



## Review

# Evolution of sustainability in supply chain management: A literature review



A. Rajeev<sup>a</sup>, Rupesh K. Pati<sup>a</sup>, Sidhartha S. Padhi<sup>a</sup>, Kannan Govindan<sup>b,\*</sup>,<sup>1</sup>

<sup>a</sup> Quantitative Methods and Operations Management Group, Indian Institute of Management Kozhikode, IIM Kozhikode, Kerala, 673570, India

<sup>b</sup> Center for Sustainable Supply Chain Engineering, Department of Technology and Innovation, University of Southern Denmark, Odense M, 5230, Denmark

## ARTICLE INFO

*Article history:*

Received 27 October 2016

Received in revised form

20 March 2017

Accepted 6 May 2017

Available online 19 May 2017

Handling Editor: Cecilia Maria Villas Bôas de Almeida

*Keywords:*

Literature review

Sustainable supply chain management

Sustainable operations

Sustainability

Green supply chain management

Thematic analysis

## ABSTRACT

An ever-increasing demand for products and their consumption has put pressure on industrial output and their supply chains, and that demand has resulted in negative impacts on the environment and society. Increasing rates of pollution and environmental calamities caused by industrial production have urged several researchers and industry experts to work on Sustainable Production and Consumption issues within the context of Sustainable Supply Chain Management (SSCM). This paper comprehensively covers the exponential growth of the topic through an evolutionary lens. This article attempts to understand the evolution of sustainability issues by analysing trends across industries, economies, and through the use of various methodologies. A comprehensive thematic analysis was performed on 1068 filtered articles from 2000 to 2015, highlighting the development and importance of the body of knowledge. The study proposes a conceptual framework to classify various factors along the triple bottom line pillars of sustainability issues in the context of supply chains. An in-depth study is conducted on 190 articles covering all pillars of sustainability (as per the proposed conceptual framework) on SSCM. We observe that studies focusing on all three dimensions of sustainability are comparatively scarce. More focus on industry-specific studies is required because problems addressing industries that are serious polluters, especially those in emerging economies, remains largely unaddressed. It is observed that the studies addressing social issues are scarce, and more focus is required on the measurement of social impacts along the supply chain. Finally, we propose future avenues to extend research on the SSCM domain while keeping in mind the need to address industry specific and economy specific problems from the triple bottom line perspective.

© 2017 Published by Elsevier Ltd.

## Contents

1. Introduction .....	300
2. Methodology .....	301
3. Reviews conducted over 2000–2015 for understanding evolution of SSCM .....	301
4. Classification and analysis .....	304
4.1. Time analysis of the evolution of SSCM literature .....	305
4.1.1. SSCM specific studies .....	305
4.2. Contribution towards literature from various journals .....	306
4.3. Methodological classification of evolution of SSCM literature .....	306
4.3.1. SSCM specific studies .....	307
4.4. Industry-based classification of research .....	308
4.4.1. SSCM specific studies .....	309
4.5. Issue-based classification of literature .....	309

\* Corresponding author.

E-mail address: [kgov@iti.sdu.dk](mailto:kgov@iti.sdu.dk) (K. Govindan).

<sup>1</sup> The paper is equally contributed and the authors' order is based on the requirement of the first author's PhD program.

4.5.1. SSCM specific studies .....	310
5. Summary and conclusion .....	310
Supplementary data .....	313
References .....	313
Websites .....	314

## 1. Introduction

With growing market demand for various products in the latter half of the 20th century, many organizations ventured into risky but frugally profitable modes of production. However, these actions often compromised long-term impacts both on society and the environment. The world has faced some disastrous industrial accidents: the largest oil spill from an Amoco Cadiz oil tanker March 16, 1978 (in France), the largest chemical plant accident, better known as the Bhopal Gas tragedy on December 2, 1984 (in India), the Chernobyl nuclear disaster on April 26, 1986 (in Ukraine), and the Exxon Valdez Oil Spill on March 24, 1989 (in the US). Accidents such as these have forced stakeholders, including regulatory authorities, manufacturers, customers, and the public, to reconsider economic business models and to question the implications of business practices on society and environment.

The need for changes in industrial practice and consumption patterns for sustainability was the focus of the *Brundtland Report*, published in 1987 by the World Commission on Environment and Development (WCED), under the Kyoto protocol (Dehghanian and Mansour, 2009). The WCED defines Sustainable Development (SD) as “[a] development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Since then, interest in sustainability related studies in various business disciplines has grown steadily. Sustainable Consumption and Production (SCP) practices, together with the management of natural resources and poverty eradication, form the three pillars of sustainable development emphasizing social, economic, and environmental studies: the Triple Bottom Line (TBL) (Joyce and Paquin, 2016).

Since the late 1990s, a marked increase in sustainability concerned articles (or reports) has occurred. Initial studies focused on how Operational Research tools can play an important role in visualizing and solving environmental problems. From early 2000s, Sustainable operations management developed as an area that integrates environmental and social issues along with economic aspects of supply chains into a common framework (Seuring and Müller, 2008). Hence, this field of study has attracted researchers as well as practitioners to study various aspects of sustainability over the past 25 years. The main drivers for this transition were the rapid pace of production and consumption aided by advanced technologies, and the increased exploitation and pollution of natural resources for economic development (with hindsight provided by the various industrial disasters). Over recent years, because society has evolved in developed countries, more stringent laws to protect the environment have been implemented, laws that mandate binding environmental legislation. Further, customers have imposed pressures on regulators and the entities involved in the business (Hall, 2000). Sustainable or green management initiatives have been adopted to reduce costs and to increase efficiency, internal and external customer satisfaction, and market shares and sales, resulting in more effective risk management (Bansal and Roth, 2000; Lintukangas et al., 2016). Some organizations still have reservations on the net benefit from the above-mentioned sources as compared to the investment required to

adopt sustainable production and consumption practices.

The stringent environmental and social laws in developed countries have led some companies to choose to outsource the polluting segments of their business to other economies (both emerging and underdeveloped), where laws are not in place or are not properly implemented (Liu et al., 2007; Dasgupta et al., 2002). These emerging and underdeveloped economies need external sources of funding/technology to provide growth to their economy. Often the emerging nations tend to compromise their social and environmental standards for economic growth (Meyer, 2004). This practice negates the “green initiatives” taken by companies and the net environmental and social impact on the globe may have shifted location, but it remains unchanged.

This awareness led to the evolution of Green Supply Chain Management (GrSCM) to evaluate environmental impacts on efficient supply chain operations. Srivastava (2007) defines (GrSCM) as “integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life.” GrSCM generally focuses on environmental and economic aspects of operations and fails to address social concerns, which is one of the major objectives of Sustainable Development (Dehghanian and Mansour, 2009). This progression has led to the emergence of “Sustainable Supply Chain Management (SSCM)” as a dominant research domain from 2010 onwards. SSCM is defined as “The creation of coordinated supply chains through the voluntary integration of economic, environmental, and social considerations with key inter-organizational business systems designed to efficiently and effectively manage the material, information, and capital flows associated with the procurement, production, and distribution of products or services in order to meet stakeholder requirements and improve the profitability, competitiveness, and resilience of the organization over the short- and long-term” (Ahi and Searcy, 2013). Global companies such as IBM, Hewlett-Packard, and Xerox have rapidly integrated the perspective of sustainability into their supply chains by taking the necessary environmental steps including design of reusable products (Sheu et al., 2005).

The Economist Intelligence Unit (EIU) warns that even if global warming is held at plus 2 *degree Celsius* by 2100, private investors may lose 4.2 trillion USD on the value of their holdings from the impact of climate change (The Guardian, 2015). The impact on business due to climate change and social disparity is extremely serious and will significantly impact the economic sustainability of both developed and emerging countries. SSCM is an interdisciplinary domain catering to requirements of both environmental sciences and management sciences (Linton et al., 2007). Since early 2000s, both academicians as well as practitioners in the field of GrSCM and SSCM have conducted research covering a wide range of issues (Govindan and Soleimani, 2017). This study intends to map the developments in the area of sustainability in supply chain management literature through a detailed literature review. We perform a thematic analysis of research papers published in top journals on TBL leading to “Evolution of Sustainability in Supply

Download English Version:

<https://daneshyari.com/en/article/5479348>

Download Persian Version:

<https://daneshyari.com/article/5479348>

[Daneshyari.com](https://daneshyari.com)