

Achieving sustainability in global sourcing: towards a conceptual framework

Article (Accepted Version)

Jiang, Yan, Jia, Fu, Blome, Constantin and Chen, Lujie (2019) Achieving sustainability in global sourcing: towards a conceptual framework. Supply Chain Management. pp. 1-27. ISSN 1359-8546

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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

sustainable performance in the TBL dimensions appear to offer valuable resources and capabilities for companies. For MNCs operating in a global context, recognizing specific sustainable GS practices has great potential for their competitive advantage. Given this, we attempt to address the following research question.

How do MNCs achieve sustainability in the TBL dimensions through their global sourcing practices?

To answer this question, we carry out a literature review (Seuring and Gold, 2012) and subsequently use conceptual theory building (Carter and Rogers, 2008; Meredith, 1993; Weick, 1989) to develop a framework of sustainable GS, along with related research propositions. Specifically, we selected 89 papers in the overlapping fields of GS practices and sustainability for the literature review. After that, we further discussed the results from a resource orchestration perspective (ROP) (Sirmon et al., 2007; 2011) to advance propositions and thereafter build our research framework.

The remainder of this article is structured as follows. Section 2 presents a literature review of the basic terminological groundwork and the underpinning theory. This is followed by a description of the conceptual theory building methodology and an initial descriptive analysis of the literature review results in Section 3. In Section 4, the thematic findings are presented as the review results and then the conceptual development are further conducted to advance research propositions based on the integration of the literature review results and our discussion from a ROP perspective. Section 5 describes a possible future research agenda; and finally, Section 6 concludes with some comments on contribution and research limitations.

2. Theoretical background

2.1 Discussion on global sourcing and sustainability

In order to discern the major themes of sustainable GS, we review the literature on global sourcing and sustainability and identified the categories, respectively. The categories are prepared for as a step of the following literature review approach, which will be elaborated in details in the next section.

Previous research on GS has identified several concepts, such as the integration of materials, processes, standards among others (Trent and Monczka, 2003); the design of a global organization ensuring value-adding activities (Ambos and Schleglmilch, 2007); the

information exchange and partnering relationships in the sourcing on a global scale (Bozarth et al., 1998); the international trade with intention to develop differentiated products (Antras and Helpman, 2004); the particular strategy addressing the cultural differences and long transportation distances in GS process (Frear *et al.*, 1992). Among these concepts, Jia et al. (2017) propose a comprehensive categorization of GS that we adopt when coding the reviewed papers. Based on these concepts, we apply an abductive research process (Spens and Kovács, 2006), which adapts concepts in Jia et al. (2017) into the sustainable GS framework by adding sustainability-specific concepts as the performance outcomes. In addition, we also identify an antecedent category as it informs the preceding factors of GS practices towards sustainability, which allow for a more structured understanding of the sustainable GS topic. This integrated framework is adopted because it provides a generic list of GS practices that enable sustainable performances and therefore serves as a sound starting point. The framework is composed of three main categories with each category being further broken down into several practices.

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

INSERT TABLE 1 HERE

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.

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

INSERT TABLE 2 HERE

3. Research methodology

We follow the conceptual theory-building method that is originally proposed by Meredith (1993) and further developed by Carter and Rogers (2008), first evaluating a body of literature to summarize the common elements and contrast the differences; and second, integrating a selected theory (e.g., ROP) to advance research propositions and therefore, build the final conceptual framework (Carter and Rogers, 2008; Handfield and Melnyk, 1998; Meredith; 1993). Conceptual theory building method can create a balance between inductive and deductive reasoning and research (Meredith, 1993), after inductively evaluating a number of different works, the discussion based on existing theory can facilitate the development of “specific prediction” (Wacker, 1998, p.368), which is a “logical deduction” that helps bring about the conceptual framework’s propositions (Carter and Rogers, 2008; Handfield and Melnyk, 1998, p.323).

We apply a content analysis based literature review approach proposed by Seuring and Gold (2012), which integrates Mayring (2010) method into four steps: 1) materials collection, 2) descriptive analysis, 3) category selection, and 4) material evaluation. Among these four steps, the steps 1), 2), and 4) are widely accepted literature review process steps (e.g., Tranfield *et al.*, 2003; Fink, 2010), and step 3), the category selection, builds on content analysis techniques for a rule (i.e., logic of coding) and replicable definition of a category system (i.e., coding scheme) (Seuring and Gold, 2012; Marying, 2010). This system is refined in an iterative way during the analysis process and is used to synthesize and analyse the materials (Sauer and Seuring, 2017; Seuring and Gold, 2012). We apply this model rather than other generic literature review approaches because it is well adapted to the field of OSCM, which is the ground field of this study. The details of the first two steps are stated in

the following parts of this section, and the results of materials analysis are demonstrated in next section, thematic findings.

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

3.1. Materials collection

To collect the most influential papers, we used a four-step methodology recommended by Rowley and Slack (2004). *First*, we searched all possible combinations between GS-related terminologies and sustainability related keywords (Figure 1) in the Scopus database, the most comprehensive and commonly used database in recent reviews (Yang *et al.*, 2018; Jia *et al.*, 2017; Ahi and Searcy, 2013;). The keywords were chosen based on previous literature reviews on similar topics, the authors' own research experience and expert views from fellow SCM academics after intensive brainstorming discussions between the co-authors.

INSERT FIGURE 1 HERE

We selected only English-language articles in peer-reviewed journals using an open starting time in order to trace back to the origin of research up to December 2018. We then identified the most relevant subject areas and chosen the document types as "article" (see Figure 1). As a result, 6,765 relevant papers were found without removing duplicates. *Second*, we evaluated the articles by reviewing the titles and abstracts and applying the inclusion and

exclusion criteria presented in Figure 1. This process resulted in 285 potentially relevant papers for the third round of selection. *Third*, we reviewed and analysed the full texts and identified the 82 most influential articles. *Fourth* and last, we adopted a cross-reference approach by checking references and further identified seven most relevant articles. We eventually identified **89** papers for final review.

The overall review process is shown in Figure 1. The inclusion and exclusion criteria were determined through exhaustive discussion by the research group. During the review process, two researchers worked independently to make “include” or “exclude” decisions. Then, they compared the results and reached an agreement on all the items they did not agree on initially.

3.2. Descriptive analysis

3.2.1. Distribution of publications across the period

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

INSERT FIGURE 2 HERE

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

such as the *International Journal of Operations & Production Management*, the *International Journal of Production Economics*, the *Journal of Operations Management*, the *Journal of Supply Chain Management* and *Supply Chain Management: An International Journal*; and the “Sustainability and Ethics” discipline, which includes journals such as *Business Strategy and the Environment*, *Corporate Social Responsibility and Environmental Management*, the *Journal of Business Ethics*, the *Journal of Cleaner Production* and *Sustainable Development*.

3.2.3. Distribution of research methodologies and underpinning theory

The 89 articles identified were also analysed for their research methodologies, underpinning theories, and industry focused (see Appendix: Descriptive analysis of the reviewed 89 papers). We particularly extracted the research methodology and underpinning theory and summarized their distribution in Figure 3 and Table 4, respectively.

INSERT FIGURE 3 HERE

In Figure 3, we can observe the dominance of empirical research including both qualitative research methods (e.g., case study) and quantitative research methods (e.g., survey). This can help gain insights into complex and contemporary “real world” phenomena, i.e., case study (Yin, 2009), or allow more accurate and credible knowledge through validating multiple hypotheses, i.e., survey (Fowler, 2013). Some studies adopted the content analysis method that has the specific strength of combining qualitative approaches (richness) with quantitative analysis (preciseness) (Seuring and Gold, 2012; Duriau et al., 2007). Only a few studies are labelled as conceptual papers; indicating that the sustainable GS area is relatively young and more theory development studies are still required.

INSERT TABLE 4 HERE

Through analysing the underpinning theory, we found that only 34 out of 89 papers adopted a theoretical framework (accounting for 38%). In Table 4, we can see that some theoretical lenses are more popular than others. In particular, stakeholder theory, resource based view, and transaction cost theory are the most adopted ones, which are the classical theories in the strategic management field. Almost all theories were focused at the

organizational/firm level rather than individual and behaviour level. Since some articles adopt more than one theory, the frequencies do not add up to the total number of reviewed articles.

4. Thematic findings

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

INSERT TABLE 5 HERE

4.1. Antecedents to GS practice

4.1.1. Internal driver

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

4.1.2. External driver

As far as external drivers are concerned, 28 out of 89 papers on external drivers reveal that legislation and external stakeholder pressure are the primary factors motivating sustainable GS practices. For MNCs based in developed countries, the governmental laws and regulations are usually well articulated and implemented emphasizing the environmental and social issues in great detail, which effectively drive a firm towards sustainability (Rahim,

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

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

4.2.5. Coordination and control mechanisms

12 out of 89 papers examine the coordination and control mechanisms of GS towards sustainability. As previously defined, coordination and control mechanisms include not only the interdependence between tasks and actors (i.e., coordination) and the execution of organizational goals (i.e., control), but also the corresponding ICT and information processing capabilities. In many companies, sustainability targets and objectives (especially social and environmental objectives) are not as well monitored or quantified as other operational targets and objectives, such as savings or profitability. Thus, operations managers face a challenge in making decisions that simultaneously meet financial/operational requirements and social and environmental performance. Regarding this issue, Lai *et al.* (2008) emphasize the division manager's scope of control in a packaging system assessment by distinguishing the operations manager's controlling boundaries between assessing economic impact and environmental impact.

In addition to the scope of control, the style of control is also considered important in making sustainability decisions. For example, Drumwright (1994) reports that there can be a tendency for employees to reject top management's mandated strategic approaches towards environmental buying when a top-down approach is used. Therefore, top management needs to be careful when considering the possible negative psychological reactions of employees towards top management's action. Similarly, Goebel *et al.* (2018) state that in an organization whose culture fosters obedience to authority, less effort will be made in improving social and environmental sustainability. Additionally, Park and Lennon (2006) propose that rather than adopting mandatory approaches, creating a supportive environment through informal communication (e.g., discussion forums) may be more persuasive and effective in enabling

employees to learn and extend their capabilities for performance improvement in the environmental and social dimensions.

Meanwhile, the survival and success of companies is increasingly influenced by diverse stakeholder groups, such as consumers, employees, local communities, suppliers, distributors and shareholders (Dickson *et al.*, 2009; Roberts, 2003). Therefore, companies have strived to build a competitive advantage not only by implementing sustainable business practices but also by communicating those practices to their stakeholders (Cone, 2017; Chaudhri and Wang, 2007). Mann *et al.* (2013) emphasize that websites, compared to traditional channels (e.g., product packaging, public reports, and advertising campaigns on TV and billboards), allow for a faster and more transparent communication of companies' social and environmental performance in the context of GS.

4.2.6. Allocation of decision-making power

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

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

social aspects of TBL performance. Both Riikkinen *et al.*'s (2017) and Sancha *et al.*'s (2015) studies empirically support the idea that improvements in social performance, such as working conditions and human rights, have a positive impact on firms' economic performance.

Second, there is a co-variant relationship between social performance and environmental performance. Though environmental and social performance are usually seen as two separate performance aspects, it is noted by studies that they strongly co-vary. On the one hand, studies show evidence supporting the viewpoint that social and environmental performance can be positively affected together by GS practices (Gualandris *et al.*, 2014; Reuter *et al.*, 2010). The adoption of new production processes for reducing pollution can improve the working conditions for company employees (Elkington, 1994). On the other hand, the improvement of employees' welfare can also reduce the number of potentially damaging environmental actions undertaken by the firm (Marshall *et al.*, 2005). In addition, employees' safety and satisfaction are positively related to environmental performance improvement (Rothenberg *et al.*, 2001; Johnson, 2006).

Third, within economic performance, the improvement of operational performance appears to facilitate financial performance. Pullman *et al.* (2009) empirically test this and suggest that firms targeting financial gain from sustainable GS practices should pursue this gain by increasing operational performance.

4.4. Conceptual development based on ROP

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

4.4.1. GS practices through ROP breadth

Regarding internal integration (horizontal level), the literature shows a positive influence of horizontal integration on sustainable performance without clearly specifying and discriminating between the different TBL dimensions (e.g., Oehmen *et al.*, 2010; Leppelt *et*

al., 2013). There is also an opposite viewpoint indicating that such integration cannot directly lead to sustainable performance and may even be counterproductive in terms of economic performance (Luzzini *et al.*, 2015). Based on the ROP, by means of internal integration at a horizontal level, the specific resources and capabilities within a function (e.g., R&D or marketing) can be internally leveraged or borrowed by another function (e.g., purchasing). Specific human capital resources are therefore structured and subsequently bundled internally in cross-functional teams to create the appropriate capabilities for the desired outcomes (Sirmon *et al.*, 2011). The cross-functional teams can indirectly improve efficiency as well as reduce costs (Trent and Monczka, 2002) through leveraging external resources, e.g., supplier development activities. For example, the sales information from marketing function can help the purchasing function better forecast the future order volume according to market demands, and the technological resources of R&D department can promote the negotiation with suppliers for new product manufacturing, which in turn can improve the firm's operational performance. In addition to the internal functions, the horizontal entities (e.g., an international purchasing office in China) are another important resource for the firm. The collaboration among them can create competitive advantages through the larger bargaining power generated in negotiating with suppliers, which in turn can reduce the cost and improve the firm's financial performance.

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

With regard to internal integration (hierarchical level), the literature shows different viewpoints regarding its impact on sustainable performance (e.g., Dabhilkar *et al.*, 2016; Hollos *et al.*, 2012). As previously stated, the hierarchy in the GS process commonly consists of four levels: corporate purchasing, plant purchasing, business unit purchasing, and international purchasing office (Jia *et al.*, 2017). From an ROP depth point of view, we consider internal integration through these hierarchical levels as the flow of resources moving up and down the purchasing organizational hierarchy globally. The resources residing in at various hierarchical levels can be structured, bundled, or leveraged in a top-down sequence, a bottom-up sequence, or a bi-directional sequence (Sirmon *et al.*, 2011; Floyd and Lane, 2000). Each hierarchical integration sequence may require different managerial mechanisms, i.e., control, coordination and allocation of decision-making power (e.g., Lai *et al.*, 2008; Park and Lennon, 2006; Ehr Gott *et al.*, 2013), to generate capabilities towards integrating external resources (i.e., suppliers), which in turn can create competitive advantages and improve firms' sustainable performance accordingly (Sirmon *et al.*, 2011). Below we discuss managerial mechanisms used in hierarchical integration sequences in details.

First, in a top-down integration sequence, the GS decision-making power is centralized in the global commodity team who directs major changes in the resources (i.e., structuring actions), such as acquisitions of resources at a global scale (Sirmon *et al.*, 2011). The control mechanism may be required by the global commodity team to ensure the deployment of the plan (i.e., leveraging actions). The bundling actions are often delegated to middle purchasing level, which follows the lead of global commodity team selecting a congruent bundling approach to supervise the operational purchasing level to conform to the plan (Sirmon *et al.*, 2011; Floyd and Lane, 2000). In such a sequence, the top purchasing level aggregates the internal needs from each purchasing level and collectively negotiates with suppliers, which perform well with regard to efficiency as well as cost reduction due to the large bargaining power. In practice, a large number of MNCs adopt this mechanism to drive their GS activities and achieve improvements in financial performance, e.g., IKEA or Nestlé.

Second, in a bi-directional integration sequence, collaborating with a global commodity team at an operational purchasing level allows middle purchasing to be aware of the resource orchestration activities taking place in the firm. Through collaborations, middle purchasing level can be informed of the accumulation and bundling of resources that operational purchasing level initiate as well as the plans that the global commodity team adopts to achieve the desired performance outcomes (Sirmon *et al.*, 2011). Therefore, the coordination

mechanism may more likely be required to synchronize the resource managerial actions, which are led by the middle purchasing level. In this sequence, the middle purchasing level needs to both facilitate the operational purchasing level activities and collect and process information for the top purchasing level to make subsequent decisions (Floyd and Lane, 2000). In addition, more individuals within the firm can be involved in the supplier management process (i.e., external integration), which in turn can create flexibility and improve the firm's operational performance.

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

Proposition 2. *To better integrate the external resources (suppliers) in depth, there are three internal integration (hierarchical levels) sequences with corresponding managerial mechanisms, i.e., a top-down sequence with a control mechanism; a bi-directional sequence with a coordination mechanism and a bottom-up sequence with an allocation of decision-making power to lower levels of the purchasing hierarchy.*

Proposition 2a. *Through the mediating role of external integration, the top-down sequence with control mechanisms exert a positive influence on the firm's financial performance.*

Proposition 2b. *Through the mediating role of external integration, the bi-directional sequence with coordination mechanisms exert a positive influence on the firm's operational performance.*

Proposition 2c. *Through the mediating role of external integration, the bottom-up sequence with an allocation of decision-making power to lower levels of the purchasing hierarchy exerts a positive influence on the firm's social and environmental performance.*

4.4.3. GS practices through the ROP evolution

Regarding supply internationalization (i.e., resource orchestration evolution), the literature shows its moderating role on the relationship between GS practices and sustainable performance (e.g., Gualandris *et al.*, 2014; Aragon-Correa and Sharma, 2003), and the moderating role is further specified according to the sourced items (e.g., Trautmann *et al.*, 2009; Dabhilkar *et al.*, 2016). According to the ROP, specific resource orchestration actions have to be tailored to fit the evolution of GS, which is characterized by three approaches or stages that evolve from the short term to the long term of GS with a tendency towards maturity. The three approaches/stages include 1) the transactional approach that focuses on discrete and un-structured sourcing activities, 2) the supply based approach that focuses on establishing a set of supplier relationships in the sourcing country, and 3) the network positioning approach in which both supplier and customer relationships are developed in a network of business relationships in a host country (Najafi *et al.*, 2013). All of these approaches make sense at different stages in a process evolving towards achieving the sustainable goals.

Through this evolution, supply internationalization may change accordingly (Jia *et al.*, 2014). At the first stage, using a transactional approach, a low degree of supply internationalization is required with a small quantity of sourced items and a low degree of complexity, and the items sourced at this stage are usually standardized products (Najafi *et al.*, 2013). Experimental resource allocation patterns are commonly undertaken at this stage to select valuable and potentially rare operational and product configurations (Sirmon *et al.*, 2011). Thus, firms are unlikely to invest significantly in management capabilities and are

exposed to the problems that result from the long distance and cultural differences, which in turn may negatively influence firms' performance in the TBL dimensions.

At the second stage, using a supply based approach, firms develop a set of supplier relationships in the new market with an increasing degree of supply internationalization. This stage may require firms to develop skills in accessing and building relationships with suppliers (Sirmon et al., 2011). To manage a larger number as well as the higher complexity of suppliers, firms may set up IPOs in the suppliers' home countries and invest in the development of supplier relationships (Jia *et al.*, 2014). These activities permit a growing firm to leverage its resource portfolio to gain competitive advantage (Sirmon et al., 2011), which in turn can reduce the cost and shorten delivery times while maintaining a high quality, i.e., achieving economic benefits.

At the third stage, using a network positioning approach, the degree of supply internationalization continuously increases with increasing volume and complexity with regarding to sourcing items. This requires that firms adopt a proactive approach when dealing with the firm's external stakeholders and form strategic relationships with both suppliers and customers (Sirmon et al., 2011), e.g., positioning itself in a network of relationships in a host country. The integration with both suppliers and customers allows for an interactive and collaborative business environment. Moreover, a mature firm's resources may also be used at this stage to extend the firm's reach in its external environment to exert greater influence and to stabilize its position in the competitive environment (Sirmon et al., 2011). This can facilitate the idiosyncratic knowledge transfer of environmental and social sustainability regularly on one hand (Perols *et al.*, 2013), and generates more responsive actions to the environmental and social requirements on the other (Simpson *et al.*, 2007). Finally, firms can achieve the sustainable goals of the environmental and social dimensions in the third stage. Therefore, we propose our third set of propositions.

Proposition 3. *Supply internationalization moderates the relationship between implementing GS practices and sustainable performance improvement.*

Propositions 3a. *The moderating effect of supply internationalization is negative on the relationship between implementing GS practices and overall sustainable performance at the transactional approach stage.*

Proposition 3b. *The moderating effect of supply internationalization is positive on the relationship between implementing GS practices and economic performance (both financial and operational) at the supply based approach stage.*

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

4.4.4. Interrelationships among TBL performance

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

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

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.

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

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

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

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

potential area of research could be the roles of the top or middle purchasing levels in influencing sustainable GS practices.

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

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

6. Conclusion

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

their global sourcing practices? Through evaluating the relevant literature of sustainable GS, further discussed from the ROP perspective, we have developed an integrated conceptual framework with three sets of propositions that is capable of addressing this research question.

First, the framework is comprised of antecedents, five GS practices and three sub-dimensions of TBL performances, which reveal various linkages between GS practices and sustainable performance on each dimension of the TBL. The framework fosters an understanding of the implications of GS practices for sustainable performance. Second, this study may be the first to explore the GS practices from an ROP perspective, i.e., ROP breadth, ROP depth and the ROP evolution. The ROP is useful in analysing the theme and building a theory of sustainable GS. Third, based on this study, we further propose eight directions for future research, which will benefit scholars interested in the overlapping fields of GS and sustainability.

There are, however, some limitations of this paper. First, concerning the research method adopted, our framework is developed through evaluating relevant literature and developing a conceptual framework based on the selected theoretical lens (i.e., ROP), so the conceptual model may not represent all the complexities in reality. Therefore, further empirical work is needed to refine and validate the framework. Second, in the literature evaluation, we adopted the selective approach (based on ROP) of a content-based literature review that allows us to focus on the key contributions of the research topic. However, eligible studies may have been missed out due to the limited scope, hindering a more comprehensive explanation of sustainability GS.

Acknowledgement

The authors appreciate the financial support from Humanities and Social Sciences project of The Ministry of Education of China (Grant number: 17YJA630034) and the Natural Science Foundation of Fujian Province of China (No. 2017J01519)

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