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# Motives, processes and practices of sustainable sourcing: a literature review

Practices of sustainable sourcing

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## Abstract

**Purpose** – This paper aims to attempt to examine pressures, incentives, processes and practices used for sustainable sourcing. Further, it also proposes a framework to provide a composite method for monitoring and controlling the sustainability aspects of supply management. This would enable suppliers to consider buyers' requirements, translate these into suitable strategies, assess suppliers' capabilities and also judge the impact of these strategies on suppliers.

**Design/methodology/approach** – This study opts for literature review as a method. In total, 150 research papers in peer-reviewed English language journals were reviewed to examine the pressures, incentives, processes and practices used for sustainable sourcing.

**Findings** – This study attempts to answer the “why”, “what”- and “how”-related questions about sustainable sourcing. It is observed that research in sustainable sourcing is multileveled and involves various functional departments in a firm. It is diverse and fragmented and is more concentrated on certain geographic areas, industries and methodologies.

**Practical implications** – This study can be helpful to both researchers and practicing managers. It provides a snapshot of the work done on sustainable sourcing, which can be used as a base for research addressing specific aspects of sustainable sourcing or for building strategies related to sustainable sourcing.

**Originality/value** – This study takes the present reviews available in the literature forward and provides a generic view of sustainable sourcing and proposes a composite method for monitoring and controlling the sustainability aspects of supply management. It attempts to consolidate the diverse literature presently available on sustainable sourcing.

**Keywords** Qualitative, Sustainability, Literature review, Triple bottom line, Supply management, Sustainable sourcing

**Paper type** Literature review

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## 1. Introduction

Organizations are reaching out to suppliers in new locations worldwide for raw materials and/or end products for meeting customer requirements in terms of cost, quality, speed and flexibility. Organizations are under increasing pressure of complying with government regulations, meeting customer needs and satisfying the demands of non-governmental organizations and other stakeholders to adopt sustainability in their products and business processes (Seuring and Müller, 2008a; Krause *et al.*, 2009; Igarashi *et al.*, 2013). Firms are responsible not only for their own operations but also for the operation of their partner firms. Therefore, in addition to their own processes, firms need to consider implementing sustainability aspects across the entire supply chain (Zhu *et al.*, 2008; Pagell and Wu, 2009). Thus, organizations are adopting environmental and social factors, in addition to the traditional economic criteria, in their supplier selection as a part of a broader objective of achieving sustainable forms of production and consumption. This has expanded the scope of “sourcing” from the traditional factors of quality, time, performance history and cost to more sustainable sourcing practices (Dai and Blackhurst, 2011).

Because the buyers are reaching out to developing countries to buy low-priced labor-intensive raw materials and/or end products (Reuter *et al.*, 2010), the suppliers in these countries are under pressure to adopt sustainability in their practices (Lee, 2008; Mizgier *et al.*, 2013). Suppliers are encountering bottlenecks in achieving sustainability of their global supply chain because of limited resources, funds, non-optimal operational planning and slow technology adoption (Lee, 2008). This makes suppliers’ adaptability to sustainability practices important (Hajmohammad and Vachon, 2016). Thus, there is a need to have a composite method for monitoring and controlling the sustainability aspects of supply management. This will enable the suppliers to consider the buyers’ requirements, translate these into suitable strategies, assess the suppliers’ capabilities and also judge the impact of these strategies on the suppliers. This composite method will help in reducing the gap between the buyers’ needs and the suppliers’ willingness to adopt sustainability practices.

As a starting point toward developing this composite technique, it is required to have an understanding of objectives, present practices and methods used in the literature for sustainable sourcing. This is achieved by surveying the literature in detail. Thus, there are multifold objectives of studying the reported literature. This study intends to the following:

- (1) Providing a systematic review to understand the “*why, what and how*” of sustainable sourcing. This would help in understanding the maturity of sustainable sourcing as a discipline (Spina *et al.*, 2013). Thus, this study presents a systematic and extensive analysis of the fragmented literature so as to answer three basic questions related to sourcing that are as follows:
  - Why do firms adopt sustainable sourcing practices?
  - What are the steps to be taken to make sourcing more sustainable?
  - How should sustainable sourcing be implemented?
- (2) Understanding descriptive dimensions of the reviewed literature such as year, journal of publication, methodologies used, industry and country of study. This understanding would help in replicating the similar research and also helpful in tracing the arguments built in the published research (Seuring and Gold, 2012).
- (3) Developing a sourcing sustainability framework to provide a composite method for monitoring and controlling the sustainability aspects of supply management. The sustainability framework is based on the comprehension of the reviewed

literature, with due consideration of not only the suppliers' and buyers' views but also the importance of the suppliers' adoptability of the proposed framework.

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sourcing

Even though there are reviews already available on sustainable sourcing, they are sparse. These studies try to integrate sustainable aspects of sourcing with traditional aspects and address any one aspect of purchasing such as supplier selection and method of sourcing. The details of these reviews are presented in [Table I](#).

The reported reviews present sustainable sourcing on specific dimensions and answer specific questions, for example, [Table I](#) shows that out of ten reviews, seven have considered an integrative view (triple bottom line [TBL]); four papers are restricted only to the review of supplier selection methods; two reviews suggest drivers and barriers; three of them summarize the evolution of sustainable sourcing and one suggests use of industrial marketing and purchasing interaction approach to determine the dominant theories underpinning and guiding the research in the area of sustainable purchasing and supply management. These reviews do not help in getting a comprehensive picture of the discipline because they lack in the breadth of the topics covered and typically explain the terms and concepts present in a particular aspect of the sourcing decision. For better understanding the premise of sustainable sourcing, it is necessary to get answers of the fundamental questions, such as what, how and why of sustainable sourcing. To the best of our understanding, there is no single review article that answers all these three questions together and provides a comprehensive analysis.

The present literature survey fills this gap by putting together descriptive dimensions of the studies performed. Further, it enables to present a snapshot of the current status of the literature. This study follows the approach similar to that of [Spina et al. \(2013\)](#) that describes the development in the area of purchasing and supply management but restricts itself only to the literature related to sustainable sourcing. The intent is not to provide a new theory of sustainable sourcing but to present several simple to understand dimensions coming out of the literature. It attempts to consolidate the diverse literature presently available on sustainable sourcing.

Reference	Focus
<a href="#">Højmosé and Adrien-Kirby (2012)</a>	Topics covered and methods used in the area of sustainable procurement
<a href="#">Miemczyk et al. (2012)</a>	Definitions and ways to achieve sustainability in purchasing and supply management
<a href="#">Igarashi et al. (2013)</a>	Supplier selection methods used in green purchasing/ sourcing
<a href="#">Tate et al. (2012)</a>	Environmental aspects of purchasing and supply management, specifically practices followed for the same in both theory and practice
<a href="#">Schneider and Wallenburg (2012)</a>	Operationalize sustainable sourcing based on the literature and identify various stakeholders and their role in sustainable sourcing
<a href="#">Giunipero et al. (2012)</a>	Drivers and barriers of sustainable purchasing
<a href="#">Johnsen et al. (2017)</a>	Dominant theories underpinning and guiding the research in the area of sustainable purchasing and supply management
<a href="#">Zimmer et al. (2016)</a>	Decision-making models used for supplier selection, monitoring and development
<a href="#">Wetzstein et al. (2016)</a>	Characteristics of developments and areas of research in supplier selection literature
<a href="#">Zorzini et al. (2015)</a>	Social aspects of sourcing and theories underpinning socially responsible sourcing

**Table I.**  
Literature review  
related to sustainable  
sourcing

This study can be useful to researchers and practitioners in the areas of purchasing, sourcing and supply chain management. This paper can be a good starting point for research in sustainable sourcing because it presents the analysis for a large range of variables associated with sustainable sourcing. This study may act as a foundation to build future research. Further, this study can be helpful to managers and purchasing professionals in terms of understanding various aspects of sustainability on which they can build their strategies suitable to their own objectives.

The rest of this paper has been organized as follows: Section 2 provides related definitions. Section 3 presents the methodology followed in the study for collecting articles and analyzing the content. Section 4 gives a detailed analysis of the selected articles. Section 5 presents discussion and Section 6 provides a framework for future research. Finally, Section 7 concludes the study.

## 2. Definitions

In the global market, where a firm can do business with other firms that have similar objectives, wrong supplier selection, particularly with respect to social and environmental history, will eventually lead to significant losses for the firm (Goebel *et al.*, 2012). The traditional performance measures to judge the financial and operational performances of a supplier are cost, delivery lead time and quality (Chen and Paulraj, 2004; Gold *et al.*, 2010). Firms must also measure the performance of their suppliers in terms of ecological (Christensen *et al.*, 2008; Paulraj, 2011) and social factors (Maignan *et al.*, 2002; Maignan and McAlister, 2003). This integration of *Economic, Environmental* and *Social* factors is referred to as the TBL approach (Elkington, 1998). The function of sourcing is central to achieving the growing needs of sustainability. Thus, the emerging area of sustainable sourcing is getting importance in the purchasing literature (Tripathi and Petro, 2010). This is also referred to as sustainable purchasing, green purchasing, responsible purchasing or ethical purchasing (Pagell *et al.*, 2010).

The initial studies related to sustainability had tried to fit social and environmental factors into traditional business practice. Sustainable sourcing needs to be studied from a broader perspective because of shrinking margins caused by immense competition. This has made sourcing a vital and strategic function in firms. In general, sourcing acts as a link between a firm's internal functions and its external stakeholders and includes activities such as designing and selection of products, selection and hiring of transport services and third party logistical firm, and supplier selection and management (Eltantawy *et al.*, 2009). All these functions have a major impact on a firm's performance across TBL activities and help determine how sustainable is the firm (Schoenherr *et al.*, 2012). So firms need to adopt a holistic approach for sourcing, which should integrate economic, environmental and social aspects (Carter and Rogers, 2008). Table II defines the concept of sustainable sourcing differently under many headings. There is an obvious overlap between many practices that concern sustainability. These definitions can be useful for understanding sustainable sourcing.

## 3. Methodology

This study performs a systematic literature review of sustainable sourcing. Systematic literature review is defined as "a specific methodology that locates existing studies, selects and evaluates contributions, analyses and synthesizes data" (Denyer and Tranfield, 2009, p. 671). These reviews are helpful for reducing research biases and present literature findings in a transparent and systematic way (Kim *et al.*, 2016; Sauer and Seuring, 2017). For providing a detailed methodology for the present systematic literature survey, this study

Terms used	Author (s)	Definition
Sustainable purchasing	Miemyczyk <i>et al.</i> (2012, p. 489)	“Sustainable purchasing is the consideration of environmental, social, ethical and economic issues in the management of the organization’s external resources in such a way that the supply of all goods, services, capabilities and knowledge that are necessary for running, maintaining and managing the organization’s primary and support activities provide value not only to the organization but also to society and the economy”
Sustainable sourcing	Pagell <i>et al.</i> (2010, p. 58)	“Managing all aspects of the upstream component of the supply chain to maximize triple bottom line performance”
Sustainable purchasing	Walker <i>et al.</i> (2009, p. 349)	“The pursuit of sustainable development objectives through the purchasing and supply process incorporating social, environmental and economic aspects”
Sustainable procurement	Walker and Brammer (2009, p. 128)	“Procurement that is consistent with the principles of sustainable development, such as ensuring a strong, healthy and just society, living within environmental limits, and promoting good governance”
Sustainable procurement	Sustainable Procurement Task Force (2006, p. 11)	“A process whereby organizations meet their needs for goods, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization but also to society and the economy, whilst minimizing damage to the environment”

**Table II.**  
Definitions of  
sustainable sourcing

analyzed the methodologies reported in the literature. Referring to Hoejmose and Adrien-Kirby (2012), Miemyczyk *et al.* (2012), Igarashi *et al.* (2013), Seuring and Müller (2008b) and Spina *et al.* (2013), the present analysis technique is as follows.

### 3.1 Data collection

*Unit of analysis and delimiting:* Research papers in the peer-reviewed English language journals were established as the basic unit of analysis. These include empirical works, conceptual papers, analytical modeling and case studies published between 1998 and 2017. This study also includes papers on sustainable supply chain management (SSCM), but the focus is only on activities related to sourcing alternatively, procurement or purchasing or supply management, including the procurement process and supplier selection. This study does not consider other topics such as inventory management, transportation and recycling of waste. This review also excludes papers that are published in other languages, conference papers, dissertations (both master’s and doctoral), textbooks, working papers, news articles, reports and papers that do not have management focus (Seuring and Müller, 2008b; Spina *et al.*, 2013).

*Search for literature:* A structured keyword search was done using keywords, namely, sustainable sourcing, green purchasing, responsible purchasing, ethical purchasing, sustainable supply management, sustainable supplier selection and sustainable supplier management during December 2016 and January 2017 (Miemyczyk *et al.*, 2012; Seuring and Müller, 2008b). Additionally, the keywords “sourcing” or “purchasing” were replaced with “procurement”. These key words were created based on the similar reviews done in the past. The search was done in databases of major publishers, namely, Elsevier/Science Direct, Emerald, Wiley Inter Science, Taylor and Francis, and in online library databases, namely, EBSCO, ABI Info and J-STOR. More than a thousand titles were found with the initial



keyword search. These articles were then checked for relevance initially based on titles, and when the scope was not clear, they were checked based on keywords and abstracts for judging the relevance of papers. If the scope was still not clear after going through abstracts, then the entire articles were also quickly scanned (Miemczyk *et al.*, 2012). Based on this screening, a total of 150 papers were selected for this review.

### 3.2 Category selection, classification and data analysis

Articles were first evaluated to understand descriptive dimensions of the studies. These dimensions were used to categorize the papers based on year, journal of publication, methodology used, industry and country of study (Seuring and Müller, 2008b).

The papers were then categorized to understand the why, what and how of sustainable sourcing. Thus, the motives of sustainable sourcing were positioned under the “why” category. The processes used for attaining sustainable sourcing were grouped in the “what” category that presents the big picture to adopt sustainable sourcing through certain practices. These practices include tools, techniques and methods used for achieving sustainable sourcing and were placed under the “how” category.

For categorizing the literature, this study has adopted an inductive approach similar to that used by Hojmosse and Adrien-Kirby (2012) for the thematic analysis. In their approach, the authors had first selected and then grouped the articles into basic themes based on the concepts expressed or reported in the literature. This includes both what researchers were interested in and investigated in their studies (Table III).

## 4. Results

### 4.1 Chronological distribution

Table IV shows the year-wise distribution of papers across the time frame of this review, starting from 1998, the year in which Elkington had published a book in which he had proposed the TBL concept. This prompted the authors to consider the literature published since 1998. The last decade witnessed an increase in the number of papers published on the sustainability aspects of sourcing. Further, it was felt that this concept had started gaining popularity from 2008 onwards when firms were under pressure because of the global economic slowdown. This resulted in firms being under the stringent scrutiny of stakeholders who were also looking for additional competitive advantages (Kim *et al.*, 2016). These firms started to comply with environmental norms in their areas of operations. They advertised their environmental compliance, which gave them a competitive advantage and fetched them additional brand value. Moreover, in recent years, firms have tended to do business with sustainable suppliers and adhere to sustainable sourcing practices and demonstrate corporate social responsibility (CSR) as well (Busse *et al.*, 2016).

### 4.2 Distribution across journals

The papers reviewed were mainly from journals pertaining to operations and supply chain management (106 of 150 papers reviewed). Henceforth, the number of papers relating to a specific topic will be indicated in parentheses. This is because these journals aim at publishing the state of research in the area of supply chain management and give an idea of the research being performed. Because of the interdisciplinary nature of the topic, this review also came across papers from other area journals such as *Journal of Business Ethics*, *Clothing and Textiles Research Journal*, *Corporate Governance*, *Industrial Marketing Management* and *Industrial Relations Journal* (Table IV).

Variable	Value
Chronological distribution	Year of publication
Distribution across journals	Name of journal
Sustainability dimensions	Green, Social and TBL
Geographic scope	Country
Industry scope	Manufacturing (e.g. fashion and apparel, electronics and electrical, food and beverages, fastFMCG, fabricated metal products/ engineering/ machinery, chemicals, automobiles, wood and furniture, paper and printing); services (e.g. retail, 3PL/ transportation, health and well-being)
Methodology	Case method, survey/empirical study, analytical modeling/ mathematical modeling, conceptual, inductive theory building, literature survey, content analysis, Delphi study, snowballing technique, discrete event simulation, others, etc
What	Supplier management, portfolio management, vendor rating, specifications definition, contracting and licensing, supplier assessment system, buying sustainable products, codes of conduct, sustainable buying strategies, stakeholder collaboration, life cycle analysis, vertical and horizontal coordination, communication, reverse logistics
Why	Compliance with regulation, consumer demand, public image, cost management, stakeholder pressure, competitive advantage, risk management, market pressures, political agenda setting, personal commitment, trust building, government subsidies
How	Lean supply, local sourcing, global sourcing, multi-sourcing, supply base reduction, supplier relationship management, cooperative purchasing, batch sizing, training, supplier collaboration, role of the purchasing department, auditing, supplier certification, innovative product and/or process development, supplier monitoring, supplier commitment, support across organization and leadership, disclosure of organization's and suppliers' practices, collaboration with external organizations, rewards, special department, supplier diversity, e-purchasing, buying on total cost, pressure from focal firm, reducing supplier risk, carbon tax, postponement, buy back contract

**Table III.**  
Classification framework

#### 4.3 Triple bottom line dimensions

Sustainable sourcing may be defined as supply management with three dimensions, namely, economic, environmental and social. Out of the three dimensions of sustainability, this review assumes that economic factors are commonly present in all studies. Papers that are classified as *green* (49 of 150) take into account environmental factors in addition to economic factors; papers classified as *social* (16) consider social factors and those classified as *TBL* (85) simultaneously take into account all three factors. There is an imbalance in terms of attention paid to the three dimensions of sustainability. In addition to the traditional economic factors, the environmental dimension is gaining more attention as compared to the social dimension (Figure 1). This imbalance is probably caused by the additional attention paid by the governments in developed and developing countries to the environmental regulation compliance and imposing heavy penalty on non-compliance.

Social factors have not been studied as extensively as environmental factors. Moreover, most studies in the literature considering social practices have combined social factors in terms of ethical sourcing (Smith and Barrientos, 2005; Ehrgott *et al.*, 2011).

There are several studies that have simultaneously considered all three factors. The shift from individual factors to TBL occurred in the beginning of the year 2000 and started gaining popularity only after 2009. It can be attributed to an increase in global sourcing, particularly from emerging economies (Reuter *et al.*, 2010).



**Table IV.**  
Classification based  
on year and journal  
of publication

Journal	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
<i>International Journal of Production Economics</i>											2		3	2	7	2	3	6			25
<i>Journal of Business Ethics</i>						1		2		2		4	4	2	2	4	2	1	1	1	23
<i>International Journal of Physical Distribution and Logistics Management</i>	1						1	1		1	1		4		2	1	1	2	3		17
<i>Supply Chain Management: An International Journal</i>	1						1	1			6	1	1	1	1		1				11
<i>Journal of Supply Chain Management</i>		1									2	4	1	1							8
<i>International Journal of Operations and Production Management</i>				1									1					2	2		6
<i>Journal of Purchasing and Supply Management</i>													2	2							4
<i>Journal of Cleaner Production</i>										1							1	1	1		4
<i>International Journal of Production Research</i>											1		1	2	1	1		1	1		4
<i>European Journal of Operational Research</i>															1	1	3				4
<i>International Journal of Productivity and Performance Management</i>															2	2	1				3
<i>Industrial Marketing Management</i>																2	1				3
<i>Benchmarking: An International Journal</i>								1						1					1		3
<i>Transportation Research Part E Sustainable Development</i>	1															1					2
<i>Production Planning and Control: The Management of Operations</i>	1							1								2					2
<i>Journal of Operations Management</i>																	1				2
<i>Journal of Engineering and Technology Management</i>																1	1				2
<i>European Management Journal</i>					1												1				2
<i>The International Review of Retail, Distribution and Consumer Research</i>														1							1
<i>Supply Chain Management Review</i>											1										1

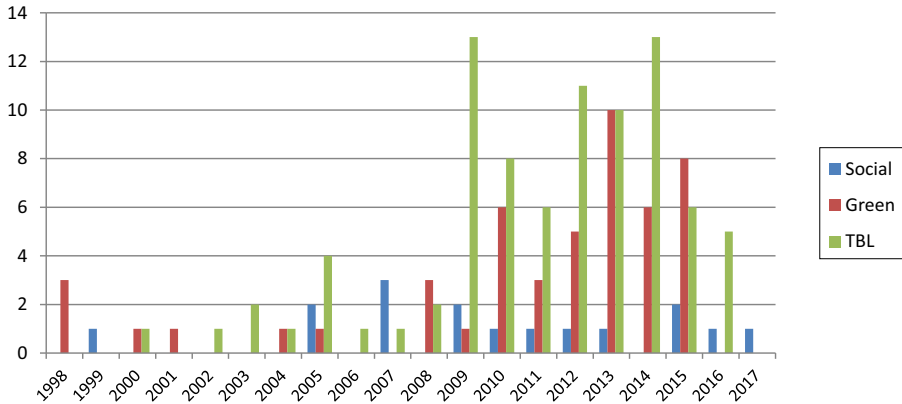
(continued)

Journal	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total	
<i>Strategic Outsourcing: An International Journal</i>										1											1	
<i>Management Decision</i>													1						1			1
<i>Management Convergence</i>														1								1
<i>Journal of Management Studies</i>								1														1
<i>Journal of Management Education</i>										1												1
<i>Journal of Macro marketing</i>													1									1
<i>Journal of Fashion Marketing and Management: An International Journal</i>																					1	1
<i>Journal of Business Logistics</i>							1															1
<i>International Journal of Sustainability in Higher Education</i>																1						1
<i>International Journal of Retail and Distribution Management</i>								1														1
<i>International Journal of Purchasing and Materials Management</i>	1																					1
<i>Industrial Relations Journal</i>											1											1
<i>Industrial Management and Data Systems</i>																1						1
<i>Industrial and Commercial Training</i>																					1	1
<i>Decision Support Systems</i>											1											1
<i>Corporate Governance</i>																	1					1
<i>Computers and Operations Research</i>																1						1
<i>Research</i>																						1
<i>Clothing and Textiles Research Journal</i>									1													1
<i>Business Strategy and the Environment</i>												1										1
<i>British Food Journal</i>																					1	1
<i>Baltic Journal of Management</i>	3	1	2	1	1	2	2	8	1	4	5	12	18	11	16	21	19	12	10	1		150
Total																						

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Table IV.

**Figure 1.**  
Dimensions of the study



#### 4.4 Geographic scope

The geographical scope is defined based on the unit of analysis, that is, where the actual study has been carried out rather than the countries where these researchers are based. The emphasis on sustainability is more in developed economies such as the USA, UK and Germany. Among all the 150 papers reviewed, the contribution of the USA and UK alone is 32.4 per cent. This can be attributed to the factors such as demanding stakeholders, government regulations, proactive practices followed by firms and strong academic research that are continuously trying for the betterment of the society. Research is also being increasingly performed in the developing countries such as China (8.6 per cent), Brazil (4.3 per cent) and India (2.1 per cent), which are becoming offshoring and sourcing hubs in the world. Approximately 14.4 per cent of these studies are conducted in multiple countries and are in line with the global sourcing practices followed by firms (Table V).

#### 4.5 Industrial scope

The literature indicates that the dynamic industries such as food and beverages (25 of 150 papers), fashion (include textiles, apparel and footwear and leather) (25) and electronics (17) are more concerned about sustainability in their supply management. This is because of the increasing consumer demand for sustainable products and pressure from other stakeholders of SSCM. These firms also look at sourcing as a tool for gaining a competitive advantage and adopting global sourcing strategies. A sustainable sourcing approach enforces firms to source carefully to avoid any negative impact on their brand. Increasing regulations related to sustainability in the traditional manufacturing sectors, such as fabricated metal products/engineering/machinery (22), chemicals (13), automobiles (13), wood and furniture (10) and paper and printing (5), also get reflected in these studies. Even, the sectors such as retail (20), 3PL/transportation (9), telecommunication, IT and ITES (7) and health and well-being (6), which are nonmanufacturing, are also including sustainability in their sourcing process. Fifty studies have focused on more than one industry and have attempted to obtain generic findings (Table VI).

#### 4.6 Methodologies used

Of the 150 articles studied, case studies based on both qualitative and quantitative analyses (52) and survey-based research (45) are the two predominant methods used in the studies

Industry/year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
USA	1	1	1	1			1	3	1		1	2	2	4	4	1	3		1		23
UK	1				1			1			1	4	4			5	3	1	2		22
China						1	1	1			1	1	2	1	2	1	1		1		12
Germany						1	1				1	1	1	1	1	2	2	1	1		10
Sweden	1								1			2	1	1	1	1	1	1	1		8
Italy												1	2	1	1	2	1		1		7
Brazil									2			1	2	1	1	1	1			1	6
Canada									1		1	1	1	1	1	1	1				4
The Netherlands										1		2	1			1					4
France							1	1				2	1		2	1	1				3
India												1	1		1	1	1	1			3
Norway											1	1	1			1	1				3
Taiwan												1	1			1	1				2
Australia											1	1									1
Belgium											1	1	1								1
Denmark											1	1									1
Finland											1	1									1
Hong Kong												1				1					1
Korea												1									1
Malaysia																		1			1
Portugal																	1				1
Spain																1					1
Sri Lanka																		1			1
Switzerland																	1				1
Thailand											1	1									1
Multiple						1						2	4	2	4	1	2		3		20

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**Table V.**  
Country-wise distribution of papers



related to sustainable sourcing. Analytical modeling/mathematical modeling (21) has also been gaining popularity over the past few years particularly for developing methods for supplier evaluation and selection, performance measurement of the system, carbon footprint tax, carbon trading, etc. In addition, there are some papers that have used methods such as content analysis (12) to understand supply management practices, CSR practices and code of conduct used by firms; Delphi studies (2) for getting insights from experts in the field; discrete event simulation and behavioral experiments (1) for integrating various business processes with operations management practices (Figure 2).

The classification above indicates that research is moving toward the validation/evaluation stage and is aiming at developing robust and generic models that have equal applicability across industries and locations (Teuteberg and Wittstruck, 2010).

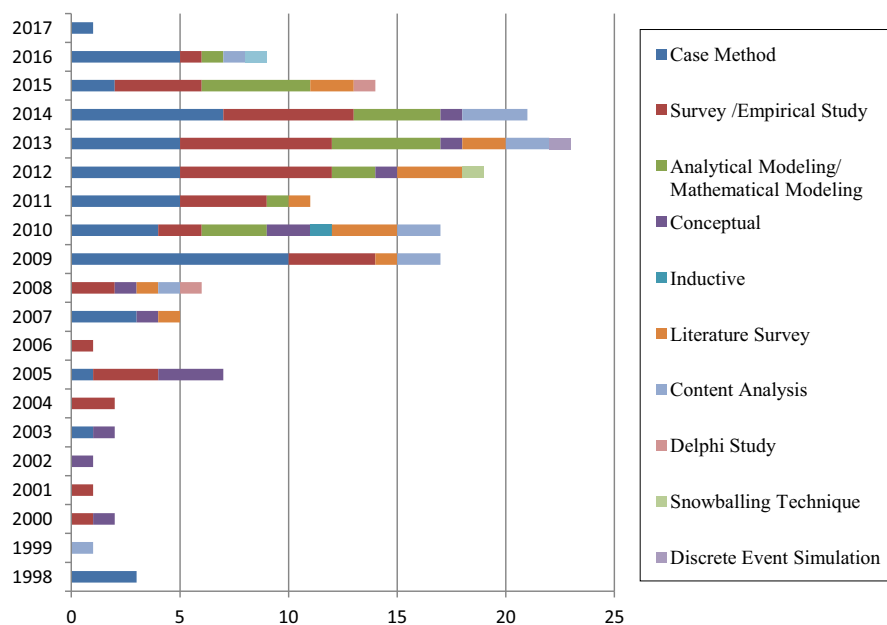
#### 4.7 The why: motivations and incentives for sustainable sourcing

The two major factors that make sustainable sourcing important are as follows:

- (1) Firms are considered responsible for their suppliers' activities which impact environmental and social aspects (Maignan *et al.*, 2002; Koplina *et al.*, 2007).
- (2) Suppliers' contribution to value creation has increased in the recent past (Koplina *et al.*, 2007).

Further, firms are increasingly looking into their suppliers' operations for achieving sustainability.

The findings of the literature survey suggest that there are various motives and incentives that encourage firms to adopt sustainability in the sourcing function. Firms are incorporating sustainability practices into their overall activity as a result of being continuously pushed by their customers, and other stakeholders, in compliance with the



**Figure 2.**  
Methodology-wise  
distribution of papers



ever-demanding environmental laws and ethical practices laid down by the governments and social groups. Consequently, these lead to firms gaining a competitive advantage and achieving better cost management, a better image in the minds of customers, improved risk management, competitor actions, etc. Other motives such as improved trust building, government subsidies and agenda setting in the market also motivate firms to adopt sustainability in their sourcing practices.

While considering the distribution of motives across industries, this study found that competitive advantage and compliance with regulations are motives in 95 per cent of industrial sectors followed by consumer demand and stakeholders' pressure (90 per cent), cost management (80 per cent), public image and risk management (70 per cent), market pressures (60 per cent), trust building (35 per cent), personal commitments of leaders and purchase professionals (30 per cent) and governmental support/subsidies (20 per cent) (Table VII).

The importance of individual motives varies across industries. In the food and beverage sector, 12 of 25 (48 per cent) studies have reported stakeholders' pressure as a motive followed by compliance with regulations (28 per cent), public image and competitive advantage (24 per cent) and consumer demand (20 per cent). In textiles and apparels, it is stakeholders' pressure (11 of 25 papers; 44 per cent) followed by compliance with regulations and consumer demand (40 per cent) and competitive advantages (36 per cent). In the electronics and electrical sector, however, it is compliance with regulations (10 of 17; 58 per cent studies) which is a main motive followed by stakeholders' pressure (42 per cent), competitive advantage (30 per cent), consumer demand, market pressure and risk management (18 per cent). In the fast-moving consumer goods (FMCG)/consumer goods industry, 4 of 12 (33 per cent) studies have consumer demand as a motive followed by compliance with regulations, public image and stakeholders' pressure (25 per cent), cost saving and competitive advantage (17 per cent). In the traditional manufacturing sectors such as fabricated metal products/engineering/machinery, 11 of 22 (50 per cent) studies have competitive advantage as a motive followed by stakeholders' pressure (32 per cent), compliance with regulations (27 per cent) and market pressures (23 per cent); in automobiles, compliance with regulations in 8 of 13 papers (62 per cent) is followed by cost management, competitive advantage and stakeholders' pressure (38 per cent) and consumer demand, public image, market pressure and risk management (23 per cent). In the nonmanufacturing sectors, such as retail, stakeholders' pressure (14 of 20 papers, 70 per cent) is a motive followed by compliance with regulations (30 per cent), consumer demand and competitive advantage (25 per cent); in 3PL/transportation, it is compliance with regulations, competitive advantage and stakeholders' pressure (4 of 9 papers; 44 per cent) followed by cost management and consumer demand (22 per cent).

In terms of motives of sustainable sourcing in geographic locations, compliance with regulations is a motive in 77 per cent of the countries from where the reported literature is. It is followed by competitive advantage (68 per cent); consumer demand (64 per cent); stakeholders' pressure (59 per cent); market pressure (50 per cent); cost management (45 per cent) and public image and risk management (36 per cent). The motive changes across countries as well. In the USA, 8 of 23 studies have reported motives of compliance with regulations; competitive advantage and consumer demand, followed by stakeholders' pressure (6), cost management and public image (3). In the UK, stakeholders' pressure is a motive in 9 of 22 studies followed by compliance with regulations, competitive advantage and public image (4), cost management (3). In China, it is stakeholders' pressure (6 of 12 papers) followed by compliance with regulations (5) and competitive advantage (4). In Germany, 8 of 10 studies have motives of compliance with regulations followed by

Motive/industry	3PL/ Transportation	Automobiles	Cement	Chemicals, Plastics, Fertilizers and Pharma	Construction, Home improvement	Electronics/ Electrical	Fabricated Metal Products/ Engineering/ Machinery	FMCG/ Consumer goods	Food and Beverages	Health and Wellbeing	Paper and Printing
Stakeholders' pressure	4	5	1	8	7	8	7	3	12	2	2
Compliance with regulation	4	8	1	6	3	10	6	3	7	2	1
Competitive advantage	4	5	2	3	3	5	11	2	6	1	1
Consumer demand	2	3		3	2	3	4	4	4	1	1
Cost management	2	5	1	2	1	2	2	2	2	2	
Public image		3		2	3	1	1	3	6		1
Risk management	1	3	1	3		3	2		1		1
Market pressures		3	1	1	2	3	5		2		1
Trust building					1	1			2		
Personal commitments		1							1		
Governmental support/subsidies		1							2		
Political agenda setting									1		

*(continued)*

**Table VII.**  
Motives – industry-wise distribution of papers

Practices of sustainable sourcing



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stakeholders' pressure and consumer demand (6). In Brazil, it is compliance with regulations and stakeholders' pressure (4 of 6 papers) (Table VIII).

#### 4.8 *The what: processes followed*

The literature suggests various processes used for attaining a sustainable form of sourcing. Most of these processes are simply modifications of the traditional processes used in sourcing including specification definition; supplier assessment systems; supplier management processes; and contracting and licensing. There are also additional processes such as sustainable buying strategies, processes related to communication, trust and culture, code of conduct, buying sustainable products, stakeholder collaboration/integration and life cycle assessment (LCA) and extended LCA, used for achieving sustainable sourcing.

The industry-wise distribution of studies shows that 95 per cent of the industrial sectors used supplier management processes, specification definitions and sustainable buying strategies followed by code of conduct and processes related to communication, trust and culture (90 per cent) for attaining sustainable sourcing. Supplier assessment system (85 per cent), contracting and licensing and buying sustainable products (75 per cent), stakeholder collaboration (70 per cent), portfolio management (60 per cent), vertical and horizontal coordination (55 per cent), life cycle analysis (50 per cent) and vendor rating processes (40 per cent) are also used across industries (Table IX).

Industries that rely on many suppliers used processes related to communication, trust and culture along with other processes for attaining sustainability objectives in purchasing: These industries include food and beverages (8 of 25 studies), electronics (7 of 17), fabricated metal products/engineering/machinery (6 of 22) studies, automobiles (7 of 13), petroleum/oil and gas (4 of 8) and 3PL/transportation (5 of 9). Other popular processes in these industries include buying policies/sustainable strategies, code of conduct and supplier assessment system. In industries that need fast changes in their product offering such as telecommunication, IT and ITES, 3 of 7 studies used specification definitions, whereas industries that have large global sourcing activities such as retail (9 of 20) and textile and apparels (13 of 25) used code of conduct along with other processes to gain sustainability objectives. In the sectors such as chemicals (8 of 13 papers), paper and printing (2 of 5) where the suppliers' role is more crucial in product delivery, supplier management processes are used along with other processes for sustainable sourcing.

In terms of location, 68 per cent of the countries reported in the literature carry out supplier management processes. Other processes including sustainable buying strategies (60 per cent), specifications definition, supplier assessment system, communication, trust and culture, code of conduct (56 per cent), vendor rating, buying sustainable products (44 per cent) and stakeholder collaboration (36 per cent) are also popular.

There is variation in terms of processes undertaken in different countries. In most of the developed nations such as the UK, 10 of 22 studies reported that code of conduct was used for attaining sustainability in sourcing. This was followed by sustainable buying strategies (8), contract licensing and execution (6). In the USA, 8 of 23 studies found that code of conduct was used followed by sustainable buying strategies (7), specification definition and processes related to communication, trust and culture (6). In developing countries (e.g. China), 4 of 12 studies reported the use of supplier management processes and supplier assessment systems for achieving sustainable sourcing (Table X).

#### 4.9 *The how: practices, methods and tools deployed*

The literature reports various methods by which firms can achieve their sustainability objectives. The most common practice for sustainable sourcing is through supplier

**Table VIII.**  
Motives – country-wise distribution of papers

Motive/country	Australia	Belgium	Brazil	Canada	China	France	Germany	India	Italy	Korea	Malaysia	The Netherlands	Norway
Compliance with regulation		1	4	2	5	2	8	1	4	1	1	1	1
Consumer demand		1	1	1		3	6	1	2	1		3	1
Public image					1		4			1			
Cost management	1				1	1	2	1	2				
Stakeholder pressure			4	2	6	3	6		1		1	2	
Competitive advantage		1			4	1	3	2	2	1	1	2	1
Risk management			2		2		2						
Market pressures			2	1	2		1		1		1	1	
Political agenda setting													
Personal commitment						1							
Trust building			1										
Government subsidies					1								

*(continued)*

Motive/country	Portugal	Spain	Sri Lanka	Sweden	Switzerland	Taiwan	Thailand	UK	USA	Multiple	Not-Specified	Total
Compliance with regulation				2		1	1	4	8	5	8	60
Consumer demand				2		1	1	1	8	3	4	39
Public image		1		1		1	4	4	3		4	20
Cost management	1			1			3	3	3		7	23
Stakeholder pressure				4	1		1	9	6	8	13	67
Competitive advantage			1	3		1	4	4	8	1	7	43
Risk management	1		1	3			1	1	1	1	3	17
Market pressures			1	1			2	2	1	3	3	20
Political agenda setting							1	1				2
Personal commitment				1			1	1		1		4
Trust building							2	2			3	6
Government subsidies												1

Practices of sustainable sourcing

Table VIII.



**Table IX.**  
Process – industry-  
wise distribution of  
papers

Process/industry	Fabricated										
	3PL/Transportation	Automobiles	Cement	Chemicals, Plastics Fertilizers and Pharma	Construction, Home improvement	Electronics/ Electricals	Metal Products/ Engineering/ Machinery	FMCG/ Consumer goods	Food and Beverages	Health and Well-being	Paper and Printing
Sustainable buying strategies	6	7	1	5	9	6	9	6	10	1	2
Communication	5	7		7	6	7	6	6	8	2	1
Specifications definition	4	5	1	4	4	6	7	6	9	2	2
Supplier management	2	5	1	8	4	4	7	5	6		2
Supplier assessment											
System	4	6		3	2	6	9	6	5	2	
Codes of conduct	3	3		6	4	2	4	4	8	3	1
Contracting and licensing		3		3	4	3	3	2	6	1	2
Buying sustainable products	2	3		1		3	6	2	1	1	
Vendor rating	1	3				2	4				
Stakeholder collaboration	1	2		2		1	1	1	3	1	
Portfolio management		1		1	1	2	1		2		1
Vertical and horizontal coordination	1	2		2	1	1	2	1	1	1	
Reverse logistics	1	2									
Life cycle analysis	1	1			1	1	2		1		

(continued)

Process/industry	Petroleum/Oil and Gas/Biodiesel	Power generation/Energy	Public sector	Retail	Services	Steel	Telecommunication, IT and ITES	Textiles, Apparel and Footwear and Leather	Wood and Furniture	Not Specified	Total
Sustainable buying strategies	4		3	4	4	1	4	7	5	19	112
Communication	4		3	4	3	1	2	10	4	13	99
Specifications definition	3	1		6	3	2	3	8	5	16	97
Supplier management	1	1	1	6	1	1	2	8	4	16	84
Supplier assessment system	2	1	1	8	2	1		7	4	15	84
Codes of conduct	1	1	4	9	4		2	13	3	7	81
Contracting and licensing			2	4	1		2	3	4	4	44
Buying sustainable products	2		1	3	1	1		3	1	6	34
Vendor rating	1			4		1		3		7	26
Stakeholder collaboration		1	1	2	1			4	2	3	23
Portfolio management				1	1		1	1	1	2	14
Vertical and horizontal coordination				1				1	1	3	14
Reverse logistics				1	1			1		1	6
Life cycle analysis	1		1	1	1		5			1	5

Practices of  
sustainable  
sourcing

Table IX.

**Table X.**  
Process – country-  
wise distribution of  
papers

Process/country	Australia	Belgium	Brazil	Canada	China	France	Germany	Hong Kong	India	Italy	Korea	Malaysia	The Netherlands
Sustainable buying strategies	1	3	3	1	1		4		2	3	1	1	3
Specifications definition							4	1	3	4	1	1	1
Supplier assessment system	1			2	4	1	5			4		1	2
Supplier management		1	1	2	4	2	3		3	2			2
Communication		1	4	2	3	1	3			4	1		2
Codes of conduct			1	1	2	1	3				1		
Vendor rating		1					2		1	1		1	1
Buying sustainable products				2	1	1			1	1		1	1
Contracting and licensing			1		2		1			1			
Stakeholder collaboration			1	1	2		1					1	
Vertical and horizontal coordination							1						1
Portfolio management					1		1						
Reverse logistics													1
Life cycle analysis						1							

(continued)

Process/country	Norway	Portugal	Spain	Sri Lanka	Sweden	Switzerland	Taiwan	Thailand	UK	USA	Multiple	Not Specified	Total
Sustainable buying strategies	2	1			2		2		8	7	4	15	60
Specifications definition	2				4	1			5	6	6	16	59
Supplier assessment system	2	1	1		4				4	5	9	12	58
Supplier management	2	1		1	1	1		1	2	5	6	13	53
Communication	2				3			1	5	6	5	9	52
Codes of conduct	1		1	1	4	1		1	10	8	3	4	43
Vendor rating	1				1				2	3	4	5	24
Buying sustainable products	1				1				1	4	3	6	24
Contracting and licensing					3				6	2	1	4	21
Stakeholder collaboration	1				3				3	2	1	4	20
Vertical and horizontal coordination		1			1				1	1	1	3	9
Portfolio management				1			1		1	1		1	7
Reverse logistics	1	1			1				2			1	7
Life cycle analysis	1								1		2	1	6

Practices of sustainable sourcing

Table X.

relationship management wherein the buying firms work closely with suppliers after deciding on the products to be manufactured, processes to be followed, changes needed to be made in the present system or on deciding on objectives or goals. Supplier collaboration was reported in 62 articles. It entails supplier development, supplier involvement or supplier association and is the second most common practice for achieving sustainability in sourcing followed by supplier certification, training and education of suppliers and innovation/product and process development. Research findings also show that the methods such as supplier monitoring, auditing, support of top management and others in the firms, collaboration with other firms, suppliers' risk reduction and role/performance of the purchasing department, can be effective in attaining the sustainability objectives of sourcing.

Other sourcing tools such as local sourcing, lean supply, e-purchasing, batch sizing, multi-sourcing, global sourcing and buy back contract can also be effective for achieving sustainability. Innovative methods such as disclosure of organization and suppliers' practices; adding special department/specialists; rewarding suppliers and employees; supplier diversity including buying from minority suppliers, women, self-help groups, socially deprived people and reducing supply base can be used for sustainable sourcing.

Supplier relationship management is found to be equally popular across industries (100 per cent) that use it as a tool. It is popularly used in the following industries along with other tools: 3PL/transportation (5 of 9 studies), chemicals (9 of 13), fabricated metal products/engineering/machinery (18 of 22), FMCG (6 of 12), electronics and electrical (7 of 17), food and beverages (13 of 25), paper and printing (4 of 5), petroleum/oil and gas (7 of 8), retail (9 of 20), wood and furniture (6 of 10), etc. Other prevalent tools are supplier collaboration (95 per cent of sectors) used in retail (9 of 20), textile and apparels (11 of 25); collaboration with external organizations (95 per cent of sectors) used in automobile (4 of 13), retail (8 of 20); training (90 per cent of sectors) used in textile and apparels (6 of 25), food and beverages (5 of 25); local sourcing, supplier certification, supplier monitoring and innovation/product and process development (85 per cent of sectors) are also used for sustainable sourcing (Table XI).

In the distribution of tools across geographic locations, 72 per cent of the countries surveyed were found to use supplier relationship management and training as tools for sustainable sourcing followed by supplier collaboration (68 per cent), auditing (64 per cent), supplier certification and supplier monitoring (60 per cent), innovation/product and process development and support across the organization and leadership (56 per cent) and collaboration with external organizations (52 per cent), etc. (Table XII).

## 5. Discussion

The survey of literature shows that research interest and firm priorities match in all the major areas of sustainable sourcing. There is a continuous effort in conducting extensive research on sustainable sourcing and supply management. This is backed up by studies performed in the past decade and published in different journals on operations and related disciplines. Most of these research studies are conducted in developed countries. Further, there is an increasing number of studies performed in developing countries particularly in the recent past, which are becoming the potential sourcing and offshoring hubs of the developed world. Moreover, these countries are also adopting the best practices similar to that of developed nations. Both manufacturing and service sectors are taken as a context in these studies. The focus of these studies has later shifted to the dynamic industries such as food and beverages, apparel and electronics because the role of the supplier in these industries is critical in achieving the growing sustainability needs and also their share in the

Practice/industry	3PL/ Transportation	Automobiles	Cement	Chemicals, Plastics, Fertilizers and Pharma	Construction, Home improvement	Electronics/ Electrical	Fabricated Metal Products/ Engineering/ Machinery	FMCG/ Consumer goods	Food and Beverages	Health and Well-being	Paper and Printing
Supplier relationship management	5	7	1	9	5	7	18	6	13	2	4
Supplier collaboration	3	6	1	6	4	5	11	2	11		3
Supplier certification	5	8	1	4	4	7	9	3	7		2
Supplier monitoring	2	3		4	4	1	7	5	6	1	
Innovative product and/or process development	1	4		5	3	7	6	2	5		3
Training	2	2		3	4	3	5	4	5	2	2
Auditing	3	1		4	3	5	5	1	7		2
Support across organization and leadership	4	6		4		5	6	2	5	4	
Collaboration with external organizations	2	4	1	3	1	4	1	4	4	1	
Local sourcing		1		1	2	2	1	2	4	2	
Reducing supplier risk		2		3	2	2	4	1	2		2
Role of the purchasing department	2	2		2		2	2	2	3	3	
Rewards	2	2		1	2	1	4	1	4	1	
Disclosure of organization's and suppliers' practices	1	2		2	2	1	1	1	1	1	
Special department		3		1	2	1	2	1	2		1
Supply base reduction	1			1	1	1	4	1	3		1
Supplier commitment				2	1	1	1	1	2		2
Buying on total cost	2			2	1	2	1	1	2		1
Cooperative purchasing		1		1	1	1	1	1	1	1	
Supplier diversity				1	1			1			
Lean supply		1					1		1		
Multi-sourcing		1									
Batch sizing						1					
Pressure from focal firm		1		1		1		1			
Buy back contract	1						1		1		
Global sourcing		1					1				
e-Purchasing										1	
Postponement	1										
Carbon tax									1		

*(continued)*

**Table XI.**  
Practices – industry-wise distribution of papers

Practices of sustainable sourcing





Practice/country	Australia	Belgium	Brazil	Canada	China	France	Germany	Hong Kong	India	Italy	Korea	Malaysia	The Netherlands
Supplier relationship management	1		4	3	6	2	5		2	5	1	1	
Supplier collaboration			3	3	5	1	5		2	2		1	
Supplier monitoring		1		1	4	1	5		1	4		1	2
Training	1	1	3		3		3		1	1	1	1	1
Supplier certification		1		1	5	2	5		2	5	1	1	3
Auditing		1	2		3	1	4		1	2	1	1	1
Innovative product and/or process development		1	1	2	3	2	3			1		1	1
Support across organization and leadership			2	1	5	1	3			2		1	1
Collaboration with external organizations			2	1	3	1	2		2	1	1		
Local sourcing				1		1	1	1		1			
Disclosure of organization's and suppliers' practices			1				1			1			2
Reducing supplier risk			1		1		1					1	
Role of the purchasing department			1				1			1			
Special department			1				2						
Supplier diversity													
Rewards	1			1						1			
Supply base reduction				1	1								
Lean supply	1					1							
Multi-sourcing							1	1					
Batch sizing													
Supplier commitment													
Global sourcing						1							
Cooperative purchasing							1						
e-purchasing													
Buying on total cost													
Postponement													
Pressure from focal firm			1				1						
Carbon tax			1										
Buy Back contract													

*(continued)*

Practices of sustainable sourcing

**Table XII.**  
Practices –  
countrywise  
distribution of  
papers

Table XII.

Practice/country	Norway	Portugal	Spain	Sri Lanka	Sweden	Switzerland	Taiwan	Thailand	UK	USA	Multiple	Not-Specified	Total
Supplier relationship management	2	1	1	1	3		1		8	10	10	17	84
Supplier collaboration	1	1	1	1	2	1	2		6	9	8	12	66
Supplier monitoring	2	1	1		6			1	5	8	8	9	60
Training	2	1	1	1	5		1	1	5	6	7	9	54
Supplier certification	2	1			4				2	7	4	8	53
Auditing	1		1	1	3			1	5	8	7	7	50
Innovative product and/or process development	1				1		1		5	8	3	8	42
Support across organization and leadership				1	1		1	2	3	6	3	4	37
Collaboration with external organizations	1				2		1		5	4	3	3	32
Local sourcing	1				1				7	2	4	4	24
Disclosure of organization's and suppliers' practices					1				1	4	1	3	15
Reducing supplier risk													
Role of the purchasing department		1		1			1		2	1	5	2	15
Special department									2	5	1	1	13
Supplier diversity				1	1				2	3	2	1	12
Rewards					1				3	1	1	3	10
Supply base reduction									1	1	2	2	8
Lean supply	1				1				1	1	2	1	7
Multi-sourcing									2		1	1	6
Batch sizing									1			3	6
Supplier commitment					1				1	2	2	5	6
Global sourcing					1				1		1	1	6
Cooperative purchasing									3		1	1	5
e-purchasing					1				1			2	4
Buying on total cost					1				1	2		1	4
Postponement									2			1	3
Pressure from focal firm												1	2
Carbon tax													2
Buy Back contract	1								1			1	2

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value chain is increasing. Moreover, these industries are also facing an increasing demand of sustainable products from their customers and other stakeholders. Many studies are conducted in multiple industries and countries for establishing the generality of findings. These studies use various methodologies; however, they are mostly performed using case studies or survey-based methods.

Studies considering the TBL factors are increasing in number due to increase in the global sourcing activities for meeting customer requirements. These organizations are constantly under stringent scrutiny of different stakeholders, with respect to their sourcing activities. They face a higher risk in issues related to the TBL factors such as local people's rights, child labor, deforestation, rapid climate changes, ecological conservation and regulation and implementation of intellectual property rights.

However, there is more focus on the literature related to environmental factors than on the literature related to social factors. The focus on environmental factors is in line with the increased focus of stakeholders on green practices.

Firms adopt sustainability in their sourcing practices as a result of stakeholders' pressures and compliance factors, yet other motives such as cost reduction and image building also compel firms to adopt sustainable sourcing. Initially, sustainable sourcing practices were adopted as a reaction to the government policies and market pressures. However since the past decade, the firms have been proactively adopting sustainability in their sourcing activities so as to get a competitive advantage. The motives for adopting sustainable sourcing vary across industry and geographic locations. These variations are due to differences in involvement of suppliers in the value chain, suppliers' role in competitive strategy, rules, regulations and norms prevailing in industry/country, and stakeholders' awareness, expectations and involvement.

Sustainable sourcing is done through various processes such as supplier management, developing newer specifications and evaluation methods for supplier selection and designing sustainable buying policies and strategies. Trust building, communication, restricting purchase only to sustainable products and from sustainable suppliers, code of conduct, stakeholder collaboration, etc., can also be useful in achieving sustainable sourcing. The initial studies were focused on buyer-centric processes. This focus has shifted to collaborative processes that involve suppliers. There is a variation in the processes followed by industries based on the number of suppliers, role played by suppliers in product delivery, etc. Processes also change based on the developmental stages of countries.

These processes are implemented mainly through supplier relationship management, supplier collaboration, new product and process development, supplier monitoring, auditing and inspections. These tools are equally popular across industries and geographic locations. Other sourcing levers such as single sourcing, e-purchasing, buying on total cost and reducing suppliers' risk are also used for attaining sustainable sourcing. There has been an increase in the collaborative practices that involve suppliers and other external organizations, training and development activities, transparency and support from and within organizations in the recent time.

This study suggests that the research in sustainable sourcing is multileveled and involves various functional departments in a firm. It is diverse and fragmented and is more concentrated on certain geographic areas, industries and methodologies. The complexity arising from these factors can be addressed through, within and across organizational support by developing a more robust and holistic framework for attaining sustainable sourcing. Such frameworks need strong theoretical backing.

These frameworks (models) should provide answers to the questions raised by Whetten (1989) in his seminal work, "What contributes a theoretical contribution?", namely, what's

new; so what; why so; well done; done well?; why now?; who cares?, related to sustainable sourcing.

To meet the requirement for robust and holistic models (why now?), future studies should propose a composite method for monitoring and controlling the sustainability aspects of supply management (what's new). This will help address the cause and effect relationship between the TBL factors and performance indicators to be used for judging the success of sustainable sourcing from the buyers' and suppliers' perspectives (so what). These models should consider all three aspects related to sustainable sourcing. They should consider motives for adopting sustainability by buyers and suppliers, processes to be used for attaining motives and tools to be used (why so).

## 6. Framework for future research

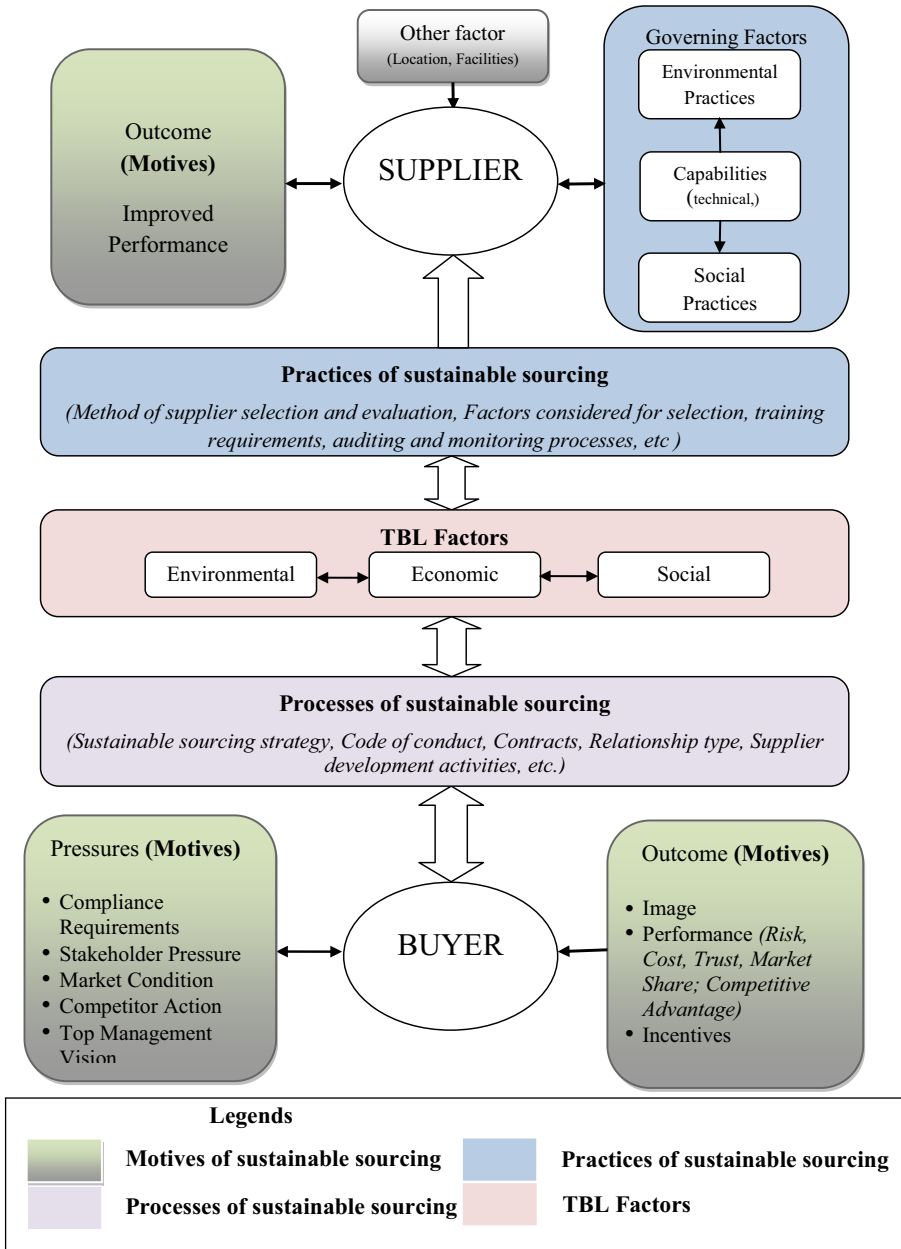
This study proposes a framework that follows Whetten (1989) (Figure 3). This framework can be used for assessing the impact of changes in the TBL policy, suppliers' capabilities, suppliers' policies and practices, buyers' sourcing strategy, its business environment, stakeholders' expectations, target performance level, any changes in government policies and suppliers' evaluation and selection strategies used. These changes need to be dynamically assessed. The complexity of this framework may increase because of the dynamic nature and interrelationships between the various agents (organizations) involved. This type of complex and dynamic framework can be implemented using the methods like the agent-based modeling or system dynamics (Ambekar *et al.*, 2015).

The proposed framework consists of the buyer and the supplier as two entities (agents) and interaction between them through processes of sustainable sourcing (sustainable sourcing strategy), sustainability factors and practices followed for sustainable sourcing (supplier evaluation and selection methods).

### 6.1 Buyers

Buyers can be manufacturers or retailers. They buy raw materials, semi-finished products, finished products or services for attaining their business objectives:

- The buyer's decision on sustainable sourcing is based on the motives such as pressure from stakeholders (Schneider *et al.*, 2014; Meehan and Bryde, 2015; Wan Ahmad *et al.*, 2016), compliance requirements (Neumüller *et al.*, 2016; Hsu *et al.*, 2016; Turker and Altuntas, 2014) and some other motives. In the changing market conditions, buyers are required to comply with certain regulatory and discretionary standards in terms of products and processes. Further, stakeholders also compel them to adopt sustainability practices. Sometimes, market conditions (Schneider *et al.*, 2014; Perry *et al.*, 2015), competitor actions (Meehan and Bryde, 2015; Thomas *et al.*, 2016; Hsu *et al.*, 2016), vision of the top management (Wright, 2016; Enarsson, 1998), etc., also push buyers to adopt sustainability. The motives to adopt sustainable sourcing would vary from industry to industry and also change based on the geographic location of buyers.
- This affects the performance and image of the buyer. It may help buyers to gain a competitive advantage (Thomas *et al.*, 2016; Markley and Davis, 2007; Liotta *et al.*, 2015), a better image in the society (Ghosh and Shah, 2012; Meinschmidt *et al.*, 2016), particularly among customers and suppliers and reduce the cost of supplies by reducing wastage and scrap (Perotti *et al.*, 2012; Andriolo *et al.*, 2015; Mann *et al.*, 2014). This may lead to increased market share (Dabhilkar *et al.*, 2016; Aragão *et al.*, 2017; Formentini and Taticchi, 2016), risk reduction in supplies (Aragão *et al.*, 2017;



Practices of sustainable sourcing



**Figure 3.**  
Proposed framework



Govindan *et al.*, 2014; Frostenson and Prenkert, 2015), improved trust (Zorzini *et al.*, 2015; Winter and Knemeyer, 2013) and attracts benefits given by the government and other NGOs.

- In some cases, the outcome in terms of performance and image also motivates buyers to follow certain sustainability practices in their business processes.
- The decision of adopting sustainability in processes pushes firms to develop a suitable sustainable sourcing strategy given the importance of suppliers in attaining sustainability goals.

### 6.2 Suppliers

Suppliers are manufacturers, traders or service providers. Their firms supply products and services to buyers across the world:

- When buyers adopt sustainability, suppliers' performance will be governed by their order-winning capabilities in these changing conditions.
- Order-winning capabilities are dependent on sustainable sourcing practices followed by the buyers such as supplier evaluation and selection methods (Thomas *et al.*, 2016; Strand, 2009; Busse *et al.*, 2016), environmental and social practices followed by suppliers (Høgevold *et al.*, 2014) and other factors including location, infrastructure facilities, membership of clusters and cooperation with other organization.
- Order-winning capabilities are governed by suppliers' internal capabilities such as technical, human and financial capabilities and their willingness to adopt environmental and social practices in their operations (Paulraj, 2011).
- If suppliers enhance their sustainability capabilities, it just not only improves their order-winning capabilities but also provides them with a competitive advantage, which may eventually lead to an improved performance (Reuter *et al.*, 2010).

The performance outcomes sometimes also motivate suppliers to develop their capabilities and follow certain practices that lead to sustainability.

### 6.3 Processes of sustainable sourcing

Processes of sustainable sourcing should decide suitable sourcing strategies. Such strategies should also consider the sustainable objectives of buyers. It specifies means by which buyers can achieve sustainable sourcing. It will be in the form a combination of processes as suggested in the previous section such as code of conduct (Morali and Searcy, 2013; Henninger *et al.*, 2016; Meinschmidt *et al.*, 2016), type of contracts to be used for sourcing (Formentini and Taticchi, 2016; Beske, 2012), relationships to be maintained with suppliers (Perotti *et al.*, 2012; Høgevold *et al.*, 2014; Perry *et al.*, 2015) and supplier development activities (Mamic, 2005; Formentini and Taticchi, 2016; Liotta *et al.*, 2015), internal changes to be made in the sourcing/purchasing function (Wong *et al.*, 2015; Hovelaque and Bironneau, 2015), possible development of new processes and products (Chen *et al.*, 2015; Dabhilkar *et al.*, 2016), types of suppliers and products to be selected, portfolio of products and suppliers, etc. A suitable sourcing strategy would be based on the industry and geographic location of the buyer and should provide details about practices of sustainable sourcing such as the specifications to be used for supplier selection (Thomas *et al.*, 2016; Høgevold *et al.*, 2014), supplier assessment systems to be used (Brindley and Oxborrow,

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2013; Frostenson and Prenkert, 2015), ranking methods for suppliers (Hsu *et al.*, 2016; Gualandris *et al.*, 2014), possible collaborations to be made (Thomas *et al.*, 2016; Turker and Altuntas, 2014; Chen *et al.*, 2015), etc.

#### 6.4 Triple bottom line factors

Based on the sustainability objectives and processes of sustainable sourcing, the buyer decides about various elements of TBL. Buyers specify the different factors to be included for assessing their suppliers in terms of three sustainability factors. These factors also get influenced by the practices of sustainable sourcing such as supplier evaluation and selection methods used and other environmental factors in which buyers/suppliers work. It will include both qualitative and quantitative factors that will be used for the assessment of suppliers. Thus, the TBL factors act as a bridge between the processes and practices of sustainable sourcing at equilibrium.

#### 6.5 Practices of sustainable sourcing

Based on the various elements of sustainability factors, buyers develop their practices of sustainable sourcing for supplier evaluation and selection method. The selection method specifies various factors for supplier evaluation to grade them relatively. The selected method also provides guidelines for measuring the different parameters of supplier evaluation and selection method (Andriolo *et al.*, 2015; Brindley and Oxborough, 2013), training requirements (Beske, 2012; Meehan and Bryde, 2015; Wan Ahmad *et al.*, 2016), auditing and monitoring processes to be used (Meehan and Bryde, 2015; Dabhilkar *et al.*, 2016; Wright, 2016), certification requirements (Gugler and Shi, 2009; Ingenbleek and Reinders, 2013; Busse *et al.*, 2016), rewards and penalties for non-compliance (Meehan and Bryde, 2015; Turker and Altuntas, 2014; Formentini and Taticchi, 2016), product costing, role and functions to be performed by the purchasing department (Wan Ahmad *et al.*, 2016; Walker *et al.*, 2009; Goebel *et al.*, 2012), etc. The evaluation method ranges from simple ranking methods to complex methods that use combinations of different evaluation tools.

The proposed framework can act as a bridge between theory building and theory testing for a holistic model that can help to balance the buyers' requirements and suppliers' capabilities. This framework should be able to provide a fit between the buyer and the supplier by matching practices and processes followed by the buyers and order-winning capabilities of the suppliers. Both buyers and suppliers take various initiatives for improving their sustainability performance. But for the effectiveness of these initiatives to improve the overall supply chain performance, it is necessary to check their fit.

The logical next step in this direction would be to design scales for measuring motives, practices and processes holistically from the end of buyers and suppliers. These scales can be verified and validated by considering the opinions of buyers and suppliers across industry and geography. These scales should be developed in the manner so that they can be used effectively for multiple methods of research. The proposed framework along with the developed scale can be a starting point for the research using methods such as system dynamics, experimental studies and mixed methods that are not so popular in the extant literature (Figure 2).

The future research in the area of sustainable sourcing is expected to be moving from the focus on compliance-related factors to outcome-related factors. This shift is due to the large-scale initiatives adopted by the supply networks across the globe. These initiatives are the outcome of increasing awareness of sustainability among the masses and proactive approaches followed by the firms for smooth coordination in the supply network. Further, these firms will adopt processes and practices that can help in

controlling and coordinating the global multi-echelon network of suppliers. Consequently, the future research should be focusing on portfolio management, vertical and horizontal coordination, stakeholder collaboration, reverse logistics, vendor rating systems and the like. This shift is likely to change the practices followed for sustainable sourcing in the direction of e-purchasing, carbon tax, supplier diversity, supplier commitment, supplier development through training and rewards systems. This shift of practices would help in ensuring better supplier relationship management to realize the fit between buyers and suppliers.

## 7. Conclusion

This study provides a comprehensive review of the literature related to sustainable sourcing. It defines the concept of sustainable sourcing and provides an analysis of the published research work on various dimensions including the country of study, industries where studies were carried out, methodologies used, motives and pressures for sustainable sourcing, processes used for attaining sustainable sourcing and tools, methods and practices used for achieving sustainable sourcing. This analysis takes the present review available in the literature forward and answers the questions on why, what and how related to sustainable sourcing.

This study can be helpful to both researchers and practicing managers. It provides a snapshot of the work done on sustainable sourcing, which can be used as a base for research addressing specific aspects of sustainable sourcing or for building strategies related to sustainable sourcing.

This study has developed a sourcing sustainability framework to provide a composite method for monitoring and controlling the sustainability aspects of supply management. The sustainability framework is based on the comprehension of the reviewed literature, with due consideration of not only suppliers' and buyers' views but also the importance of suppliers' adoptability of the proposed framework. This framework addresses the cause and effect relationship between the TBL factors and performance of both buyers and suppliers.

This study can be extended by building a holistic sustainable sourcing model using a system dynamic or agent-based simulation model. The proposed framework may also be tested for understanding whether the actual sustainable sourcing process is the same as proposed by the present study. This does indicate a need for a substantial empirical work through a large-scale survey or a case study. The future extension of this review may involve in-depth analyses of specific aspects. These aspects may include industry, country, theory, methodology or journal-specific reviews, reviews specifically addressing a particular aspect of sourcing like supplier selection or sourcing strategies. It would be interesting to highlight the interplay among motives, processes and practices.

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