well as tacit knowledge areas in the context of sustainability, with even an emphasis on the tacit knowledge. The deduction of knowledge areas to build competence profiles especially for sustainable purchasing nevertheless seems to be an evolving research area.

In the comparison of studies on competences for buyers with those that evaluate on profiles for CSR managers, there are indications of an intersection especially in the tacit knowledge area. Further evaluation is needed on the precise definition and indicators for these knowledge areas, referring to different buyer roles according to the PSM process (see Fig. 11.3).

In line with the presented reflection on the role of PSM in SSCM in the second section of this chapter, the identified knowledge and competence areas emphasize some tacit areas such as stakeholder management or decision-making with regard to conflicting goals but also others more in the explicit area such as knowledge about components of products and their potential environmental or social impacts.

Moreover, in comparison to the broader level CSR profiles, it is interesting to note that the buyers' position being the moderator within an internal and external stakeholder network seems to require comparable competences and knowledge, like "interpersonal competence" (Wesselink et al. 2015, 504) to a CSR manager when it comes to sustainable supply chain management, especially on the tacit side. It might be beneficial to evaluate how competences like "foresight thinking" or "systems thinking" (Osagie et al. 2016) can be executed on the buyer level. Vice versa, Osagie et al. (2016, 242) even apply the supply chain dimension to the profile of a CSR manager: "The CSR professional must understand the role of supply chain and how the company should work together with other actors in its supply chain to address common CSR challenges."

11.4.2 Future Research Suggestions

Looking toward future research suggestions, there are various avenues that can be put forward. These center around (1) further broadening the coverage of competences, knowledge, and values required to implement SSCM via PSM (suggestions 1–4 in the following paragraphs), (2) challenging current scopes of TBL sustainability in supply chains (suggestion 5), and (3) taking a closer look at factors influencing the development and retention of required competences, knowledge, and values for achieving such goals (the final suggestion below).

First, the competence profile for the sustainable buyer should be further complemented and developed based on studies focusing on organizational capabilities of sustainability in PSM (e.g., Klassen and Vereecke 2012) and studies dealing with general PSM knowledge and competences (e.g., Giunipero and Pearcy 2000). The

latter were indicated as research areas 3 and 4 in Fig. 11.1 and should be further analyzed regarding their relationship to sustainability. Valuable input is also expected from research on PSM and sustainability training formats in academic or professional education.

Second, as it was highlighted in Sect. 11.2, there is an intrinsic connection between SSCM and sustainable PSM. To further clarify how the PSM competences relate to what has to be done in terms of responsible supply chain actions (Marshall et al. 2015; Yawar and Seuring Forthcoming) warrants further research. The current divide between the two research areas SSCM and sustainable PSM could be overcome by shedding more light on the question who implements such sustainable supply chain actions in practice, and bringing PSM as a department and ultimately the individual buyers, into focus.

Third, regardless of the exact departmental home of who is actually implementing responsible supply chain management actions, further research should shed more light on individual motivation, values, and attitudes (e.g., Swaim et al. 2016). With a focus on sustainable PSM, the question arises which individual motivation, values, and attitudes promote sustainable buyer behavior. This could provide implications for personnel selection processes within PSM as well as for talent development. This might stimulate an interdisciplinary research (education, psychology, marketing/research on consumer behavior) and dialogue on competences and further understanding of the influencing factors like individual motivation, attitudes, and values.

Fourth, a success factor for a sustainability competence profile for PSM is its adaptation to different roles and functions covering the procure-to-pay process (see Fig. 11.3). As was discussed in Sect. 11.2, many aspects of SSCM are not necessarily connected to a specific source-to-contract process; however, they are an integral part of an SSCM strategy of an organization. So in general, there might be potential to put PSM into a more proactive position with regard to SSCM rather than focusing on control and compliance. How competences covering the various responsible supply chain management actions and sustainable sourcing can be allocated to specific job profiles within PSM holds a lot of practical interest. For this purpose, future studies could analyze how companies particularly successful or particularly unsuccessful in reaching SSCM targets have internally allocated such responsibilities to individual job profiles, highlighting specific competences, knowledge, and values. Related to this, the question arises how the latter are ensured in the workforce, i.e., hired and/or trained, and how in doing so companies cope with the point that so many of the identified aspects are tacit. Also, the implications for academic curricula to prepare future talent to be able to perform sustainability tasks need to be discussed.

Fifth, the mentioned new paradigms questioning the TBL approach (e.g., Montabon et al. 2016) might initiate research on an even broader and changed set of knowledge and competences needed for responsible supply chain actions and sustainable buyer behavior. Based on such a paradigm shift, to implement sustainability in purchasing organizations implies that "[t]he switch in logics need not to change the practices that are conducted, but it will change how they are done and

how their effectiveness is measured" (Montabon et al. 2016, 21). Instead of reducing harm, preventing harm before doing business is the new paradigm. The aspect of measuring effectiveness raises the question how incentives are designed within organizations. Moreover, that requires changed behavior and decision-making from purchasing managers: "The Ecologically Dominant logic also pushes managers to think about time differently" (Montabon et al. 2016, 21), meaning that managers are required to make decisions with a longtime horizon to prevent harm. Consequently, "(…) a change in logic, even if it is imposed from the outside, would require changes in managerial cognitions in terms of how to manage supply chains as well as changes in technology" (Montabon et al. 2016, 23). Toward such a more proactive approach to SSCM, it has been suggested that companies should rather design their value chains for sustainability versus retrofit them gradually to be less unsustainable (Bals and Tate 2016). In line with PSM's role discussed in this chapter, this could be something in which the individual buyers play a pivotal role. Following the view that implementing TBL sustainability requires individual competences along all three TBL dimensions, i.e., economic, social, and environmental capabilities (Tate and Bals Forthcoming), which competences in these three areas are required to enable PSM to successfully implement SSCM would be particularly interesting.

Finally, a generally interesting area for future research is factors influencing the development and retention of knowledge, competences, and values required for successful implementation of SSCM and sustainable sourcing. Herein, previous research has noted that organizations may display different archetypes of sustainable sourcing profiles (Schneider and Wallenburg 2012). The earlier mentioned paradigm shift by Montabon et al. (2016) actually implies that ideally the target state would be the same for all companies, i.e., ensure environmental, then social, and then economic sustainability to be checked in that sequence and to be achieved simultaneously. This represents the ideal to overcome tensions between the three dimensions, which currently are often still seen as trade-offs (Epstein et al. 2015), and mostly corresponds to the archetype coined "all-round perfectionist" in Schneider and Wallenburg's (2012) classification. Nevertheless, the full array of archetypes of sustainable sourcing profiles[2] that they put forward holds a very interesting thought: Even if – ideally – all companies would target full completion according to Montabon et al. (2016), their current organizational sustainable sourcing profile surely reflects very different coverage and gaps of competences. As Schneider and Wallenburg (2012) highlighted in their eight archetypes, there might be some that hardly cover any dimension (the "minimalist"), such that mainly cover social (the "social activist") or, for example, mostly the economic and environmental dimensions (the "environmental economist"). Taking the "environmental economist" as an example, competences in the environmental and economic dimensions would be advanced, but competences for the social dimension would be underdeveloped. It might well be argued that these archetypes mark the starting point for further development of competences, knowledge, and values. At the same time, this is

[2] That is, that there can be very differing configurations of how far companies address the three sustainability dimensions

important to be aware about as a contingency factor when doing data collection as just mentioned with regard to the fifth aspect. Depending on the overall "archetype" that a company currently mostly resembles, the competences, knowledge, and values and the respective allocation to job profiles would highly differ. Also, the question arises how the overall corporate sustainability profile and the PSM archetype relate to and influence each other.

Also to the point of such contingencies, the type of firm may influence these results: It is a traditional commercial model versus an NGO versus a social business. As also highlighted in the chapter by Tate and Bals (2017), the latter hold a lot of potential for research on SSCM and looking at the individual level, especially when they actually follow triple bottom-line objectives (despite the "social" highlighted in their name). Further, other contingency factors would be the size of firms as well as their geographic scope. Regarding the latter, much research has centered on studying Western companies and deriving prescriptions based on that versus we might find other insights if we would actually more look at other settings, such as developing countries, emerging markets, or bottom of the pyramid settings (Touboulic and Ejodame 2016).

References

Aguinis H, Glavas A (2012) What we know and don't know about corporate social responsibility: a review and research agenda. J Manag 38(4):932–968

Bals L, Tate W (2016) The journey from triple bottom line (TBL) sustainable supply chains to TBL shared value chain design. In: Bals L, Tate W (eds) Implementing triple bottom line sustainability into global supply chains. Greenleaf Publishing, Sheffield, pp 1–12

Barnes J, Liao Y (2012) The effect of individual, network, and collaborative competencies on the supply chain management system. Int J Prod Econ 140(2):888–899

Barney J (1991) Firm resources and sustained competitive advantage. J Manag 17(1):99–120

BMU (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit) (2012) Deutsches Ressourceneffizienzprogramm (ProgRess). Programm zur nachhaltigen Nutzung und zum Schutz der natürlichen Ressourcen, Berlin

Börjeson N, Gilek M, Karlsson M (2015) Knowledge challenges for responsible supply chain management of chemicals in textiles – as experienced by procuring organisations. J Clean Prod 107:130–136

Bowen FE, Cousins PD, Lamming RC, Faruk AC (2001) The role of supply management capabilities in green supply. Prod Oper Manag 10(2):174–189

Campbell JL (2007) Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. Acad Manag Rev 32(3):946–967

Carter CR, Jennings MM (2004) The role of purchasing in corporate social responsibility: a structural equation analysis. J Bus Logist 25(1):145–186

Carter CR, Rogers DS (2008) A framework of sustainable supply chain management: moving toward new theory. Int J Phys Distrib Logist Manag 38(5):360–387

Casimir GJ, Tobi H (2011) Defining and using the concept of household: a systematic review. Int J Consum Stud 35(5):498–506

Chopra S, Meindl P (2013) Supply chain management, (5th edn). Pearson, Global Edition

Craig C, Allen MW (2013) Sustainability information sources: employee knowledge, perceptions, and learning. J Commun Manag 17:292–307

Elkington J (1998) Cannibals with forks. New Society Publishers, Gabriola Island
Ellinger AE, Ellinger AD (2014) Leveraging human resource development expertise to improve supply chain managers' skills and competencies. Eur J Train Dev 38(1/2):118–135
Eltantawy RA (2016) The role of supply management resilience in attaining ambidexterity: a dynamic capabilities approach. J Bus Ind Mark 31(1):123–134
Epstein MJ, Buhovac AR, Yuthas K (2015) Managing social, environmental and financial performance simultaneously. Long Range Plan 48(1):35–45
ERD (European Report on Development) (2012) Confronting SCARCITY: managing water, energy and land for inclusive and sustainable growth
European Parliament and Council (2014) Directive 2014/95/EU of the European parliament and council. Off J Eur Union, 15.11.2014. http://eur-lex.europa.eu. Accessed 31 Jan 2016
Fisher SL, Graham ME, Vachon S, Vereecke A (2010) Guest editors' note: Don't miss the boat: research on HRM and supply chains. Hum Resour Manag 49(5):813–828
Giunipero LC, Pearcy DH (2000) World-class purchasing skills: an empirical investigation. J Supply Chain Manag 36(3):4–13
Giunipero L, Dawley D, Anthony WP (1999) The impact of tacit knowledge on purchasing decisions. J Supply Chain Manag 35(4):42–49
Giunipero L, Handfield R, Eltantawy R (2006) Supply management's evolution: key skill sets for the supply manager of the future. J Oper Prod Manag 26(7):822–844
Grandia J (2016) Finding the missing link: examining the mediating role of sustainable public procurement behavior. J Clean Prod 124:183–190
Grant RM (1996) Toward a knowledge-based theory of the firm. Strateg Manag J 17(S2):109–122
Halme M, Niskanen J (2001) Does corporate environmental protection increase or decrease shareholder value? The case of environmental investments. Bus Strateg Environ 10(4):200–214
Handfield RB, Walton SV, Sroufe R, Melnyk SA (2002) Applying environmental criteria to supplier assessment: a study in the application of the analytical hierarchy process. Eur J Oper Res 141(1):70–87
Harms D, Hansen EG, Schaltegger S (2013) Strategies in sustainable supply chain management: an empirical investigation of large German companies. Corp Soc Responsib Environ Manag 20(4):205–218
Hart SL (1995) A natural-resource-based view of the firm. Acad Manag Rev 20(4):986–1014
Hofmann H, Schleper MC, Blome C (2015) Conflict minerals and supply chain due diligence: an exploratory study of multi-tier supply chains. J Bus Ethics. doi:10.1007/s10551-015-2963-z
Hohenstein NO, Feisel E, Hartmann E (2014) Human resource management issues in supply chain management research: a systematic literature review from 1998 to 2014. Int J Phys Distrib Logist Manag 44(6):434–463
Hutchins MJ, Sutherland JW (2008) An exploration of measures of social sustainability and their application to supply chain decisions. J Clean Prod 16(15):1688–1698
Johnsen TE, Miemczyk J, Howard M (2016) A systematic literature review of sustainable purchasing and supply research: theoretical perspectives and opportunities for IMP-based research. Ind Mark Manag
Klassen RD, Vereecke A (2012) Social issues in supply chains: capabilities link responsibility, risk (opportunity), and performance. Int J Prod Econ 140(1):103–115
Knight L, Tu Y-H, Preston J (2014) Integrating skills profiling and purchasing portfolio management. An opportunity for building purchasing capability. Int J Prod Econ 147:271–283
Kummer S, Grün O, Jammernegg W (2009) Grundzüge der Beschaffung, Produktion und Logistik, Pearson Deutschland GmbH
Laios LG, Moschuris SJ (2001) The influence of enterprise type on the purchasing decision process. Int J Oper Prod Manag 21(3):351–372
Larson PD, Halldorsson A (2002) What is SCM? And, where is it? J Supply Chain Manag 38(4):36–44
Maletic M, Maletic D, Dahlgaard J, Dahlgaard-Park S, Gomiscek B (2014) Sustainability exploration and sustainability exploitation: from a literature review towards a conceptual framework. J Clean Prod 79:182–194

Mallidis I, Dekker R, Vlachos D (2012) The impact of greening on supply chain network design and cost: a case for a developing region. J Transp Geogr 22(1):118–128
Mallidis I, Vlachos D, Iakovou E, Dekker R (2014) Design and planning for green global supply chains under periodic review replenishment policies. Trans Res Part E: Logist Trans Rev 72(C):210–235
Marshall D, McCarthy L, Heavey C, McGrath P (2015) Environmental and social supply chain management sustainability practices: construct development and measurement. Prod Plan Control 26(8):673–690
Miemczyk J, Johnsen TE, Macquet M (2012) Sustainable purchasing and supply management: a structured literature review of definitions and measures at the dyad, chain and network levels. Supply Chain Manag: Int J 17(5):478–496
Mirabile RJ (1997) Everything you wanted to know about competency modeling. Train Dev 51(8):73–78
Monczka RM, Handfield RB, Guinipero LC, Patterson JL, Waters D (2010) Purchasing & supply chain management. Cengage Learning, London
Montabon FL, Pagell M, Wu Z (2016) Making sustainability sustainable. J Supply Chain Manag 52(2):1–34
Müller M, Stölzle W (2015) Socially responsible supply chains: a distinct avenue for future research? In: Bogaschewsky R, Eßig M, Lasch R, Stölzle W (eds) Supply management research. Springer Gabler, Wiesbaden, pp 121–151
Nonaka I, Takeuchi H (1995) The knowledge-creating company: how Japanese companies create the dynamics of innovation. Oxford University Press, New York
OECD (Organisation for economic co-operation and development) (2016) OECD due diligence for responsible supply chains of minerals from conflict-affected and high-risk areas. http://www.oecd.org/corporate/mne/mining.htm. Accessed 20 Oct 2016
Osagie ER, Wesselink R, Blok V, Lans T, Mulder M (2016) Individual competencies for corporate social responsibility: a literature and practice perspective. J Bus Ethics 135(2):233–252
Pagell M, Shevchenko A (2014) Why research in sustainable supply chain management should have no future. J Supply Chain Manag 50(1):44–55
Reuter C, Foerstl K, Blome C (2010) Sustainable global supplier management: the role of dynamic capabilities in achieving competitive advantage. J Supply Chain Manag 46(2):45–63
Schneider L, Wallenburg CM (2012) Implementing sustainable sourcing – does purchasing need to change? J Purch Supply Manag 18(4):243–257
Seuring S, Mueller M (2008) From a literature review to a conceptual framework for sustainable supply chain management. J Clean Prod 16(15):1699–1710
Spina G, Caniato F, Luzzini D, Ronchi S (2013) Past, present and future trends of purchasing and supply management: an extensive literature review. Ind Mark Manag 42:1202–1212
Sundarakani B, De Souza R, Goh M, Wagner SM, Manikandan S (2010) Modeling carbon footprints across the supply chain. Int J Prod Econ 128(1):43–50
Swaim JA, Maloni MJ, Henley A, Campbell S (2016) Motivational influences on supply manager environmental sustainability behavior. Supply Chain Manag: Int J 21(3):305–320
Tate W, Bals L (2017) What hybrid business models can teach sustainable supply chain management: the role of entrepreneurs' social identity and social capabilities. In: Brandenburg M, Hahn G, Rebs T (eds) Social and environmental dimensions of organizations and supply chains – tradeoffs and synergies, greening of industry networks studies. Springer
Tate W, Bals L (Forthcoming) Achieving shared triple bottom line (TBL) value creation: toward a social resource-based view (SRBV) of the firm. J Bus Ethics
Touboulic A, Ejodame E (2016) Are we really doing the "right thing"? From sustainability imperialism in global supply chains to an inclusive emerging economy perspective. In: Bals L, Tate W (eds) Implementing triple bottom line sustainability into global supply chains. Greenleaf Publishing, Sheffield, pp 14–33
Tranfield D, Denyer D, Smart P (2003) Towards a methodology for developing evidence-informed management knowledge by means of systematic review. Br J Manag 14:207–222

Tsoulfas GT, Pappis CP (2006) Environmental principles applicable to supply chains design and operation. J Clean Prod 14(18):1593–1602

UN General Assembly (2015) Transforming our world: the 2030 agenda for sustainable development. https://sustainabledevelopment.un.org/post2015/transformingourworld. Accessed 30 Mar 2016

UN (United Nations) (2015) UN report of the conference of the parties on its twenty-first session, held in Paris from 30 November to 13 December 2015. http://research.un.org/en/climatechange/introduction. Accessed 15 Feb 2016

Van Weele AJ (2002) Purchasing and supply chain management – analysis, planning and practice. Thomson Learning, London

Van Weele AJ (2010) Purchasing and supply chain management: analysis, strategy, planning and practice, fifth edn. Cengage Learning, London

Van Weele AJ, Van Raaij EM (2014) The future of purchasing and supply management research: about relevance and rigor. J Supply Chain Manag 50(1):56–72

Von Rosenstiel L (2011) Employee behavior in organizations. On the current state of research. Manag Revue 22:344–366

Wesselink R, Blok V, Van Leur S, Lans T, Dentoni D (2015) Individual competencies for managers engaged in corporate sustainable management practices. J Clean Prod 106:497–506

Wilhelm MM, Blome C, Bhakoo V, Paulraj A (2016) Sustainability in multi-tier supply chains: understanding the double agency role of the first-tier supplier. J Oper Manag 41:42–60

Wu Z, Pagell M (2011) Balancing priorities: decision-making in sustainable supply chain management. J Oper Manag 29(6):577–590

Yawar SA, Seuring S (Forthcoming) Management of social issues in supply chains: a literature review exploring social issues, actions and performance outcomes. J Bus Ethics: 1–23