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Achieving sustainability in global sourcing: Towards a conceptual framework

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Achieving sustainability in global sourcing: Towards a conceptual framework

Abstract

Purpose – The paper sets out to develop, based on the extant literature, an integrated conceptual framework for the emergent field of sustainable global sourcing that synthesizes its antecedents, global sourcing practices and sustainable performance.

Design/methodology/approach – Conceptual theory building combined with content analysis is used to develop a framework and propositions representing a middle-range theory of sustainable global sourcing. A literature review of the 89 most influential papers is followed by a further discussion based on the resource orchestration perspective to advance an integrated conceptual framework.

Findings – Three main themes are identified from the literature as antecedents, global sourcing practices and sustainable performance, with each theme being detailed in a variety of constructs. Based on the resource orchestration perspective, the relationships between these constructs are revealed and therefore, an integrated conceptual framework is advanced via three sets of propositions in recourse orchestration breadth, recourse orchestration depth, and resource orchestration evolution, respectively. Eight directions for future research are further proposed.

Originality/value – First, this study provides a comprehensive framework for future study in the emergent field of sustainable global sourcing. Second, we contribute to theory development through proposing a resource orchestration perspective to explore the global sourcing practices towards sustainability. Third, the future research directions we proposed can benefit scholars interested in the overlapping areas of global sourcing and sustainability.

Keywords: global sourcing practices; sustainable performance; literature review; conceptual framework; resource orchestration perspective

1. Introduction

During the past two decades, global sourcing (GS) has emerged as an important strategic practice for multinational corporations (MNCs) and as a significant topical area in supply chain management (SCM) research (Javalgi *et al.*, 2009; Christopher *et al.*, 2011;

Schoenherr *et al.*, 2012). As a major industry trend and popular research topic, GS is afforded particular attention by many scholars as it requires a clearly defined strategy and a complex organizational structure to manage the specific issues arising in sourcing globally (Frear *et al.*, 1992; Bozarth *et al.*, 1998; Trent and Monczka, 2003; Quintens *et al.*, 2006; Jia *et al.*, 2017). Recent studies of GS have focused on a variety of topics such as GS strategy and structure (Jia *et al.*, 2017), the dark side of GS (Stanczyk *et al.*, 2017) and the competitive dynamics in GS (Vos *et al.*, 2016); however, few studies have explored the outcomes of GS. It remains unclear whether GS can actually achieve sustainable performance.

Furthermore, MNCs, which are usually based in developed countries, are often confronted today with stricter sustainability laws (Handfield *et al.*, 2012), while their overseas suppliers are not; thus, the sustainability issues of suppliers can be enormous challenges for MNCs while sourcing globally. Despite the fact that a large number of MNCs started integrating social and environmental sustainability proactively into their corporate strategy and practice (Vurro *et al.*, 2009), for instance, by creating a recycling chain (Tetra Pak), modernizing dairy farms (Nestlé) and promoting a sustainable cotton initiative (IKEA) (Gong *et al.*, 2017), firms sourcing globally still face a great deal of criticism for regularly disregarding environmental regulations, adequate working conditions, and corruption laws, among other issues (Seuring and Müller, 2008; Dabhilkar *et al.*, 2016; Rahim, 2017). Simultaneously, the number of research articles concerned with SCM and the various dimensions of sustainability (environmental or social sustainability) has increased exponentially (Hassini *et al.*, 2012; Croom *et al.*, 2018; Macchion *et al.*, 2018; Saberi *et al.*, 2019).

The above phenomena reflects two increasingly common perceptions. First, “the ongoing sustainability movement requires companies to extend their focus beyond traditional economic objectives to a Triple Bottom Line (TBL)” (Hollos *et al.*, 2012, p.2968). Second, “the company is no more sustainable than its supply chain” (Krause *et al.*, 2009, p.18), which means that simply focusing on internal operations is not enough. Global sourcing provides the possibility of achieving such sustainability along the global supply chain. On one hand, firms sourcing globally need to develop extensive capabilities in order to mitigate the difficulties resulting from long distances and cultural differences. On the other hand, sourcing globally can also promote the spreading and learning of firms’ sustainable development practices along the whole supply chain, especially for the suppliers located in emerging countries (Gualandris *et al.*, 2014). Therefore, the GS practices that can improve the

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3 sustainable performance in the TBL dimensions appear to offer valuable resources and
4 capabilities for companies. For MNCs operating in a global context, recognizing specific
5 sustainable GS practices has great potential for their competitive advantage. Given this, we
6 attempt to address the following research question.
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10 *How do MNCs achieve sustainability in the TBL dimensions through their global*
11 *sourcing practices?*
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14 To answer this question, we carry out a literature review (Seuring and Gold, 2012) and
15 subsequently use conceptual theory building (Carter and Rogers, 2008; Meredith, 1993;
16 Weick, 1989) to develop a framework of sustainable GS, along with related research
17 propositions. Specifically, we selected 89 papers in the overlapping fields of GS practices and
18 sustainability for the literature review. After that, we further discussed the results from a
19 resource orchestration perspective (ROP) (Sirmon et al., 2007; 2011) to advance propositions
20 and thereafter build our research framework.
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26 The remainder of this article is structured as follows. Section 2 presents a literature
27 review of the basic terminological groundwork and the underpinning theory. This is followed
28 by a description of the conceptual theory building methodology and an initial descriptive
29 analysis of the literature review results in Section 3. In Section 4, the thematic findings are
30 presented as the review results and then the conceptual development are further conducted to
31 advance research propositions based on the integration of the literature review results and our
32 discussion from a ROP perspective. Section 5 describes a possible future research agenda;
33 and finally, Section 6 concludes with some comments on contribution and research
34 limitations.
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44 **2. Theoretical background**

45 *2.1 Discussion on global sourcing and sustainability*

46 In order to discern the major themes of sustainable GS, we review the literature on
47 global sourcing and sustainability and identified the categories, respectively. The categories
48 are prepared for as a step of the following literature review approach, which will be
49 elaborated in details in the next section.
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54 Previous research on GS has identified several concepts, such as the integration of
55 materials, processes, standards among others (Trent and Monczka, 2003); the design of a
56 global organization ensuring value-adding activities (Ambos and Schleglmilch, 2007); the
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3 information exchange and partnering relationships in the sourcing on a global scale (Bozarth
4 et al., 1998); the international trade with intention to develop differentiated products (Antras
5 and Helpman, 2004); the particular strategy addressing the cultural differences and long
6 transportation distances in GS process (Frear *et al.*, 1992). Among these concepts, Jia et al.
7 (2017) propose a comprehensive categorization of GS that we adopt when coding the
8 reviewed papers. Based on these concepts, we apply an abductive research process (Spens
9 and Kovács, 2006), which adapts concepts in Jia et al. (2017) into the sustainable GS
10 framework by adding sustainability-specific concepts as the performance outcomes. In
11 addition, we also identify an antecedent category as it informs the preceding factors of GS
12 practices towards sustainability, which allow for a more structured understanding of the
13 sustainable GS topic. This integrated framework is adopted because it provides a generic list
14 of GS practices that enable sustainable performances and therefore serves as a sound starting
15 point. The framework is composed of three main categories with each category being further
16 broken down into several practices.

17
18 In this initial framework, for the GS category, Jia et al. (2017) propose that the GS can
19 be investigated from two levels (i.e., GS strategy and GS structure) that encompasses ten
20 practices, out of which we identify six GS practices as they are relevant to sustainability GS
21 in the literature analysed. Among these six practices, we refined the original practice of
22 “internal integration” into the more specific “internal integration (horizontal level)” and
23 “internal integration (hierarchical level)”. This is necessary to obtain the explicit range of
24 internal integration practices since MNCs who source globally usually have complex and
25 widespread organizational structure (Dooley, 2002; Hendrick, 2009). For the sustainability
26 category, we deductively employ the pre-defined but also the most well-adopted notion of
27 TBL, which simultaneously accounts for economic (including financial and operational),
28 environmental, and social performance (Elkington, 1994; Kleindorfer et al., 2005; Carter and
29 Rogers, 2008). For the antecedent category, we have identified two constructs that emerged
30 from the papers analysed and thus have inductively defined and situated them into the
31 framework. The two constructs added are internal drivers and external drivers (Walker et al.,
32 2008; Haake and Seuring, 2009; Ageron et al. 2012), which are self-explanatory as the
33 preceding factors. All the categories and constructs used are depicted in Table 1.

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2.2 Resource orchestration perspective

There are a great number of theories used in GS, such as stakeholder theory that concerns stakeholder mapping and analysis, transaction cost economics theory that focuses on transaction structure in challenging decision environments, contingency theory that emphasizes internal and external contingency factors affecting a firm's GS decisions, and institutional theory that examines institutional environment and factors affecting GS. These theories are well adopted in the existing GS literature.

However, we argue that ROP provides a novel perspective to investigate sustainability GS since the GS practices encompass structuring, bundling and leveraging valuable resources and capabilities for companies to achieve the expected sustainability performance outcomes. ROP is suggested by several scholars as an emerging but promising perspective that could be applied in the operations and supply chain management (OSCM) research (Hitt, 2011; Hitt et al., 2016; Gong et al., 2018) but, to the best of our knowledge, it has never been adopted in GS research.

ROP is an extension of the resource-based view (RBV) (Wernerfelt, 1984; Barney, 1991), but compared to the RBV, the ROP is more appropriate for adoption in this study since it emphasizes the managerial actions of resources instead of only possessing resources to achieve competitive advantages (Sirmon *et al.*, 2011; Hitt, 2011). ROP scholars suggest that "holding valuable and rare resources is a necessary but insufficient condition for achieving a competitive advantage"; resources should also be managed effectively to generate synergistic effects (Hitt, 2011, p. 9). ROP is "the combination of resources, capabilities, and managerial acumen that ultimately results in superior firm performance" (Chadwick et al., 2015, p. 360).

In the original ROP works of Sirmon et al. (2007, 2011), the managerial roles in structuring, bundling, and leveraging firms' resources are emphasized. At a firm level, the ROP can be elaborated in three aspects: breadth (resource orchestration across the scope of the firm, e.g., on the horizontal level), depth (resource orchestration across hierarchical levels, e.g., at the top, middle and operational managerial levels), and life cycle (resource orchestration at various GS stages) (Sirmon *et al.*, 2007; 2011). Accordingly, we examine the resources management of sustainable GS (i.e., the practices identified previously) from these three aspects. In ROP breadth, international integration (horizontal level) and specialization are recognized as the relevant resource managerial activities of sustainable GS. In ROP depth, internal integration (hierarchical level) combined with managerial mechanisms is recognized.

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3 The life cycle aspect is here re-labelled as ROP evolution as GS development tends to reach
4 maturity rather than decline. Thus, in the ROP evolution, supply internationalization is
5 recognized as the managerial actions of resources that change according to the GS stages.
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7 Table 2 shows the mapping of GS practice dimensions against ROP except for external
8 integration.
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19 3. Research methodology

20 We follow the conceptual theory-building method that is originally proposed by
21 Meredith (1993) and further developed by Carter and Rogers (2008), first evaluating a body
22 of literature to summarize the common elements and contrast the differences; and second,
23 integrating a selected theory (e.g., ROP) to advance research propositions and therefore, build
24 the final conceptual framework (Carter and Rogers, 2008; Handfield and Melnyk, 1998;
25 Meredith; 1993). Conceptual theory building method can create a balance between inductive
26 and deductive reasoning and research (Meredith, 1993), after inductively evaluating a number
27 of different works, the discussion based on existing theory can facilitate the development of
28 “specific prediction” (Wacker, 1998, p.368), which is a “logical deduction” that helps bring
29 about the conceptual framework’s propositions (Carter and Rogers, 2008; Handfield and
30 Melnyk, 1998, p.323).
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39 We apply a content analysis based literature review approach proposed by Seuring and
40 Gold (2012), which integrates Mayring (2010) method into four steps: 1) materials collection,
41 2) descriptive analysis, 3) category selection, and 4) material evaluation. Among these four
42 steps, the steps 1), 2), and 4) are widely accepted literature review process steps (e.g.,
43 Tranfield *et al.*, 2003; Fink, 2010), and step 3), the category selection, builds on content
44 analysis techniques for a rule (i.e., logic of coding) and replicable definition of a category
45 system (i.e., coding scheme) (Seuring and Gold, 2012; Marying, 2010). This system is
46 refined in an iterative way during the analysis process and is used to synthesize and analyse
47 the materials (Sauer and Seuring, 2017; Seuring and Gold, 2012). We apply this model rather
48 than other generic literature review approaches because it is well adapted to the field of
49 OSCM, which is the ground field of this study. The details of the first two steps are stated in
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3 the following parts of this section, and the results of materials analysis are demonstrated in
4 next section, thematic findings.

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6 Moreover, the validity and reliability of the literature reviewed are also evaluated.
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8 Following the method proposed by Seuring and Gold (2012) and Sauer and Seuring (2017),
9 the validity of the literature analysis, in this study, is ensured by our abductive research
10 process that consists of both deductive and inductive categories and helps us build the
11 theoretically-based categorisation scheme with predefined categories and clear definitions.
12 Meanwhile, we also perform a discursive alignment of interpretation (Seuring and Gold,
13 2012), which enhances the validity of particular categories as well as coding reliability. The
14 whole coding process is conducted independently by two researchers to ensure intercoder
15 reliability. Disagreements between the researchers were resolved by consensually redrawing
16 the mind-maps having led to the discrepancy in the first place. The systematic literature
17 method ensures transparency and reliability, which allows other researchers to replicate the
18 study as necessary.
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30 3.1. Materials collection

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32 To collect the most influential papers, we used a four-step methodology recommended
33 by Rowley and Slack (2004). *First*, we searched all possible combinations between GS-
34 related terminologies and sustainability related keywords (Figure 1) in the Scopus database,
35 the most comprehensive and commonly used database in recent reviews (Yang *et al.*, 2018;
36 Jia *et al.*, 2017; Ahi and Searcy, 2013;). The keywords were chosen based on previous
37 literature reviews on similar topics, the authors' own research experience and expert views
38 from fellow SCM academics after intensive brainstorming discussions between the co-
39 authors.
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62 We selected only English-language articles in peer-reviewed journals using an open
63 starting time in order to trace back to the origin of research up to December 2018. We then
64 identified the most relevant subject areas and chosen the document types as "article" (see
65 Figure 1). As a result, 6,765 relevant papers were found without removing duplicates. *Second*,
66 we evaluated the articles by reviewing the titles and abstracts and applying the inclusion and
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3 exclusion criteria presented in Figure 1. This process resulted in 285 potentially relevant
4 papers for the third round of selection. *Third*, we reviewed and analysed the full texts and
5 identified the 82 most influential articles. *Fourth* and last, we adopted a cross-reference
6 approach by checking references and further identified seven most relevant articles. We
7 eventually identified **89** papers for final review.
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11 The overall review process is shown in Figure 1. The inclusion and exclusion criteria
12 were determined through exhaustive discussion by the research group. During the review
13 process, two researchers worked independently to make “include” or “exclude” decisions.
14 Then, they compared the results and reached an agreement on all the items they did not agree
15 on initially.
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21 22 *3.2. Descriptive analysis*

23 24 *3.2.1. Distribution of publications across the period*

25 The time period of publications is from 1998 to 2018 (Figure 2). The year 1998
26 represents the beginning of the debate on sustainable GS practices in the literature (e.g.,
27 Zsidisin and Hendrick, 1998). Until 2006, the number of papers on this topic remained
28 limited to an average of five per year. A large number of publications were, however, found
29 for the time period between 2007 and 2018. In particular, during a three-year period (2016,
30 2017 and 2018), there were 29 contributions. Our final search was conducted in December
31 2018, and there were 14 papers published in 2018.
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3.2.2. *Distribution of publications across journals*

The 89 articles selected were distributed in 40 journals, as shown in Table 3. We found
that within the 40 journals, the top 3 contributing journals in the sustainable GS practices area
are the *Journal of Business Ethics* (11 papers), the *Journal of Cleaner Production* (10 papers)
and *Supply Chain Management: An International Journal* (7 papers).

INSERT TABLE 3 HERE

Meanwhile, according to the 40 journals, we also found that the 89 articles selected
covered several disciplines, for example, the “OSCM” discipline, which includes journals

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3 such as the *International Journal of Operations & Production Management*, the *International*
4 *Journal of Production Economics*, the *Journal of Operations Management*, the *Journal of*
5 *Supply Chain Management* and *Supply Chain Management: An International Journal*; and
6 the “Sustainability and Ethics” discipline, which includes journals such as *Business Strategy*
7 *and the Environment*, *Corporate Social Responsibility and Environmental Management*, the
8 *Journal of Business Ethics*, the *Journal of Cleaner Production* and *Sustainable Development*.
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15 3.2.3. Distribution of research methodologies and underpinning theory

16 The 89 articles identified were also analysed for their research methodologies,
17 underpinning theories, and industry focused (see Appendix: Descriptive analysis of the
18 reviewed 89 papers). We particularly extracted the research methodology and underpinning
19 theory and summarized their distribution in Figure 3 and Table 4, respectively.
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30 In Figure 3, we can observe the dominance of empirical research including both
31 qualitative research methods (e.g., case study) and quantitative research methods (e.g.,
32 survey). This can help gain insights into complex and contemporary “real world” phenomena,
33 i.e., case study (Yin, 2009), or allow more accurate and credible knowledge through
34 validating multiple hypotheses, i.e., survey (Fowler, 2013). Some studies adopted the content
35 analysis method that has the specific strength of combining qualitative approaches (richness)
36 with quantitative analysis (preciseness) (Seuring and Gold, 2012; Duriau et al., 2007). Only a
37 few studies are labelled as conceptual papers; indicating that the sustainable GS area is
38 relatively young and more theory development studies are still required.
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51 Through analysing the underpinning theory, we found that only 34 out of 89 papers
52 adopted a theoretical framework (accounting for 38%). In Table 4, we can see that some
53 theoretical lenses are more popular than others. In particular, stakeholder theory, resource
54 based view, and transaction cost theory are the most adopted ones, which are the classical
55 theories in the strategic management field. Almost all theories were focused at the
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3 organizational/firm level rather than individual and behaviour level. Since some articles
4 adopt more than one theory, the frequencies do not add up to the total number of reviewed
5 articles.
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10 **4. Thematic findings**

11 We carry out a content analysis on the 89 identified papers and coded them into the pre-
12 defined categories (see Table 5). The thematic findings are discussed in detail below and are
13 followed by the conceptual development based on ROP to further make sense of the findings
14 and develop propositions.
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25 *4.1. Antecedents to GS practice*

26 *4.1.1. Internal driver*

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28 Among the 89 identified papers, there are 12 papers examining the internal drivers
29 promoting firms' GS practice towards sustainability. These papers show that top management
30 support, commitment to sustainability, and a collaborative relationship orientation are the top
31 three factors within an organization driving sustainable GS. First, top management support is
32 one of the most significant drivers that promotes socially responsible sourcing initiatives with
33 the goal of environmental and social sustainability (Goworek, 2011; Park and Lennon, 2006).
34 Second, the commitment to sustainability is also recognized as effectively facilitating the
35 internal and external collaborative capabilities for purchasing and supply functions (Luzzini
36 *et al.*, 2015; Wilhelm *et al.*, 2016). Third, a collaboration orientation is identified as an
37 important internal driver for addressing complex corporate social responsibility issues
38 through GS practices (Perry and Towers, 2013; Airike *et al.*, 2016).
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50 *4.1.2. External driver*

51 As far as external drivers are concerned, 28 out of 89 papers on external drivers reveal
52 that legislation and external stakeholder pressure are the primary factors motivating
53 sustainable GS practices. For MNCs based in developed countries, the governmental laws
54 and regulations are usually well articulated and implemented emphasizing the environmental
55 and social issues in great detail, which effectively drive a firm towards sustainability (Rahim,
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2017; Abidin *et al.*, 2016; Klassen and Vereecke, 2012). The second major type of external driver is the pressure from external stakeholders, for example, customers, communities and NGOs, who pressure companies to participate and collaborate in GS practices in order to improve sustainability (Klassen and Vereecke, 2012; Reuter *et al.*, 2010; Sethi *et al.*, 2011). Furthermore, studies also indicate that companies are audited and motivated by the general public's consciousness of the environmental and social effects of GS practices (Abidin *et al.*, 2016; Reuter *et al.*, 2010; Sethi *et al.*, 2011).

Meanwhile, studies also note that internal and external drivers do not exert effects separately but synergistically. For example, socially responsible buying is motivated simultaneously by both internal factors and external pressure (Andersen and Larsen, 2009; Maignan *et al.*, 2002; Kumar *et al.*, 2012). However, the internal motivations seem to be more effective than the external pressures in promoting social and environmentally sustainable GS practices (Ehrgott *et al.*, 2013; Egels, 2016). In addition, there is also a study ranking the internal and external drivers according to their effects on sustainable GS practices (Harms *et al.*, 2013).

4.2. GS practices and TBL performance

4.2.1. Internal integration (horizontal level)

In the 89 papers identified, nine studies show that internal integration at a horizontal level is important for achieving higher levels of sustainable performance for firms sourcing globally. For instance, Zsidisin and Hendrick (1998) state that purchasing managers do have the ability to influence sustainability, but they cannot be alone in their organization in promoting sustainable awareness in GS processes. The concerns must be addressed at all levels of participation, which involves procurement, logistics, operations, marketing and others. Similarly, Oehmen *et al.* (2010) emphasize the importance of the purchasing function and further note that in GS processes implementing a supplier code of conduct requires the involvement of purchasing departments. Additionally, Leppelt *et al.* (2013) suggest that when sourcing globally both sustainability leaders and followers should manage their sustainable supplier relationships through the integration of purchasing and supply management functions.

In contrast, Luzzini *et al.* (2015) indicate that a high level of internal collaboration for purchasing functions might not automatically lead to sustainable performance improvements and might even be counterproductive in terms of economic performance. There are three

possible explanations: First, intra-firm collaborative capabilities do not themselves drive performance. In the case of environmental and social performance, the potential for competitive advantage is more likely to be found outside organizational boundaries instead of inside them (Arya and Lin, 2007; Lavie, 2006). The second explanation is that intra-firm collaborative practices may be carried out in a transactional manner through networks of weak ties (i.e., those lacking reciprocity and emotional intensity). In this case, the collaboration may have limited potential to create differences in competitive performance (Granovetter, 1973). The third explanation is related to the possible conflicting objectives of functional departments. Although cost tends to be important in many departments, there may be alternative strategic objectives, such as speed to market, which may be inversely related to cost performance (Luzzini *et al.*, 2015).

4.2.2. Specialization

Only four out of the 89 papers examine firms' specification practice during their global sourcing process with the intention to achieving sustainability. Some studies suggest that having a special department or employing specialists who provide legal and technical support on ethics and social responsibility is important in fostering sustainability during the GS process.

Villena and Gioia (2018) argue that having a special organizational structure of sustainability (e.g., the Sustainability Chief Officer and sustainability executives) is a critical factor in implementing sustainable initiatives in global purchasing process, which in turn facilitates environmental and social improvement of the firm. Similarly, Margnan *et al.* (2002) argue that designating specific organizational members to be in charge of socially responsible buying positively influences an organization's proactive stance towards sustainability, which in turn improves sustainable performance. Furthermore, Riikkinen *et al.* (2017) propose that the specialized capabilities of purchasing department generate a positive impact on firm's social sustainability. However, in Park and Lennon's (2006) empirical study, no support is found for the significant role of a socially responsible buying department or specialist in influencing a sustainable performance. A possible explanation for this is the employees' unfamiliarity with the socially responsible buying concept in the early 2000s.

4.2.3. External integration

External integration seems to be the most important practice in generating sustainable performance as 80 out of 89 papers focus on external integration or collaboration with suppliers. Several studies concerned with this phenomenon show its strong relationship with sustainable performance either on environmental aspect, or social aspect, or both (e.g., Geffen and Rothenberg, 2000; Thiel, 2012; Krause *et al.*, 2000; Egels and Lindholm, 2015). External integration is achieved – according to the literature – by means of different governance mechanisms, such as supplier assessment (e.g., Rao, 2002), supplier involvement (e.g., Krause *et al.*, 2000), and supplier collaboration (e.g., Green *et al.*, 2012). There is evidence that supplier collaboration is better than supplier involvement, which is better than supplier assessment for improving sustainable performance (Simpson and Power, 2005; Hughes, 2005; Lim and Phillips, 2008).

Furthermore, external integration with overseas suppliers has also been shown to have a direct effect on the sustainability sub-dimensions of environmental and social sustainability (Golini *et al.*, 2018; Ni and Sun, 2018; Simpson and Power, 2005; Egels and Lindholm, 2015; Hollos *et al.*, 2012). Environmental performance can be improved by means of supplier involvement, for example, overseas supplier development, i.e., training activities, supplier assessment, and supplier auditing (Ni and Sun, 2018; Simpson and Power, 2005; Rao, 2002; Krause *et al.*, 2000). Regarding social performance, (1) overseas supplier assessment of codes of conduct improve standard items, for example, health and safety, working times, and wages, but has no effect on human rights issues and policies, such as trade union rights and discrimination (Ni and Sun, 2018; Egels and Lindholm, 2015) and (2) overseas supplier collaboration appears to perform better than supplier involvement and assessment in improving labour conditions (Awan *et al.*, 2018; Ni and Sun, 2018; Hughes, 2005). Additionally, more studies focus on both environmental and social performance than on any single aspect alone and support the positive relationship between overseas supplier integration and performance improvement in the environmental and social dimensions (Golini *et al.*, 2018; Lim and Phillips, 2008; Agarwal and Thiel, 2012; Hollos *et al.*, 2012; Lee, 2016).

4.2.4. Internal integration (hierarchical level)

In this study, only three out of 89 papers focus on this construct as well as its role in achieving better sustainable performance. Dabhilkar *et al.* (2016) propose that the internal

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3 integration of the corporation and the supply function (hierarchical level) leads to the
4 improvement of economic performance mainly for strategic components, which were
5 identified by Kraljic (1983) as having a high impact on both supply continuity and profit.
6 While Hollos *et al.* (2012) indicate that the integration of the purchasing function in strategic
7 planning has a positive effect on sustainable supplier co-operation (external integration),
8 which in turn leads to the improvement of social and environmental performances. Similar to
9 Hollos *et al.* (2012), Andersen and Larsen (2009) find evidence that successful GS practices
10 with the goals of social and environmental improvements require the combination of both
11 internal integration within the entire organization and external integration with suppliers.
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20 4.2.5. Coordination and control mechanisms

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22 12 out of 89 papers examine the coordination and control mechanisms of GS towards
23 sustainability. As previously defined, coordination and control mechanisms include not only
24 the interdependence between tasks and actors (i.e., coordination) and the execution of
25 organizational goals (i.e., control), but also the corresponding ICT and information
26 processing capabilities. In many companies, sustainability targets and objectives (especially
27 social and environmental objectives) are not as well monitored or quantified as other
28 operational targets and objectives, such as savings or profitability. Thus, operations managers
29 face a challenge in making decisions that simultaneously meet financial/operational
30 requirements and social and environmental performance. Regarding this issue, Lai *et al.*
31 (2008) emphasize the division manager's scope of control in a packaging system assessment
32 by distinguishing the operations manager's controlling boundaries between assessing
33 economic impact and environmental impact.
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43 In addition to the scope of control, the style of control is also considered important in
44 making sustainability decisions. For example, Drumwright (1994) reports that there can be a
45 tendency for employees to reject top management's mandated strategic approaches towards
46 environmental buying when a top-down approach is used. Therefore, top management needs
47 to be careful when considering the possible negative psychological reactions of employees
48 towards top management's action. Similarly, Goebel *et al.* (2018) state that in an organization
49 whose culture fosters obedience to authority, less effort will be made in improving social and
50 environmental sustainability. Additionally, Park and Lennon (2006) propose that rather than
51 adopting mandatory approaches, creating a supportive environment through informal
52 communication (e.g., discussion forums) may be more persuasive and effective in enabling
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3 employees to learn and extend their capabilities for performance improvement in the
4 environmental and social dimensions.
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7 Meanwhile, the survival and success of companies is increasingly influenced by diverse
8 stakeholder groups, such as consumers, employees, local communities, suppliers, distributors
9 and shareholders (Dickson *et al.*, 2009; Roberts, 2003). Therefore, companies have strived to
10 build a competitive advantage not only by implementing sustainable business practices but
11 also by communicating those practices to their stakeholders (Cone, 2017; Chaudhri and
12 Wang, 2007). Mann *et al.* (2013) emphasize that websites, compared to traditional channels
13 (e.g., product packaging, public reports, and advertising campaigns on TV and billboards),
14 allow for a faster and more transparent communication of companies' social and
15 environmental performance in the context of GS.
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24 *4.2.6. Allocation of decision-making power*

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26 As previously defined, the allocation of decision-making power describes the
27 distribution of decision-making responsibilities to each level of the purchasing organization
28 within a firm (Jia *et al.*, 2017). Among the 89 papers, seven papers discuss this construct but
29 none identified any direct effect of the allocation of decision-making power on sustainable
30 performance. Gorg *et al.* (2017) state that the overseas subsidiaries of global sourcing
31 companies are more likely to implement sustainability initiatives if they are autonomous in
32 decision-making process, but the performance outcomes are still under-explored. Park and
33 Stoel (2005) suggest that the attitudes of top-management and peers towards sustainability
34 significantly facilitate a firm's GS practices with regard to social and environmental
35 sustainability. Additionally, studies also show that larger organizations tend to be more
36 complex in implementing this allocation of decision-making power practice (Park and
37 Dickson, 2008; Ehr Gott *et al.*, 2013). Furthermore, Van Hoof and Lyon (2013) provide more
38 specific insights into this complexity as well as show its influence on sustainable
39 performance. They tested the effects of large-, medium-, and small-firm sizes on
40 sustainability projects and found that smaller firms generate projects with lower economic
41 and environmental performance than bigger firms (*ibid*). It seems that the allocation of
42 decision-making power in combination with sustainability lacks attention in the literature of
43 GS practices.
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4.2.7. Supply internationalization

Supply internationalization indicates the level or degree of global sourcing, which is measured by the quantity, complexity and importance of the items sourced internationally (Arnold, 1999). Of the 89 papers, four mention that this factor demonstrates a moderating role on the relationship between GS practice and economic performance. Gualandris *et al.* (2014) propose that, when purchasing abroad, the larger the volume and the higher the complexity of the items sourced the more likely firms are to invest in sustainability management capabilities. This is similar to the findings of Aragon-Correa and Sharma (2003) who posit that the complexity of the items sourced strengthens the relationship between proactive GS practices and sustainable performance in the social and environmental dimensions. Moreover, studies also show the different impacts of supply internationalization on sustainable performance depending on the importance of the items sourced globally (Trautmann *et al.*, 2009; Dabhilkar *et al.*, 2016). For example, Dabhilkar *et al.* (2016) indicate that the implementation of sustainable sourcing programmes has a positive effect on social and environmental performance for items in all Kraljic categories, except for *bottleneck items*.

4.3. TBL performance

TBL performance is defined as sustainable performance in economic, environmental, and social terms (Kleindorfer *et al.*, 2005; Carter and Rogers, 2008). Among the 89 papers, environmental and social aspects receive similar level of attention considering their frequencies (62 and 73 respectively). These frequencies do not add up to 89 since some studies focus on both environmental and social aspects. Besides the studies on TBL performance generated from GS practices, we also found that some studies examine the interrelationships among the three aspects of TBL performance. These interrelationships are explained in detail here.

First, the improvement of environmental and social performance appears to facilitate economic performance. Studies show that the improvement of environmental aspects can have a positive influence on economic performance. Environmental performance has an implication for economic performance because it increases sales while meeting customer demand for environmentally-friendly products, which in turn improves economic performance (Green *et al.*, 2012). Meanwhile, this relationship is also true in the case of the

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3 social aspects of TBL performance. Both Riikkinen *et al.*'s (2017) and Sancha *et al.*'s (2015)
4 studies empirically support the idea that improvements in social performance, such as
5 working conditions and human rights, have a positive impact on firms' economic
6 performance.
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10 *Second*, there is a co-variant relationship between social performance and environmental
11 performance. Though environmental and social performance are usually seen as two separate
12 performance aspects, it is noted by studies that they strongly co-vary. On the one hand,
13 studies show evidence supporting the viewpoint that social and environmental performance
14 can be positively affected together by GS practices (Gualandris *et al.*, 2014; Reuter *et al.*,
15 2010). The adoption of new production processes for reducing pollution can improve the
16 working conditions for company employees (Elkington, 1994). On the other hand, the
17 improvement of employees' welfare can also reduce the number of potentially damaging
18 environmental actions undertaken by the firm (Marshall *et al.*, 2005). In addition, employees'
19 safety and satisfaction are positively related to environmental performance improvement
20 (Rothenberg *et al.*, 2001; Johnson, 2006).
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29 *Third*, within economic performance, the improvement of operational performance
30 appears to facilitate financial performance. Pullman *et al.* (2009) empirically test this and
31 suggest that firms targeting financial gain from sustainable GS practices should pursue this
32 gain by increasing operational performance.
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38 4.4. Conceptual development based on ROP

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40 This section discusses and further makes sense of the thematic findings through the
41 ROP perspective. As previously justified (see Section 2.2), in adopting the ROP, sustainable
42 GS can be examined from the three aspects as orchestration breadth, orchestration depth, and
43 orchestration evolution. On this basis, we develop three sets of propositions and finally
44 propose an integrated conceptual framework to answer the research question laid out in the
45 introduction. The details of the conceptual development based on ROP are provide below.
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52 4.4.1. GS practices through ROP breadth

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54 Regarding internal integration (horizontal level), the literature shows a positive
55 influence of horizontal integration on sustainable performance without clearly specifying and
56 discriminating between the different TBL dimensions (e.g., Oehmen *et al.*, 2010; Leppelt *et*
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3 *al.*, 2013). There is also an opposite viewpoint indicating that such integration cannot directly
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5 lead to sustainable performance and may even be counterproductive in terms of economic
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7 performance (Luzzini *et al.*, 2015). Based on the ROP, by means of internal integration at a
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9 horizontal level, the specific resources and capabilities within a function (e.g., R&D or
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11 marketing) can be internally leveraged or borrowed by another function (e.g., purchasing).
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13 Specific human capital resources are therefore structured and subsequently bundled internally
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15 in cross-functional teams to create the appropriate capabilities for the desired outcomes
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17 (Sirmon *et al.*, 2011). The cross-functional teams can indirectly improve efficiency as well as
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19 reduce costs (Trent and Monczka, 2002) through leveraging external resources, e.g., supplier
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21 development activities. For example, the sales information from marketing function can help
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23 the purchasing function better forecast the future order volume according to market demands,
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25 and the technological resources of R&D department can promote the negotiation with
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27 suppliers for new product manufacturing, which in turn can improve the firm's operational
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29 performance. In addition to the internal functions, the horizontal entities (e.g., an
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31 international purchasing office in China) are another important resource for the firm. The
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33 collaboration among them can create competitive advantages through the larger bargaining
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35 power generated in negotiating with suppliers, which in turn can reduce the cost and improve
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37 the firm's financial performance.

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35 With regard to specialization, the literature seems to support the viewpoint that having
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37 a special sustainability department or sustainability specialists has a positive influence on
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39 sustainable performance, especially for the environmental and social dimensions (e.g.,
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41 Margnan *et al.*, 2002). Though this positive relationship lacks adequate support based on
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43 empirical evidence (e.g., Park and Lennon, 2006). For ROP breadth, specialized labour and
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45 tasks allow for taking advantage of idiosyncratic knowledge in the environmental and social
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47 dimensions, especially in the GS process. This bundling of knowledge brings new and novel
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49 knowledge captured from various sources to create capability for sustainability-oriented
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51 transformation, which is then leveraged for an appropriate strategy (i.e., supplier management)
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53 in a new market (Sirmon *et al.*, 2011). The upstream suppliers of MNCs are usually located in
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55 developing countries, which have relatively imperfect laws and knowledge regarding
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57 sustainability issues, especially in the environmental and social dimensions. The
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59 establishment of specialized departments or specialists for sustainability issues allows
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61 idiosyncratic knowledge of environmental and social aspects to be transferred to or leveraged
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63 by these suppliers based in developing countries, which in turn improves a firm's

environmental and social performance. As an example, Tetra Pak is one of the world's leading food packaging companies. Tetra Pak realizes the importance of conducting business in a sustainable manner and sets up its environmental department to look into the recycling issues of used beverage cartons. Through the specialized department, Tetra Pak collaborates with the Chinese suppliers, and a customized recycling chain takes shape, which achieved a 28% recycling rate in 2015 and ultimately improved the firm's environmental performance (Gong *et al.*, 2017).

As stated above, the firm's internal capabilities (i.e., internal integration and specialisation) do not in themselves drive performance; instead, firms with internal capabilities need to leverage external resources, i.e., the external integration with suppliers, to achieve the desired sustainability performance (Luzzini *et al.*, 2015). Regarding external integration, the literature consistently demonstrates its positive influence on social and environmental performance (e.g., Thiel, 2012; Egels and Lindholm, 2015). For ROP breadth, the overseas suppliers can be seen as key resources lying outside the boundary of a firm, which have traditionally been considered immobile (Spekman *et al.*, 2002; Lavie, 2006; Squire *et al.*, 2009; Jia and Lamming, 2013). The management of this external resource, e.g., supplier assessment, supplier involvement and supplier collaboration, serves as a vehicle to fill particular resource gaps and can therefore help achieve MNCs' competitive advantage and the desired sustainability outcomes (Sirmon *et al.*, 2011; Steinle and Schiele, 2008; Murray, 2001). Thus, we consider external integration a mediating factor between internal capabilities and the firms' performance rather than an independent capability that can drive performance. External integration, which contains resources and resource-related managerial actions, can be expected to mediate the positive relationships between internal integration (horizontal level), specialization and firms' sustainable performance. Therefore, we propose our first set of propositions.

Proposition 1a. *External integration with suppliers mediates the positive relationship between internal integration (horizontal level) and firm's economic performance (both financial and operational).*

Proposition 1b. *External integration with suppliers mediates the positive relationship between specialization and firm's environmental and social performance.*

4.4.2. GS practices through ROP depth

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3 With regard to internal integration (hierarchical level), the literature shows different
4 viewpoints regarding its impact on sustainable performance (e.g., Dabhilkar *et al.*, 2016;
5 Hollos *et al.*, 2012). As previously stated, the hierarchy in the GS process commonly consists
6 of four levels: corporate purchasing, plant purchasing, business unit purchasing, and
7 international purchasing office (Jia *et al.*, 2017). From an ROP depth point of view, we
8 consider internal integration through these hierarchical levels as the flow of resources moving
9 up and down the purchasing organizational hierarchy globally. The resources residing in at
10 various hierarchical levels can be structured, bundled, or leveraged in a top-down sequence, a
11 bottom-up sequence, or a bi-directional sequence (Sirmon *et al.*, 2011; Floyd and Lane, 2000).
12 Each hierarchical integration sequence may require different managerial mechanisms, i.e.,
13 control, coordination and allocation of decision-making power (e.g., Lai *et al.*, 2008; Park
14 and Lennon, 2006; Ehergott *et al.*, 2013), to generate capabilities towards integrating external
15 resources (i.e., suppliers), which in turn can create competitive advantages and improve firms'
16 sustainable performance accordingly (Sirmon *et al.*, 2011). Below we discuss managerial
17 mechanisms used in hierarchical integration sequences in details.
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21 First, in a top-down integration sequence, the GS decision-making power is centralized
22 in the global commodity team who directs major changes in the resources (i.e., structuring
23 actions), such as acquisitions of resources at a global scale (Sirmon *et al.*, 2011). The control
24 mechanism may be required by the global commodity team to ensure the deployment of the
25 plan (i.e., leveraging actions). The bundling actions are often delegated to middle purchasing
26 level, which follows the lead of global commodity team selecting a congruent bundling
27 approach to supervise the operational purchasing level to conform to the plan (Sirmon *et al.*,
28 2011; Floyd and Lane, 2000). In such a sequence, the top purchasing level aggregates the
29 internal needs from each purchasing level and collectively negotiates with suppliers, which
30 perform well with regard to efficiency as well as cost reduction due to the large bargaining
31 power. In practice, a large number of MNCs adopt this mechanism to drive their GS activities
32 and achieve improvements in financial performance, e.g., IKEA or Nestlé.
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36 Second, in a bi-directional integration sequence, collaborating with a global commodity
37 team at an operational purchasing level allows middle purchasing to be aware of the resource
38 orchestration activities taking place in the firm. Through collaborations, middle purchasing
39 level can be informed of the accumulation and bundling of resources that operational
40 purchasing level initiate as well as the plans that the global commodity team adopts to
41 achieve the desired performance outcomes (Sirmon *et al.*, 2011). Therefore, the coordination
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3 mechanism may more likely be required to synchronize the resource managerial actions,
4 which are led by the middle purchasing level. In this sequence, the middle purchasing level
5 needs to both facilitate the operational purchasing level activities and collect and process
6 information for the top purchasing level to make subsequent decisions (Floyd and Lane,
7 2000). In addition, more individuals within the firm can be involved in the supplier
8 management process (i.e., external integration), which in turn can create flexibility and
9 improve the firm's operational performance.

15 Third, in a bottom-up integration sequence, the top purchasing level ratifies plans
16 prepared and championed by the middle purchasing level based on information and analyses
17 provided by the operational purchasing level (Sirmon et al., 2011; Floyd and Lane, 2000). In
18 such sequence, global commodity team is more likely to delegate authority to middle
19 purchasing level to direct the necessary structuring, bundling, or leveraging actions (Sirmon
20 et al., 2011). Thus, the allocation of decision-making power may be required to enable such
21 an integration sequence to empower local purchasing units. In GS processes, sustainability
22 issues (i.e., social and environmental problems) occur more frequently in upstream supply
23 chains of foreign origin than downstream supply chains. The international purchasing offices
24 (IPOs) that are located in the suppliers' countries are more familiar with the suppliers'
25 situation than the global commodity teams so that they are able to identify and address any
26 environmental and social sustainability issues in a timely manner. For example, IKEA is a
27 global furniture retailer and has engaged in sustainability for many years. It establishes a
28 sustainability compliance manager at one IPO in China (i.e., IKEA's internal trading
29 company in Shenzhen), who is responsible for the supplier compliance issues as well as the
30 sustainable initiative implementation at a local level (Jiang *et al.*, 2018). In this case, the firm
31 adopts a bottom-up integration sequence allocating the decision-making power to the IPOs in
32 order to address the social and environmental issues arising from local suppliers, which in
33 turn improves the sustainable performance specifically with regard to the social and
34 environmental dimensions. Therefore, we propose our second set of propositions.

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51 **Proposition 2.** *To better integrate the external resources (suppliers) in depth, there are*
52 *three internal integration (hierarchical levels) sequences with corresponding managerial*
53 *mechanisms, i.e., a top-down sequence with a control mechanism; a bi-directional sequence*
54 *with a coordination mechanism and a bottom-up sequence with an allocation of decision-*
55 *making power to lower levels of the purchasing hierarchy.*
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3 **Proposition 2a.** *Through the mediating role of external integration, the top-down*
4 *sequence with control mechanisms exert a positive influence on the firm's financial*
5 *performance.*
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8 **Proposition 2b.** *Through the mediating role of external integration, the bi-directional*
9 *sequence with coordination mechanisms exert a positive influence on the firm's operational*
10 *performance.*
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13 **Proposition 2c.** *Through the mediating role of external integration, the bottom-up*
14 *sequence with an allocation of decision-making power to lower levels of the purchasing*
15 *hierarchy exerts a positive influence on the firm's social and environmental performance.*
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19 20 21 4.4.3. *GS practices through the ROP evolution* 22

23 Regarding supply internationalization (i.e., resource orchestration evolution), the
24 literature shows its moderating role on the relationship between GS practices and sustainable
25 performance (e.g., Gualandris *et al.*, 2014; Aragon-Correa and Sharma, 2003), and the
26 moderating role is further specified according to the sourced items (e.g., Trautmann *et al.*,
27 2009; Dabhilkar *et al.*, 2016). According to the ROP, specific resource orchestration actions
28 have to be tailored to fit the evolution of GS, which is characterized by three approaches or
29 stages that evolve from the short term to the long term of GS with a tendency towards
30 maturity. The three approaches/stages include 1) the transactional approach that focuses on
31 discrete and un-structured sourcing activities, 2) the supply based approach that focuses on
32 establishing a set of supplier relationships in the sourcing country, and 3) the network
33 positioning approach in which both supplier and customer relationships are developed in a
34 network of business relationships in a host country (Najafi *et al.*, 2013). All of these
35 approaches make sense at different stages in a process evolving towards achieving the
36 sustainable goals.
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47 Through this evolution, supply internationalization may change accordingly (Jia *et al.*,
48 2014). At the first stage, using a transactional approach, a low degree of supply
49 internationalization is required with a small quantity of sourced items and a low degree of
50 complexity, and the items sourced at this stage are usually standardized products (Najafi *et*
51 *al.*, 2013). Experimental resource allocation patterns are commonly undertaken at this stage
52 to select valuable and potentially rare operational and product configurations (Sirmon *et al.*,
53 2011). Thus, firms are unlikely to invest significantly in management capabilities and are
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3 exposed to the problems that result from the long distance and cultural differences, which in
4 turn may negatively influence firms' performance in the TBL dimensions.
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7 At the second stage, using a supply based approach, firms develop a set of supplier
8 relationships in the new market with an increasing degree of supply internationalization. This
9 stage may require firms to develop skills in accessing and building relationships with
10 suppliers (Sirmon et al., 2011). To manage a larger number as well as the higher
11 complexity of suppliers, firms may set up IPOs in the suppliers' home countries and invest in
12 the development of supplier relationships (Jia *et al.*, 2014). These activities permit a growing
13 firm to leverage its resource portfolio to gain competitive advantage (Sirmon et al., 2011),
14 which in turn can reduce the cost and shorten delivery times while maintaining a high quality,
15 i.e., achieving economic benefits.
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19 At the third stage, using a network positioning approach, the degree of supply
20 internationalization continuously increases with increasing volume and complexity with
21 regarding to sourcing items. This requires that firms adopt a proactive approach when
22 dealing with the firm's external stakeholders and form strategic relationships with both
23 suppliers and customers (Sirmon et al., 2011), e.g., positioning itself in a network of
24 relationships in a host country. The integration with both suppliers and customers allows for
25 an interactive and collaborative business environment. Moreover, a mature firm's resources
26 may also be used at this stage to extend the firm's reach in its external environment to
27 exert greater influence and to stabilize its position in the competitive environment
28 (Sirmon et al., 2011). This can facilitate the idiosyncratic knowledge transfer of
29 environmental and social sustainability regularly on one hand (Perols *et al.*, 2013), and
30 generates more responsive actions to the environmental and social requirements on the other
31 (Simpson *et al.*, 2007). Finally, firms can achieve the sustainable goals of the environmental
32 and social dimensions in the third stage. Therefore, we propose our third set of propositions.
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47 **Proposition 3.** *Supply internationalization moderates the relationship between*
48 *implementing GS practices and sustainable performance improvement.*
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51 **Propositions 3a.** *The moderating effect of supply internationalization is negative on the*
52 *relationship between implementing GS practices and overall sustainable performance at the*
53 *transactional approach stage.*
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3 **Proposition 3b.** *The moderating effect of supply internationalization is positive on the*
4 *relationship between implementing GS practices and economic performance (both financial*
5 *and operational) at the supply based approach stage.*

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8 **Proposition 3c.** *The moderating effect of supply internationalization is positive on the*
9 *relationship between implementing GS practices and economic (both financial and*
10 *operational), environmental and social performance at the network positioning approach*
11 *stage.*

12 13 14 15 16 17 18 4.4.4. *Interrelationships among TBL performance*

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20 In addition to the majority of studies in the 89 papers that examine the influence of GS
21 practices on TBL performance (e.g., Luzzini *et al.*, 2015; Abidin *et al.*, 2016; Klassen and
22 Vereeke, 2012; Lee, 2016), there are also some studies focusing on the interrelationship
23 among the three dimensions of TBL. According to the literature, there are several causal
24 linkages found among the three aspects of TBL performance. *First*, one study shows that the
25 improvement of environmental aspects can positively influence economic performance
26 (Green *et al.*, 2012), and the positive relationship is also found between social performance
27 and economic performance (Sancha *et al.*, 2015). The possible explanation may be that
28 environmentally-friendly products consume less energy, which reduces costs, and the better
29 working conditions increase production efficiency due to enhanced employee motivation
30 (Pagell *et al.*, 2010). *Second*, the literature also shows a co-variant relationship between
31 social performance and environmental performance (e.g., Gualandris *et al.*, 2014). Cleaner
32 production can also improve working conditions and increase employees' welfare, and it can
33 also reduce potentially environmentally-damaging actions (Elkington, 1994; Marshall *et al.*,
34 2005). *Third*, within economic performance, the improvement of operational aspects appears
35 to facilitate financial aspects because the better quality and faster delivery can increase the
36 sales volume and increase profits.

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49 Finally, we integrate the above propositions into a comprehensive research framework
50 (as shown in Figure 4), which sets the stage for the future research agenda.

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INSERT FIGURE 4 HERE

5. Discussion of future research directions

In this section, based on the thematic findings and conceptual development, we present eight future research directions.

First, in this study, we adopted the ROP as the underpinning theory to explore the research question. The ROP emphasizes the management's role in effectively developing and leveraging the resources and capabilities that a firm owns to improve performance (Chadwick *et al.*, 2015; Sirmon *et al.*, 2007). Through the lens of the ROP, we analysed sustainable GS practices from three dimensions, i.e., breadth, depth and evolution, and discussed in details how the GS-related resources (in all the three dimensions) are structured, bundled, and leveraged with the intention to sustainability. According to the discussion, the resources managed in the breadth and depth dimensions appear to be better developed than those in the evolution dimension in the sustainable GS context. Therefore, we suggest that future research can explore the resources orchestration in the evolution dimension more deeply, e.g., testing the moderating effect of supply internationalization specified by the GS stages (P3a, P3b and P3c) by adopting a longitudinal case study method. The reason to do so is that in a longitudinal study, managerial actions (e.g., supply internationalization) can be examined specifically in GS evolution stages, which provides detailed insights regarding the causes and effects in sustainability GS.

Second, the antecedents (i.e., internal and external drivers) of sustainable GS practices appear to be a rather well-researched topic in the literature, while their relationships with specific GS practices still need deeper investigation. The existing literature mainly focuses on the relationship between antecedents and general practices, e.g., ethical sourcing management, sustainable supplier development, and green or social practices (Goworek, 2011; Wilhelm *et al.*, 2016; Abidin *et al.*, 2016; Reuter *et al.*, 2010). In this study, we identified five GS practices (i.e., internal integration (horizontal); specialization; internal integration (hierarchical); external integration; supply internationalization) leading to sustainable performance, which call for the further examination of the specific relationships. A recent study by Luzzini *et al.* (2015) is one example in this respect; it investigates this issue and indicates that a commitment to sustainability can facilitate internal integration at a horizontal level. Therefore, we suggest that future research could further explore the more specific relationships among various internal and external drivers (e.g., top-management support and collaboration relationship orientation) and GS practices (e.g., supply internationalization and external integration) leading to sustainability.

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Third, regarding the GS practices section, external integration appeared to be the most frequent re-occurring construct in the 89 papers, showing a positive mediating role on the relationship between internal resources orchestration and sustainable performance. This is not surprising since sustainability-related issues (e.g., environmental pollution or poor working conditions) occur more frequently in the upstream of supply chains, i.e., with overseas suppliers' in developing countries, rather than downstream in the chain. Therefore, the potential for solving these problems and improving performance is more likely to be achieved through the mediating effect of external integration (Arya and Lin, 2007; Lavie, 2006). Existing studies of external integration mainly focus on the interaction with suppliers, but they do not pay the same level of attention to the integration with other external stakeholders, e.g., NGOs. Previous studies usually mentioned NGOs as being the antecedents of companies in implementing sustainable GS practices (e.g., Reuter *et al.*, 2010; Sethi *et al.*, 2011), and only recent studies have started to notice NGOs' significant role in providing knowledge and training suppliers for greater sustainability in the global context (Oelze *et al.*, 2016; Rodríguez *et al.*, 2016; Rueda *et al.*, 2017). Thus, in addition to integrating with suppliers, future research could consider the effects of integration with NGOs or NGOs' role on sustainable performance in the GS process.

Fourth, in addition to external integration, the findings of the GS practices section also show that internal integration has not been explored as much as external integration and still needs greater understanding. The literature shows mixed viewpoints on the influence of internal integration on TBL performance (e.g., Leppelt *et al.*, 2013; Luzzini *et al.*, 2015). Based on the ROP, we propose an indirect positive relationship between internal integration (horizontal level) and economic performance (P1a), which needs to be validated by further empirical investigation. Another point is the scope of internal integration at a horizontal level. The existing literature mainly investigates collaborative activities across horizontal departments at the headquarter (e.g., Oehmen *et al.*, 2010; Leppelt *et al.*, 2013), but it ignores collaborations with subsidiaries in other geographical locations that are located in different countries. The role of the subsidiary is a matter of great importance to MNC executives (Birkinshaw *et al.*, 2005), and previous studies explore it in the GS context based on, for example, its strategic role in technology sourcing (Manolopoulos *et al.*, 2005), its entrepreneurship for the MNC's headquarters (Birkinshaw *et al.*, 2005), and its self-determination for sustainability (Shah and Arjoon, 2015). Given the significant role of

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3 subsidiaries in GS, implications of the internal integration with subsidiaries for TBL
4 performance could be explored further.

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6 *Fifth*, our study of the relevant literature also illustrates the need to focus on particular
7 subcategories in GS practices when examining the implications for sustainable performance,
8 e.g., specialization, control and coordination mechanisms and the allocation of decision-
9 making power. These three practices do not receive as much attention as others (e.g., internal
10 integration and external integration) in the previous literature. Through the analysis of ROP
11 breadth, we propose the positive indirect relationship between specialization and social and
12 environmental performance (P1b), but empirical studies are needed to further validate this
13 proposal. Based on the existing studies, the implementation of GS will be more sustainable if
14 companies develop various organizational management systems (Park and Lennon, 2006).
15 Additionally, in practice, many MNCs establish a special department to deal with the
16 sustainability issues in the GS process, e.g., IKEA's sustainability department and IWAY
17 department, and McDonald's CSR and sustainability unit, food unit, planet unit, sourcing unit
18 and people unit. A special department or specialist who focuses on different areas of
19 sustainability issues could be an issue of great significance to researchers in the overlapping
20 fields of GS and sustainability in the future. More empirical studies may be needed to
21 investigate the implications of this practice in achieving MNCs' sustainability GS goals.

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23 *Sixth*, another potential area for research is the managerial actions, i.e., the control
24 mechanism, coordination mechanism and allocation of decision-making power, in the GS
25 hierarchy when examining the consequences for sustainability. Through the analysis of ROP
26 depth, we emphasize the importance of managerial actions in the hierarchical purchasing
27 levels in a global context. It is essential for companies to adopt different managerial actions
28 according to the hierarchical integration sequences (top-down, bottom-up and bi-directional)
29 to maximize the prospect of expected TBL performance. Thus, one focus of this potential
30 area of research is validating the propositions (P2a, P2b and P2c) regarding internal
31 integration (hierarchical level) combined with the three managerial mechanisms through
32 empirical research. In addition, in existing studies of the overlapping fields of GS and
33 sustainability, purchasing activities are commonly based on the bottom level (plant
34 purchasing) to explore the approaches of supplier management (e.g., Wilhelm *et al.*, 2016;
35 Busse *et al.*, 2016; Sancha *et al.*, 2015) rather than the top (commodity team) or middle
36 purchasing levels (BU purchasing or IPOs), which do not directly interact with suppliers but
37 have more significant roles in making sustainable GS decisions. Thus, another focus of this
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3 potential area of research could be the roles of the top or middle purchasing levels in
4 influencing sustainable GS practices.

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7 *Seventh*, besides the relationships between GS practices and TBL performance, we also
8 found some interrelationships among the three aspects of TBL performance. Environmental
9 and social performance resulting from GS activities appear to co-vary and synergistically
10 facilitate economic performance, including both operational and financial aspects. Moreover,
11 the improvement of operational performance also facilitates financial performance. These
12 findings have important significance because suppliers based in developing countries are
13 often more concerned about economic performance than environmental and social
14 performance. In this case, the positive linkage between (a) social and environmental
15 performance and (b) economic performance may generate proactive actions and investments
16 in addressing sustainable issues and improving environmental and social performance.
17 However, there is also a study indicating a potential trade-off between the negative linkage in
18 the short-term and positive linkage in the long-term between these dimensions (Dabhilkar *et*
19 *al.*, 2016). Therefore, longitudinal studies may be needed to further empirically test whether
20 the short-term economic cost in social and environmental improvement can be balanced by
21 the long-term economic benefits generated from consumers' favourability of reputable
22 business and sustainable products.

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34 *Eighth*, while the academic concept of sustainable GS (e.g., sustainable supplier
35 development and socially responsible buying) has been published extensively, surprisingly
36 little attention has been dedicated to the real-world understanding of the concept (Park and
37 Lennon, 2006; Busse *et al.*, 2016). Future research should pay greater attention to
38 practitioners' (e.g., GS executives in MNCs) understanding or even co-author studies with
39 practitioners. For example, it would be interesting to study these notions from a
40 performativity perspective (e.g., Cabantous *et al.*, 2010), which shows how organizational
41 actors can make decisions in accordance with the axioms of rational choice theory, in an
42 attempt to understand how academic discourse influences practitioners' understanding of
43 sustainable GS.

51 52 53 **6. Conclusion**

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55 The purpose of this paper has been to contribute to the understanding of GS practices
56 with the goal of achieving sustainable performance. At the beginning of this paper, we set out
57 to answer the question: *How do MNCs achieve sustainability in the TBL dimensions through*

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3 *their global sourcing practices?* Through evaluating the relevant literature of sustainable GS,
4 further discussed from the ROP perspective, we have developed an integrated conceptual
5 framework with three sets of propositions that is capable of addressing this research question.
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8 First, the framework is comprised of antecedents, five GS practices and three sub-
9 dimensions of TBL performances, which reveal various linkages between GS practices and
10 sustainable performance on each dimension of the TBL. The framework fosters an
11 understanding of the implications of GS practices for sustainable performance. Second, this
12 study may be the first to explore the GS practices from an ROP perspective, i.e., ROP breath,
13 ROP depth and the ROP evolution. The ROP is useful in analysing the theme and building a
14 theory of sustainable GS. Third, based on this study, we further propose eight directions for
15 future research, which will benefit scholars interested in the overlapping fields of GS and
16 sustainability.
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24 There are, however, some limitations of this paper. First, concerning the research
25 method adopted, our framework is developed through evaluating relevant literature and
26 developing a conceptual framework based on the selected theoretical lens (i.e., ROP), so the
27 conceptual model may not represent all the complexities in reality. Therefore, further
28 empirical work is needed to refine and validate the framework. Second, in the literature
29 evaluation, we adopted the selective approach (based on ROP) of a content-based literature
30 review that allows us to focus on the key contributions of the research topic. However,
31 eligible studies may have been missed out due to the limited scope, hindering a more
32 comprehensive explanation of sustainability GS.
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Table 1 Category selection

Categories and Constructs	Description
Antecedents	Antecedents are the preceding factors of practices and are responsible for causing the performance effects. Internal drivers are described here as organizational factors, and the external drivers include regulation, customers, competition, and society (Walker et al., 2008; Haake and Seuring, 2009; Ageron et al. 2012).
1) Internal drivers	
2) External drivers	
GS practices	
3) Internal integration (horizontal)	Internal integration (horizontal level) is mentioned as the integration or collaboration across horizontal functions within a firm (Dooley, 2002; Hendrick, 2009; Jia et al., 2017).
4) Internal integration (hierarchical)	Internal integration (hierarchical level) refers to integration through the hierarchical purchasing levels within a firm, such as corporate, plant, business unit, and purchasing office (Dooley, 2002; Hendrick, 2009; Jia et al., 2017).
5) External integration	External integration in GS refers to integration or collaboration with suppliers (Jia et al., 2017) and the different governance mechanisms to draw suppliers into sustainability-related practices (Gimenez and Tachizawa, 2012).
6) Supply internationalization	Supply internationalization indicates the level or degree of global sourcing, which is measured by the quantity, complexity and importance of the items sourced internationally (Arnold, 1999; Jia et al., 2017).
7) Control & Coordination	Coordination and control mechanisms refer to the degree of managing the interdependence between tasks and actors (coordination), the degree of ensuring that each unit contributes to the execution of organizational goals (control), as well as the related information and communication technology capabilities (ICT) of firms that implement GS practices (Jia et al., 2017).
8) Specialization	Specialization refers to the division of labour and tasks designated into the different levels of the purchasing organization within the company (Jia et al., 2017).
9) Allocation of decision-making power	Allocation of decision-making power is mentioned as the distribution of decision-making responsibilities to each level of the purchasing organization within a firm (Jia et al., 2017).
TBL performances	TBL performance is defined as sustainable performance in economic, environmental, and social terms (Elkington, 1998; Kleindorfer et al., 2005; Carter and Rogers, 2008; Hollos et al., 2012).
10) Environmental	
11) Social	
12) Economic	

Table 2 Mapping GS practices against ROT dimensions

Approach	GS Practices	References
Orchestration breadth	Specialization (setting up new functions)	Margnan et al. (2002)
	Internal integration with other functional departments (horizontal level)	Zsidisin and Hendrick (1998); Oehmen et al. (2010); Leppelt et al. (2013);
Orchestration depth	Internal integration with different hierarchical levels (allocation of decision-making power; control mechanisms; coordination mechanisms)	Park and Dickson (2008); Ehgott et al., (2013); Hoof and Lyon (2013); Andersen and Larsen (2009); Dabhilkar et al. (2016)
Orchestration evolution	Supply internationalization	Gualandris et al. (2014); Aragon-Correa and Sharma (2003); Dabhilkar et al. (2016)

Table 3 Journals/articles distribution

Area/Journal	No. of papers
Production and Operations Management	38
Supply Chain Management	7
Journal of Operations Management	5
International Journal of Operations & Production Management	4
International Journal of Production Economics	4
International Journal of Production Research	3
Journal of Supply Chain Management	3
International Journal of Physical Distribution and Logistics Management	3
Industrial Management & Data Systems	2
International Journal of Retail & Distribution Management	2
International Journal of Logistics Management	1
Journal of Business Logistics	1
Production and Operations Management	1
Production Planning and Control	1
International Journal of Supply Chain Management	1
General Management	18
Journal of Business Ethics	11
European Management Journal	2
Business and Society Review	1
Journal of Business Strategy	1
International Journal of Business Performance Management	1
Benchmarking	1
Scandinavian Journal of Management	1
Sustainability and Ethics	14
Journal of Cleaner Production	10
Sustainability (Switzerland)	2
Sustainable Development	1
Social Responsibility Journal	1
Regional studies	6
Corporate Social Responsibility and Environmental Management	3
Business Strategy and the Environment	2
Environment and Planning A	1
International Business	6
Journal of International Business Studies	1
International Business Review	1
International Journal of Business and Globalisation	1
Asia Pacific Business Review	1
Journal of Asia-Pacific Business	1
Third World Quarterly	1
Others	7
Clothing and Textiles Research Journal	2
Corporate Governance	1
Human Resource Management	1
International Journal of Business and Globalization	1
Journal of Public Affairs	1
Social Sciences (Pakistan)	1
Total	89

Table 4 Distribution of underpinning theory

Theory	No. of papers
Stakeholder theory	7
Resource based review	5
Transaction costs theory	4
Agency theory	2
Contingency theory	2
Life cycle analysis	2
Resource dependence theory	2
Social exchange theory	2
Legitimacy theory	1
Signaling theory	1
Institutional theory	1
Stewardship theory	1
Self-determination theory	1
Cluster theory	1
Cognitive perspective	1
Relational view	1
Complementarity theory	1
Business ethics theory	1
Organizational learning	1
Hofstede's national culture	1
Corporate strategy	1

Table 5 Thematic coding (N=89)

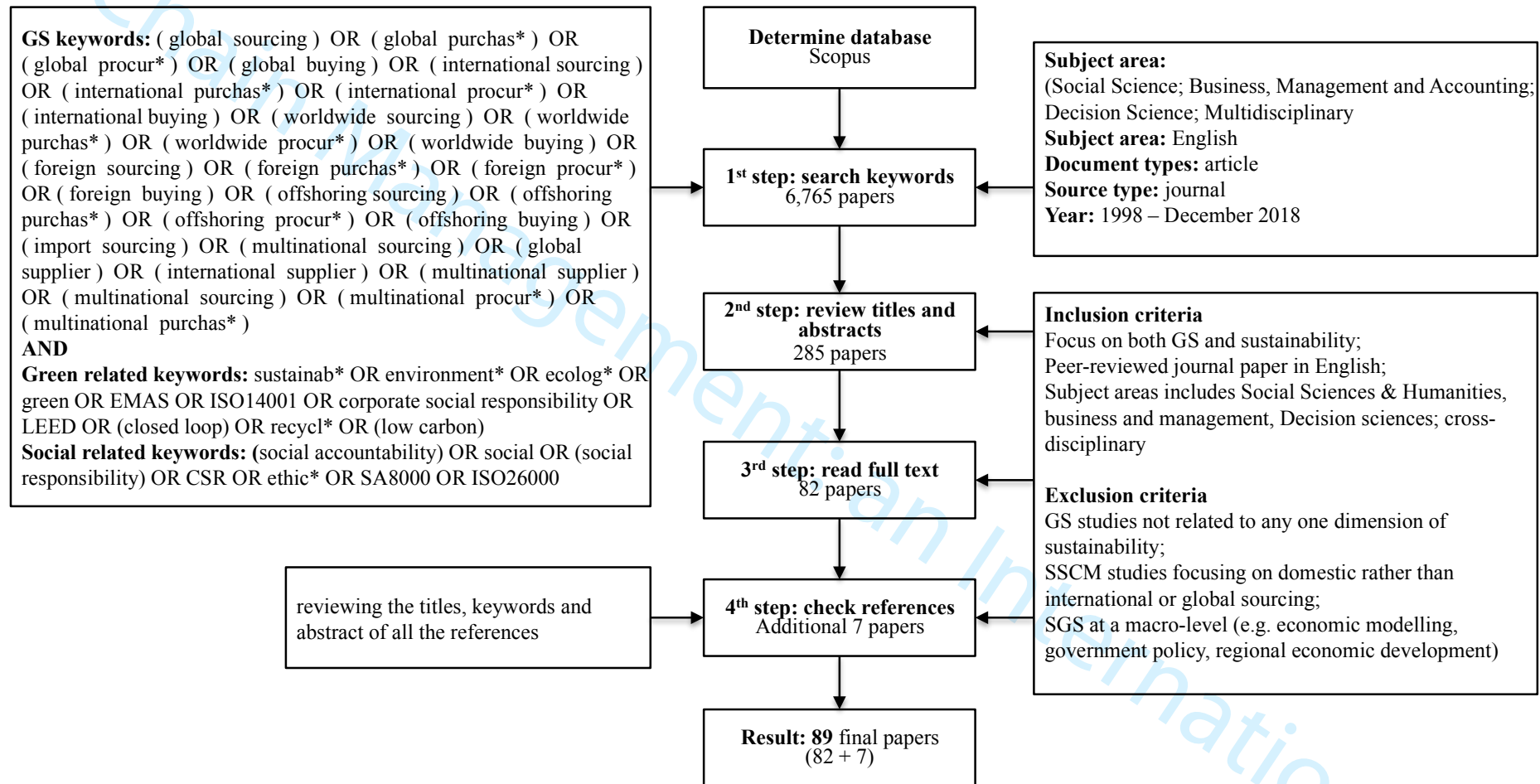
Author (year)	Antecedents		GS practices					TBL performances				
	Internal driver	External driver	Internal integration (horizontal)	Internal integration (hierarchical)	External integration	Supply internationalization	Control & coordination	Specialization	Allocation of decision-making power	Environmental	Social	Economic
Frequencies	12	28	9	3	80	4	12	4	7	62	73	43
1	Abidin et al. (2016)	×			×					×		
2	Agarwal and Thiel (2010)				×					×		×
3	Ehrgott et al. (2013)	×	×		×				×	×		
4	Geffen and Rothenberg (2000)				×					×		×
5	Green et al. (2012)			×	×					×		×
6	Kumar et al. (2012)	×	×		×					×		×
7	Lai et al. (2008)			×			×			×		×
8	Lee and Klassen (2008)				×					×		
9	Nawrocka (2009)				×		×			×		
10	Pagell (2007)				×					×		×
11	Rao (2002)				×		×			×		×
12	Simpson and Power (2005)				×					×		
13	Wycherley (1999)				×					×		
14	Zsidisin and Hendrick (1998)			×	×					×		
15	Van Hoof and Lyon (2013)				×				×	×		×
16	Airike et al. (2016)	×			×					×		
17	Rahim (2017)		×		×						×	
18	Amaeshi (2008)				×						×	
19	Donaghey (2014)				×						×	
20	Egels-Zanden (2016)	×	×		×						×	
21	Egels-Zanden and Lindholm (2015)				×						×	
22	Ehrgott et al. (2011)		×		×						×	
23	Hoejmose et al. (2013)				×						×	
24	Hughes (2005)				×						×	
25	Klassen and Vereecke (2012)		×		×						×	×

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88	Ciasullo et al. (2018)	×	×	×	×
89	Ni and Sun (2018)	×	×	×	×

Supply Chain Management: an International Journal

Fig. 1. Overall review process



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Fig. 2. Distribution of publications per year across the period studied

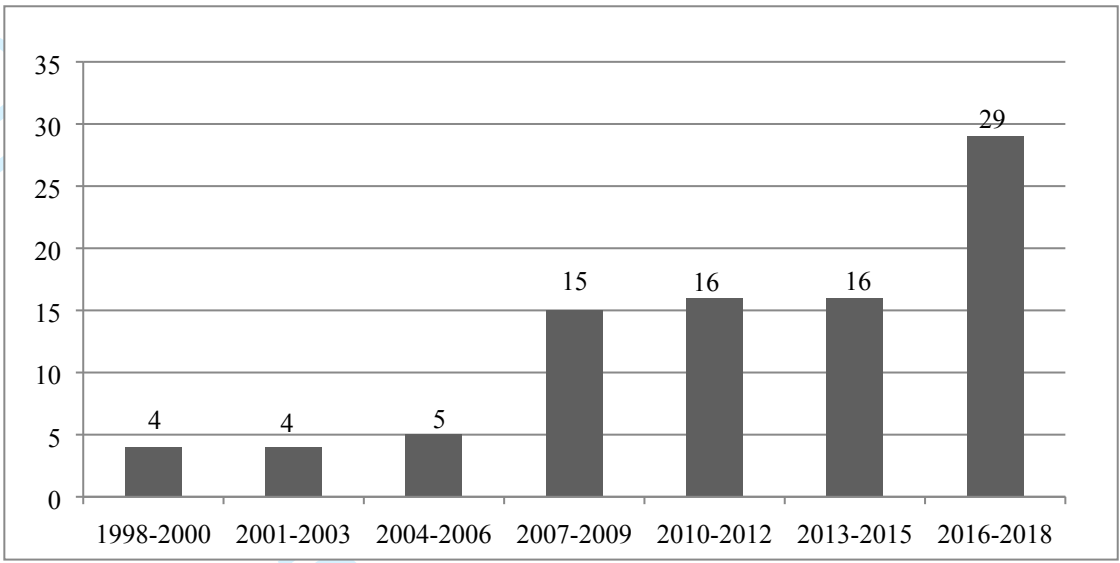
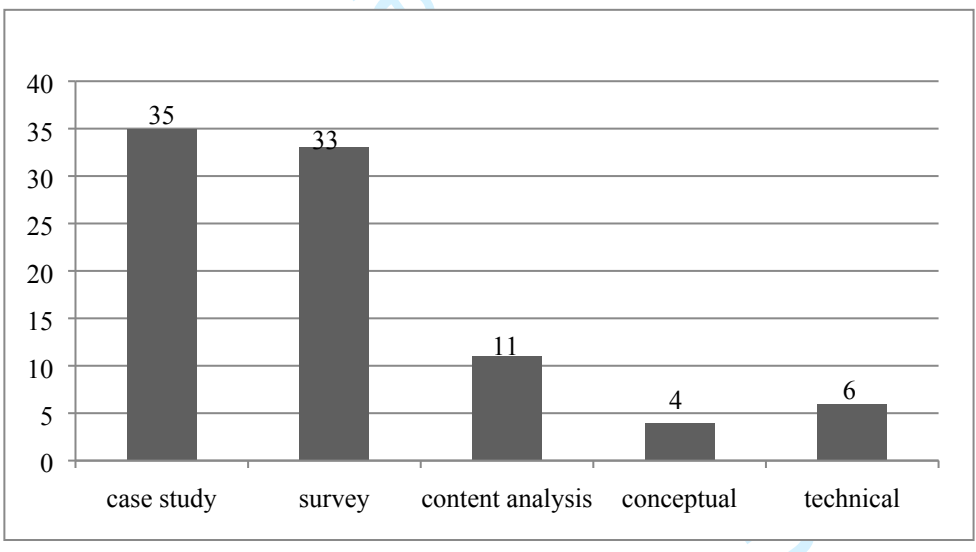
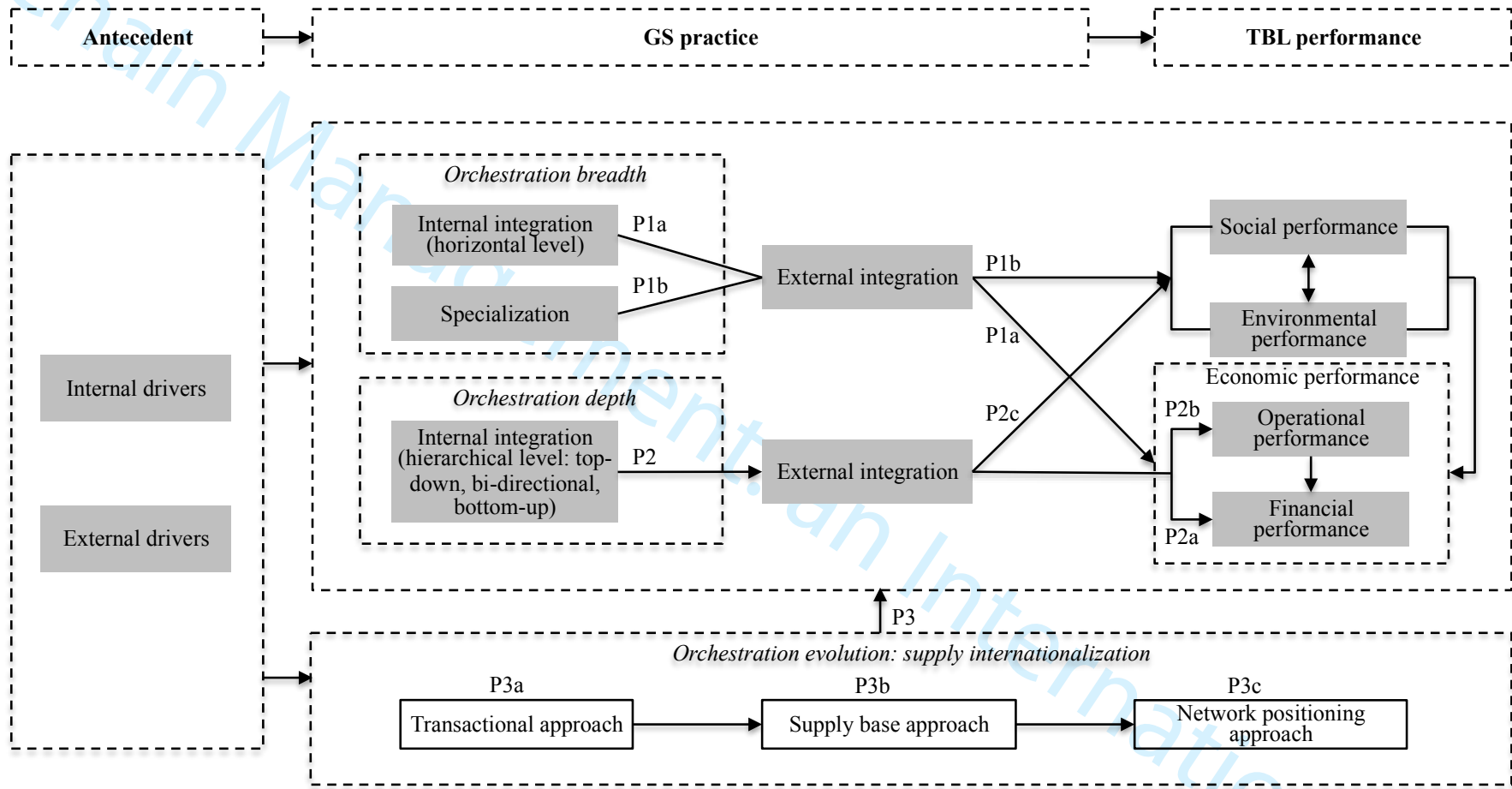


Fig. 3. Distribution of research methodologies



International Journal

Fig. 4. Conceptual framework



Appendix: Descriptive analysis of the reviewed 89 papers

	Author (year)	Methodology	Sample size	Underpinning theory	Industry
1	Haartman and Bengtsson (2018)	survey	681	N/A	manufacturing
2	Ni and Sun (2018)	survey	898	stakeholder theory, complementarity theory, contingency theory	manufacturing
3	Ciasullo et al. (2018)	content analysis, case study	N/A	N/A	footwear
4	Ferri and Pedrini (2018)	survey	189	stakeholder theory	mixed
5	Rezaee (2018)	content analysis	N/A	agency theory, stakeholder theory, legitimacy theory, signaling theory, institutional theory, stewardship theory	mixed
6	Chen (2018)	content analysis	N/A	resource-dependence theory, social exchange theory, social network theory	Not specific
7	Golini et al. (2018)	survey	619	N/A	manufacturing
8	Goebel et al. (2018)	case study	59	TCE	Not specific
9	Ndubisi and Nygaard (2018)	content analysis	2	N/A	fast fashion, food
10	Bustos and Moors (2018)	case study	2	N/A	food
11	Tong et al. (2018)	survey, technical	199	N/A	manufacturing
12	Villena and Gioia (2018)	case study	3	N/A	automotive, electronics, pharmaceutical
13	Awan et al. (2018)	survey	239	TCE	manufacturing
14	Lalwani et al. (2018)	content analysis	4	N/A	food
15	Normann et al. (2017)	case study	30	social exchange theory	apparel
16	Hyder et al. (2017)	case study	2	N/A	apparel
17	Gorg et al. (2017)	technical	2113	N/A	Not specific
18	Haleem et al. (2017)	survey	381	stakeholder theory	manufacturing
19	Riikkinen et al. (2017)	survey	305	N/A	manufacturing and service
20	Rahim (2017)	content analysis	N/A	N/A	ready-made garments
21	Abidin et al. (2016)	survey	107	N/A	manufacturing
22	Airike et al. (2016)	case study	3	N/A	electronics
23	Egels-Zanden (2016)	case study	1	N/A	clothing
24	Moosmayer and Davis (2016)	case study	4	N/A	electronics, textile

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3	25	Knorringa and Nadvi (2016)	case study	3	cluster theory	Not specific
4						
5	26	Dabhilkar et al. (2016)	survey	338	power and dependence theory	Not specific
6						
7	27	Lee (2016)	survey	248	N/A	mixed
8						
9	28	Busse et al. (2016)	case study	1	N/A	dairy, packaging and aluminum foil
10						
11	29	Wilhelm et al. (2016)	case study	7	contingency theory	mixed
12	30	Egels-Zanden and Lindholm (2015)	technical	43	N/A	garment
13						
14	31	Sancha et al. (2015)	survey	120	relational view	manufacturing
15	32	Luzzini et al. (2015)	survey	383	RBV	mixed
16						
17	33	Wiengarten and Longoni (2015)	survey	90	N/A	mixed
18						
19	34	Shah and Arjoon (2015)	survey	20	self-determination theory	oil and gas
20						
21	35	Donaghey (2014)	conceptual	-	N/A	Not specific
22	36	Gualandris et al. (2014)	survey	336	N/A	manufacturing
23						
24	37	Ehrgott et al. (2013)	technical	224	stakeholder theory, RBV	manufacturing, construction and retail
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27	38	Van Hoof and Lyon (2013)	technical	972	cost-benefit analysis	mixed
28						
29	39	Hoejmose et al. (2013)	survey	178	business strategy	mixed
30	40	Rahim and Wisuttisak (2013)	survey	N/A	N/A	RMG
31						
32	41	Mann et al. (2013)	content analysis	17	N/A	apparel
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34	42	Leppelt et al. (2013)	case study	7	TBL	chemical
35	43	Thornton et al. (2013)	survey	479	stakeholder theory	mixed
36						
37	44	Harms et al. (2013)	survey	32	N/A	stock exchange
38						
39	45	Perry and Towers (2013)	conceptual	1	TCE, RBV and org. learning	garment
40						
41	46	Agarwal and Thiel (2010)	case study	1	N/A	electronics
42						
43	47	Green et al. (2012)	survey	159	N/A	manufacturing
44	48	Kumar et al. (2012)	case study	2	N/A	food, electronics
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46	49	Klassen and Vereecke (2012)	case study	5	N/A	mixed
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48	50	Kolk (2012)	case study	1	N/A	food
49	51	Hollos et al. (2012)	survey	70	RBV	manufacturing, service
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51	52	Illge and Preuss (2012)	case study	2	N/A	textile
52	53	Ehrgott et al. (2011)	survey	244	stakeholder theory	mixed
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54	54	Goworek (2011)	case study	1	N/A	clothing
55	55	Elg and Hultman (2011)	case study, survey	1, 74	N/A	mixed
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57	56	Sethi et al. (2011)	case study	1	LCA	toy
58	57	Robinson (2010)	case study	88	GCC	food
59						
60	58	Oehmen (2010)	content	10	N/A	electronics

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3			analysis, action			
4			research			
5	59	Vachon (2010)	survey	55	Hofstede's national	Not specific
6					culture	
7	60	Joo et al. (2010)	technical	7	N/A	food
8	61	Reuter et al. (2010)	case study	4	N/A	chemical
9	62	Nawrocka (2009)	case study	2	N/A	manufacturing
10	63	Merk (2009)	content	N/A	N/A	garment
11			analysis			
12	64	Jiang (2009)	survey	108	N/A	apparel and textile
13	65	Svensson (2009)	conceptual,	2	transparency of SCM	telecom, fashion
14			case study		ethics	clothing
15	66	Andersen and Skjoett-	case study	1	N/A	home furnishing
16		Larsen (2009)				
17	67	Pullman et al. (2009)	survey	32	RBV	food
18	68	Lai et al. (2008)	case study	1	TCA, LCA and ECA	automaker
19	69	Lee and Klassen (2008)	case study	2	N/A	automobile
20	70	Amaeshi (2008)	content	-	N/A	Not specific
21			analysis			
22	71	Park and Dickson	survey	209	N/A	apparel and
23		(2008)				footwear
24	72	Tencati et al. (2008)	survey	25	N/A	footwear, garment
25						and seafood
26	73	Lim and Phillips (2008)	case study	1	N/A	footwear
27	74	Ciliberti (2008)	case study	5	N/A	mixed
28	75	Pagell (2007)	survey	335	N/A	manufacturing
29	76	Egels-Zanden (2007)	case study	9	N/A	toy
30	77	Pedersen and	case study	1	agency theory	home furnishing
31		Andersen(2006)				
32	78	Park and Lennon	survey	158	business ethics theory	apparel/shoe
33		(2006)				
34	79	Simpson and Power	case study	16	transaction cost theory	automotive
35		(2005)				assembly
36	80	Hughes (2005)	case study	10	corporate strategy,	food and clothing
37					interfirm org.	
38	81	Park and Stoel (2005)	survey	158	cognitive perspective	apparel/shoe
39	82	Rao (2002)	survey	52	N/A	Not specific
40	83	Kolk and Van Tulder	case study	6	N/A	garment
41		(2002)				
42	84	Maignan (2002)	conceptual	N/A	N/A	Not specific
43	85	van Tulder and Kolk	content	13	N/A	sport
44		(2001)	analysis			
45	86	Geffen and Rothenberg	case study	3	N/A	automotive
46		(2000)				assembly
47	87	Carter (2000)	interview,	132	dyadic method	mixed
48			survey			
49	88	Wycherley (1999)	case study	1	N/A	cosmetic
50	89	Zsidisin and Hendrick	survey	200	N/A	Not specific
51		(1998)				
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