



**Book Review of Green Supply Chain Management: A Concise Introduction by Joseph Sarkis and Yijie Dou, Routledge (Taylor & Francis), New York, 2018. ISBN: 978-1-138-30281-5, 177 PP.**

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**ABSTRACT**

*The philosophy of greening supply chains requires interrelated logistics activities and initiatives in procurement and logistics that ensure sustainable processes and designs in strategic supply chains. This book is phenomenal as it provides all the necessary issues relating to product design, processes, and associations that ensure a green supply chain for Variety Company and organizational settings. This book is capable of equipping students and practitioners with the fundamental issues of greening the supply chain. The main weakness of the book is that it failed to provide analysis on the subjects of international logistics and international trade, antidumping rules in building sustainable global supply chains, technological constraints and issues in developing countries, the role of regional economic integration in greening supply chains, inbound and outbound logistics, technologies of marketing and supply chain management synergies, "green information and communication technologies", "smart ICTs" and "sustainable ICTs", and how those are related to green supply chain management. Nevertheless, the book is resourceful for university educators, researchers, and students. The book is also a useful tool for operations management researchers and policymakers at local and global levels. This book review is important as it helps readers understand what is captured in the book and decide whether to read it or not.*

**Keywords:** Supply Chain Management, Green Supply Chain, Reverse Logistics, Green Purchasing, Supplier Relationships

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**I. SYNOPSIS AND REFLECTIONS**

The role of procurement and supply chain management in ensuring the availability of goods and services that we rely on in our daily lives cannot be overstated. A well-functioning system of supply of raw materials and finished goods is crucial for the success of any business, making it imperative to understand the importance of environmental protection in this context. This book offers a comprehensive analysis of green supply chains both in local and global contexts, covering almost all aspects of business operations. It is a valuable resource for students, researchers, and consultants looking to gain knowledge and practical insights on green supply chain management. The book provides a range of practical case studies and theoretical concepts that are highly relevant in the present local and global arena of green supply chain management. With its broad coverage and practical insights, this book equips readers with the knowledge and tools needed to make informed decisions and implement sustainable practices in their own organizations.

The authors of this book have done an impressive job of delving deeply into the various functions, activities, and issues involved in green supply chain management. They provide practical ways and strategies that organizations can use to effectively manage their green supply chain. The book is thoughtfully organized into eight chapters, with each chapter focusing on a specific functional area. Despite this narrow focus, the links and connections between the different elements of the supply chain are well considered and clearly illustrated. Greening the supply chain is a complex, systemic issue that requires careful management by organizations and their partners. A holistic perspective is essential, along with a keen awareness of the consequences of decisions and activities. Throughout the book, each chapter includes vignettes that help ground the theory in real-world practice. These case studies are especially valuable, as they provide concrete examples of how organizations can successfully implement green supply chain practices in their own operations.

This book is authored by experts in procurement and supply chain management with extensive knowledge in management, industrial management, and business organization management. The literature presented in the book is based on their theoretical knowledge and practical experiences in the field. The book aims to provide students with a comprehensive understanding of the environmental factors that impact supply chains and strategies to address social, political, market, technological, and economic issues that have led organizations to reconsider their impact. Through the book, readers can learn how to integrate the fields of operations and production management, procurement and purchasing, logistics, and marketing into a successful green supply chain. The authors emphasize the importance of



forming sustainable and long-lasting partnerships with external parties rather than solely focusing on internal company efforts.

In chapter one of the book, the authors provide a comprehensive introduction to the fundamental concepts of green supply chain management. The chapter provides a deep understanding of the basic tools for greening the supply chain and how they can be applied conceptually. The authors emphasize the need for industries to consider issues beyond their immediate operations and processes and take a broader perspective that includes upstream and downstream activities, which is essential for managing environmental burdens. The chapter also highlights the importance of having a regional and global focus when dealing with environmental issues in the supply chain. The concept of "closing the loop" is introduced as an integral part of greening the supply chain, and the authors explain how reverse logistics can be employed to achieve this. Corporate environmental management is another critical aspect discussed in this chapter. The authors emphasize the need for companies to have environmental management systems in place and adopt sustainable practices as a way of leading by example in greening the supply chain. Furthermore, the chapter provides a concise yet detailed explanation of the green supply chain management (GSCM) practices that can be employed by companies. The authors touch on various practices such as eco-design, green purchasing, internal environmental management, customer cooperation with environmental concerns, and investment recovery, providing a practical framework for implementing green supply chain practices.

Chapter two of the book expands on the concept of "eco-design, which was introduced in chapter one, and explores its implications for supplier relationships. Eco-design is defined as designing products for reduced consumption of materials and energy, reuse, recycling, and avoiding the use of hazardous products and manufacturing processes. This chapter emphasizes that effective eco-design requires involvement from various internal departments, such as marketing, operations, environmental, and supply chain management, as well as external suppliers. The authors stress the growing trend of requiring supplier involvement in product eco-design stages and provide practical guidance on how to implement it. They discuss problem-solving techniques and planning issues and provide insight into the drivers of supplier involvement, associated challenges, and success factors. The chapter highlights the importance of incorporating sustainable practices into product design and emphasizes the need for collaboration between focal companies and suppliers to achieve this goal. The authors provide a clear and concise explanation of the eco-design process and its benefits, which will equip readers with the necessary knowledge to implement eco-design in their organizations.

Chapter three of the book focuses on "Green Procurement and Purchasing" and highlights the importance of integrating sustainable practices into procurement and purchasing functions. The authors emphasize that these functions go beyond mere vendor selection, material selection, and buying and also include outsourcing, negotiation, delivery scheduling, inventory and material management, and even involvement in design (p. 46). The authors argue that companies should adopt the concept of green purchasing and environmentally conscious purchasing to ensure that their suppliers conform to accepted environmental standards. In fact, they caution that environmentally negligent suppliers can reflect poorly on purchasing customers, which can lead to reputational damage or even competitive disadvantage (p. 46). To provide a more in-depth discussion of green procurement and purchasing, the authors outline the role of green purchasing (p. 47), the drivers of green purchasing, both internal and external (p. 49), strategies for implementing green purchasing (p. 52), and performance measurement. The authors emphasize that the discussion in this chapter focuses on the upstream portion of the supply chain, particularly the role of the purchasing department in greening the supply chain. Overall, Chapter 3 highlights the critical role of procurement and purchasing functions in achieving sustainability goals in the supply chain. By adopting green procurement and purchasing practices, companies can ensure that their suppliers meet environmental standards, minimize reputational risk, and contribute to the overall success of their green supply chain initiatives.

Chapter four focuses on the topic of green supplier development and collaboration, building on the concept of supplier development, which is the effort made by a buying company to improve supplier performance to meet the company's supply needs. Green supplier development and collaboration, on the other hand, is a collaborative partnership between suppliers and buying organizations that allows both parties to be more responsive and adaptive in improving environmental performance while achieving economic profit. The authors recognize the strategic nature of green supply chains and address issues such as the process model for green supplier development, barriers to implementing green supplier development, and enablers for implementing green supplier development. They also connect the ideas presented in the previous chapters, noting that green supplier development can also improve buyers' product design and production processes while increasing the quality of the environmental management system. This chapter provides organization managers with a clear understanding of the barriers and enablers of green supplier development as an essential element in green supply chains. The practical process model presented and the Green Supplier Development



Process Model (GSDPs) list provide a grounding lesson on ways to improve suppliers' environmental performance.

Chapter five, titled "Green Logistics and Transportation," sheds light on the crucial role of logistics services and transportation in addressing environmental concerns in supply chains. With the rise of globalization and industrialization, it becomes imperative to make logistics practices more sustainable and environmentally friendly, encompassing both forward and reverse logistics. As the authors point out, "Green logistics applies environmental principles and seeks to manage the environmental burden of all stages of traditional logistics systems—product design, material sourcing, manufacturing processes, delivery of the final product to the consumers, after-sales, product return, remanufacturing/reuse, and recycling" (p. 92). The chapter mainly focuses on the forward logistics and transportation aspects of logistics. It discusses the key drivers of green logistics, the environmental impacts of transportation and logistics, the environmental impacts of other logistics activities, green transportation and logistics practices, and logistics environmental issues and improvements. By providing an overview of the various environmental implications and opportunities for greening logistics and transportation, this chapter highlights that sustainable logistics practices can not only benefit the environment but also enhance economic outcomes. Furthermore, the authors address the challenges that managers involved in logistics and transportation decisions in supply chains face. As the movement of materials through supply chains requires energy, generates waste, and emits pollutants, it is vital to consider the environmental impacts of logistics and transportation practices. This chapter emphasizes that green logistics and transportation practices can reduce the carbon footprint of supply chains, enhance brand reputation, and mitigate reputational risks associated with environmental negligence. Therefore, companies need to adopt green logistics and transportation practices to stay competitive in the market while fulfilling their environmental responsibilities.

Chapter six discusses the concept of a closed-loop supply chain (CLSC) and the importance of reverse logistics and the circular economy in green supply chains. The authors explain that a CLSC consists of both forward and reverse logistics processes and highlight the importance of the circular economy as an alternative to the traditional linear economy. They note that the circular economy is gaining much attention due to its potential for reducing environmental impact and generating economic benefits. The chapter provides a comprehensive overview of reverse logistics, including its functions and activities, driving forces, and management strategies. It also provides an introduction to the circular economy and its role in green supply chains. The authors emphasize that companies need to adopt circular economy principles to ensure that their processes are environmentally sustainable, especially in today's business landscape where consumers are increasingly environmentally conscious. Overall, this chapter is a valuable resource for logistics and supply chain managers and practitioners seeking to extend the life of products, reduce resource depletion, save energy, and decrease waste and environmental damage. It provides a clear understanding of the critical issues facing organizations in the areas of reverse logistics and the circular economy and provides guidance on how to integrate these concepts into green supply chains.

Chapter seven provides a comprehensive analysis of global and local relationships in the context of green supply chains. The chapter highlights the importance of envisioning green supply chain practices at different levels, which can guide managers in planning how their organizations are managed in different environments and the forces that influence their management. The authors begin by discussing the drivers of globalization and their relationship to green supply chains, including market forces, cost considerations, competition, technology, government policies, and macroeconomic factors. By analyzing these drivers, the authors provide readers with a deeper understanding of how globalization affects the supply of green materials and the impact it has on technology, competition, and other economic factors. The chapter also includes a discussion of boundaries and flows from a green supply chain management perspective. The authors provide a clear picture of the constraints that need to be addressed to promote the greening of supply chains globally and where the focus should be to establish good relationships with local and global partners. The chapter concludes with the importance of thinking globally and acting locally in green supply chain practices. The authors argue that it is best to aggregate local internal organizational and individual practices at higher levels and guide them with policies. By doing so, organizations can promote sustainable practices that are not only environmentally friendly but also economically beneficial. This chapter provides valuable insights for supply chain managers and practitioners who want to operate globally while ensuring they adopt sustainable practices in their supply chain operations.

Chapter eight of this book delves into the topic of green multitier supplier management, which expands on the discussion of greening the supply chain beyond the dyadic, single-tier level of analysis discussed in previous chapters. The authors explain that green multitier supplier management involves considering the environmental impacts of suppliers and customers both upstream and downstream in the supply chain, including sub-suppliers. The chapter provides valuable insights into the drivers, enablers, implementation approaches, and management of green multitier supply chains. By examining the extended supply chain, companies and other stakeholders involved in the process can gain a better understanding of the opportunities and challenges associated with implementing green supply chain



practices. As an area of emerging interest, there is much to be learned from exploring the nature of the extended supply chain, and this chapter offers valuable guidance for practitioners and experts seeking to create more sustainable and environmentally-friendly supply chains.

## II. EVALUATION AND DISCUSSIONS

In the book, the authors managed to provide a well-focused and systematic discussion of a number of issues that are essential in supply chain management, focusing mostly on making a green supply chain. The discussions in the book are essential for students, researchers, and consultants to get a different flavor of the flow of goods in the local and global supply chains and gain insight into all the necessary issues that can be implemented to ensure the supply of environmentally friendly supplies and the implementation of environmentally focused processes in production and operations. Almost all the products we use in the universe flow in the chains that are depicted as the supply chains in the book: the value we get from the products and the price we pay on the products. Making a green supply chain helps improve the quality of the product, and hence we recognize more value and value for money for the amount we invest in purchases. This book is a great deal since these are captured from individual to industrial buyers. The chapters are organized in a flow that provides a clear understanding of the universe through the flow of goods and services, as well as illustrations of how supply chains contribute to environmental pollution and strategies for dealing with these negative effects in supply chain management. Given the importance of collaboration efforts in ensuring the success of a green supply chain, the authors provided a very insightful analysis of the role of buyer-supplier relationships in greening supply chains. Despite the fact that there are challenges in these sorts of collaborations, the authors managed to provide a detailed discussion on the appropriate strategies for the subject. For example, on page 139, the authors recognize the power of encouraging employees to work together in teams and continuously think of ways to improve supply chain performance and build capacity in environmental knowledge. This is definitely a good step toward greening purchasing and supply chains.

Despite the favorable reviews and strengths of the book, it still has some weaknesses. For example, while it does provide a good analysis of green procurement and purchasing (in chapter three) and acknowledge the role of government in environmental concern initiatives, it fails to provide a thorough explanation of public procurement, sustainable public procurement (SPP), and green public procurement (GPP), which should be covered according to what the book aimed to address, as narrated by Shakya (2019). In the book Shakya (2019), in his narration, he explained that public procurement can be a strong policy tool, in addition to traditional methods such as regulation, policy guidance, and taxation, to influence the market in favor of environmentally friendly products and services. The book should have provided analysis on these aspects, as they are very important to the green supply chain.

In chapter five, presented with the caption "Green Logistics and Transportation", the authors explained this with good analysis and understanding considering pollution and emissions, but failed to articulate the role of green technology vehicles in road transportation emissions, which also provides the best understanding in green logistics and transportation. Besbes et al. (2019) narrated that as traffic and congestion levels rise, the use of eco-friendly vehicles and efficient transportation routes will become increasingly vital. (p.27). Most transport organizations are increasing their awareness of the potential effects and their functions and services—both internally and externally—as they grow. For example, the government in the UK has a set of high targets and aims to reach its goal, reflected in their Climate Change Act of 2008, of reducing the UK's greenhouse gas (GHG) emissions by at least 80% by the year 2050 when compared with 1990's levels. This implication of policy needs a drastic reduction of emissions, considering the road transport industry as the main contributor to these negative impacts.

The attention given in the book by the authors is mostly in developed countries, and it sounds more reactive naturally because the emphasis is on green solutions and little or no attention is given in developing countries. A move to a global green supply chain should include the issues that constrain developing countries. The GSCM concept is relatively new in Asian and African countries, with little possibility of many companies actually being able to implement it. According to Seman et al. (2012), they stated that "it is important to focus more on researching the adoption and implementation of green supply chain management (GSCM) practices in developing nations."

On the other hand, the book should have provided an understanding of the concepts of green audit, considering that green supply chains consider the position of customers and the general public, and green audit is key. According to Ganga (2019), Green Audit works as an environmental consultancy and reviews organizations with the aim of monitoring the performance of companies and organizations whose activities might threaten the environment and the health of citizens. The purpose of the Green Audit is to give citizens the information they need to be able to question when an institute or organization is destroying the environment, which we all depend on. The book would have been



more effective if it had provided a comprehensive explanation of the model and concept, which would have enabled readers to understand how organizations can systematically organize and implement green practices within the framework of green supply chain management (GSCM). In particular, the book could have addressed the fundamental question of how organizations can structure their practices by defining various dimensions and categories for analysis. However, Herrmann et al. (2021) have provided a useful answer to this question by presenting a detailed conceptual framework. This framework consists of three main environmental dimensions, twenty-one categories, and sixty-four green practices, which organizations can use to structure and implement their GSCM practices in a more organized and effective manner.

Most of the analysis done in the book is focused on the static supply chain greening analysis; the book failed to provide analysis on dynamic supply chain greening analysis, like capturing the concept of having resilient systems, according to Jabbarzadeh and Fahimnia (2015) on page 37, who narrated the dynamic supply chain greening analysis and defined resilience as "the capacity for a supply chain to survive and continue operating in the face of unanticipated disruptions. A focus on supply chain greening without giving consideration to the dynamic nature of the operating environment means trying to operate in an environmentally sustainable fashion in one specific state of the system with no efforts to manage the supply chain sustainability imbalance when changes occur in the state of the system (e.g., when the supply chain is affected by a disruptive event).

Despite the fact of having a good discussion about Green Logistics and Transportation in chapter five, the book failed to provide good analysis on transportation and the associated activities that contribute the greening of supply chain and the discussion about sustainable shipping initiatives, according to Lun et al. (2016), this may capture issues pertaining to avoidance of unnecessary packaging in transportation, increasing awareness in both shippers and shipping firms on the environmental impacts resultant of their cargo movement, shippers and carriers to promote the practice of sustainable shipping, Acquire energy efficient ships, Introduce eco-speed program to reduce fuel consumption and Optimize flow of water to reduce. The book could have been enhanced by offering a more detailed analysis of certain concepts that are essential to understanding green supply chain management (GSCM). For instance, the authors could have provided a clearer explanation of the relationship between inbound and outbound logistics and how they intersect with GSCM practices. Additionally, the book could have explored the role of emerging technologies such as "green information and communication technologies", "smart ICTs", and "sustainable ICTs" in facilitating GSCM. These concepts are addressed in a book by Achillas et al. (2019), which provides valuable insights into the ways that technological innovations can be leveraged to create more sustainable and efficient supply chains. For example, smart ICTs can be used to track inventory levels and optimize transportation routes, while sustainable ICTs can be used to reduce energy consumption and carbon emissions in the supply chain. By incorporating these concepts into their analysis of GSCM, the authors could have provided a more comprehensive understanding of the field and its potential impact on sustainable business practices.

## II. CONCLUSIONS AND RECOMMENDATIONS

This book is an invaluable resource for researchers, students, academics, and practitioners in procurement and supply chain management. It provides both practical examples and theoretical and model analyses that other researchers and authors can use and put into practice. However, the reviewer suggests that the addition of particular topics could improve the book even more. For example, the role of anti-dumping rules in building sustainable global supply chains could have been explored. Similarly, the book could have delved into the technological constraints and issues faced by developing countries, which often hinder the process of greening global supply chain management. Additionally, the book could have analyzed the role of regional economic integration in promoting sustainable supply chains. Such an analysis could pave the way for establishing a step-by-step approach towards institutionalizing integration at the national level. The subject of international logistics and trade also deserves more thorough discussion, as these factors play a critical role in greening global supply chains. Furthermore, the book could have included a discussion on lean and agile supply chain strategies in relation to building responsive and resilient systems that can adapt to changing customer orientations. This topic is crucial to promoting sustainable supply chains. By incorporating these additional topics, the book could provide a more comprehensive understanding of the field and its potential impact on sustainable business practices.

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