



SYSTEMATIC REVIEW ON SUSTAINABLE SUPPLY CHAIN MANAGEMENT WITH SPECIAL REFERENCE TO FUTURE EXPLORATION

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Abstract:

Sustainability is becoming more important in business because of urgent environmental problems, higher social expectations for responsible business practices, and the realization that conservation is a strategic necessity. The supply chain is a crucial domain for implementing sustainability, encompassing sourcing, production, distribution, and disposal activities. Sustainability in Supply Chain Management (SSCM) has evolved as a central theme in both academic research and commercial practice, integrating social, environmental, and economic factors into supply chain operations. Multinational corporations' worldwide supply chains frequently extend across continents, navigating varied legal frameworks and socio-cultural landscapes. Therefore, SSCM approaches must be adequately flexible and sophisticated to tackle the distinct sustainability issues and opportunities present in various countries. Rapid progress in technology, especially in Industry 4.0, is constantly changing how the supply chain works and how sustainability projects are carried out, which calls for up-to-date information and analysis. In this article, systematic review on sustainable supply chain management with special reference to future exploration has been discussed.

Keywords: Sustainable, Supply, Chain, Management, Exploration.



INTRODUCTION:

Sustainability in Supply Chain Management (SSCM) is an idea that has been talked about a lot in academia and the business world over the past few decades. It adds three aspects of sustainability to traditional supply chain issues: social, economic, and environmental. The idea behind this has changed a lot over the years. Beginning with the procurement of raw materials and continuing through their distribution, use, eventual disposal, or recycling, sustainability concepts have gradually permeated the whole supply chain. Sustainable supply chain management is greatly affected by the regulatory landscape, as many statutory obligations are established by legislative authorities worldwide to promote sustainable practices in supply networks. A landmark law that promotes candor and accountability is the California Transparency in Supply Chains Act, which requires businesses to lay forth their plans to eradicate slavery and human trafficking from their supply chains. The paradigm for managing supply chains has shifted due to Industry 4.0 and its many technical advancements. Most notably, the advent of AI, the IoT, and blockchain has provided this industry with some very powerful new tools. These technologies have the power to change things, and they have already been used to make the supply chain more visible, make it easier to track products and materials, boost efficiency, and eventually encourage sustainable practices all along the chain. Stakeholders, including customers, investors, NGOs, and local communities, have increasingly acknowledged their influence and are applying substantial pressure on firms to enhance their SSCM policies. An exemplary instance is the Sustainable Apparel Coalition, a worldwide consortium of fashion brands, retailers, suppliers, and advocacy organizations that created the Higg Index, an advanced instrument for evaluating and comparing a company's environmental and social performance throughout its supply chain and thus promoting sustainability enhancements. The organizational culture, encompassing its values, conventions, and leadership styles, significantly impacts the adoption and efficacy of SSCM methods. The dedication of organizational leaders to sustainability, evident in their strategic choices, communication, and exemplification, is a crucial catalyst for SSCM. Organizations that effectively integrate sustainability into their cultural framework can improve their SSCM practices, promoting environmental stewardship, social responsibility, and long-term economic viability.



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Okeke, A. (2024). The motivation behind this study is the need for careful resource management in the oil and gas industry as well as the rising global concerns about environmental effects. Supply chain management (SCM) and sustainability strategies in this sector were examined through a systematic review. The empirical approach included a comprehensive search of the main databases. This was done to find important studies that talk about sustainability metrics, supply chain management techniques, and the institutional forces that affect these things. According to the main findings, there is a lack of uniformity and consistency in the ways that oil and gas firms have begun to integrate sustainability principles into their supply chain management strategies. One major gap in the existing literature that needs filling is the lack of holistic frameworks that analyze the interdependencies of supply chain sustainability on three fronts: the environment, society, and the economy. In order for oil and gas companies to implement effective and dependable environmental protection measures, the results show that the industry needs stronger rules and regulations. To provide a more comprehensive approach to sustainable supply chain management in the oil and gas sector, the paper recommends that future research concentrate on creating integrated models that address all aspects of sustainability. This will improve theoretical knowledge and give practical viewpoints for politicians and business leaders who are working for a more sustainable future in this important area.

Shebeshe, E.N., Sharma, D. (2024). This study's overarching objective is to investigate how sustainable supply chain management might help Ethiopia's manufacturing industry gain a competitive edge. Data from 221 distinct Ethiopian industrial sectors were collected and analyzed to accomplish the study's objectives. The quantitative methodology employed in this study includes both descriptive and causal research methods. We surveyed 221 industry managers and supervisors by sending them questionnaires directly. In addition, Smart-PLS 4.0's structural equation modeling was employed for data analysis. According to the research, SSCM significantly improves both competitive advantage and business outcomes. In addition, the data demonstrates a correlation between competitive advantage and the efficacy of organizations. Competitive advantage also has an indirect impact on the SSCM and OP connection. According to the findings,



OP and competitive advantage can be enhanced with the effective use of SSCM. This study is the first of its kind to examine the connection between SSCM and manufacturing performance in Ethiopia, taking into account the triple-bottom-line approach and the mediating impacts of competitive advantage. This research contributes to our understanding of how sustainable supply chain management (SSCM) may help businesses succeed in the manufacturing sectors of developing nations. The findings may not be generalizable to a larger population than they otherwise would have been if this study had used a different type of research strategy. This study used the variable under study to quantify Op, a popular and constantly evolving term.

Pal, S. (2023). Growing environmental concerns and public demand for moral business conduct have made sustainability in supply chain management (SSCM) a top priority for companies around the world. In this study report, we thoroughly and methodically review the existing literature on SSCM, which includes diverse investigations conducted over the last 20 years. We need to condense the main themes, theoretical frameworks, methodology, findings, and future research prospects to present a comprehensive picture of the area. Organizational culture, stakeholder demands, technological changes, and regulatory legislation are just a few of the many factors that the analysis highlights as having an effect on the complex and multidimensional subject of SSCM. A number of concerns remain unsolved despite major progress, particularly concerning the global South and the integration of Industry 4.0 technologies. The paper's conclusion includes recommendations for further study and application.

Arda, O.A. et al. (2023). Despite widespread agreement that supply chain management literature must address all three dimensions of sustainability—economic, social, and environmental—as part of the triple bottom line, this has not been the case. We will investigate in this essay the potential effects of operational performance on the relationship between environmental, social, and governance (ESG) factors and financial performance, and we will also look at the potential effects of ESG on operational performance and environmental management methods. To test their hypotheses, the authors apply structural equation modeling to a dataset that includes 208 enterprises from various industries. The study's research backdrop is Turkey, a sizable expanding market and a supply chain hub that connects Europe and Asia. Positive mechanisms mediate the



relationship between operational performance and environmental management approaches. Positive processes also serve as mediators between financial performance and social and environmental performance. These illustrate the reciprocal relationships between the three facets of sustainability. The outcomes of the mediation align with the resource-based perspective. They demonstrate how boosting capacities and resources through environmental management strategies supports the triple bottom line and enhances organizations' financial success. All three criteria have not yet received adequate attention in supply chain management research, despite the abundance of studies on sustainability. By explicitly considering all three aspects of sustainability, this study sets itself apart and contributes to our understanding of how they interact.

Shekarian, E., Ijadi, B., Zare, A., Majava, J. (2022). Sustainable business practices are profit-boosting techniques that consider economic, environmental, and social issues, also known as the triple bottom line of sustainability. The many facets of supply chain operations have been the subject of a great deal of research. But there's still space for a complete framework for various businesses to be provided. This study closes this gap by reviewing and analyzing previous empirical findings. We make a complete taxonomy of environmentally friendly practices in supply chains by gathering and organizing 789 activities from a careful reading of 86 studies. Furthermore, we scrutinize the methods employed for data analysis. We illustrate the existing sustainable industries by comparing their practices to the industries under study. A thorough table presents the specifics of the papers under study. The sustainable framework organises 38 small operations into 11 broad categories to show how industrial solutions might create more sustainable supply chains. This essay offers a fresh take on the sustainable solutions that various organizations are offering while also reclassifying the literature that outlines future trends. In a broader sense, this has numerous benefits for academics and professionals working to improve supply chains.

Seuring, S. et al. (2022). About 20 years ago, sustainable supply chain management (SSCM) was a specialized concept that eventually became popular. Building on Seuring and Müller (2008), this work revisits some of the field's conceptual advancements. We review the current state of theory development in SSCM by utilizing this framework and its fundamental ideas. We consider the research requirements for each of the original framework's constructs. While certain constructs—



such as drivers and barriers—have been thoroughly studied, others, like supplier development or stakeholder management, need more investigation. We will continue to discuss risk and performance issues, even though certain crucial accounts are necessary. This debate, which makes up the second major section of the paper, indicates the need for more research. One of the main themes influencing change in SSCM would be the connection between sustainable development and digital transformation. We would appreciate further studies on rising economies and the effects supply chains have on the environment and society in these settings. Though not doing a thorough examination that covers every facet could be viewed as a limitation, this research is motivated by thinking about the constructs' content and order for potential future attempts.

Kottala, S.Y. (2021). The goal of this work was to gather pertinent research publications on sustainable supply chain management techniques that have been published over the past 18 years. The author divided the review into groups based on how sustainable the manufacturing and supply chain parts are. They did this by looking at economic, environmental, and social factors as well as the effectiveness of sustainable supply chain management. The writers compiled pertinent research from prestigious, peer-reviewed national and international journals, as well as conference proceedings. The study made recommendations for further research as well as potential research directions, particularly in relation to the Indian environment.

Carter, C.R. et al. (2020). The goal of this study is to bring Carter and Easton's (2011) work up to date by looking at the literature on sustainable supply chain management (SSCM) that came out in the major logistics and supply chain management journals between 2010 and 2018. The authors follow Carter and Easton (2011)'s methodology using the systematic literature review (SLR) approach. A high degree of empirical validity for this methodology is demonstrated by the Modified AMSTAR criteria. Changes in empirical emphasis, theoretical frameworks, units of analysis, methods, and types of analysis are all part of SSCM's ongoing development. Still, a lot of ground needs to be covered in the realm of future research. For example, how about investigating underexplored subjects like diversity and human rights/working conditions? We could also use the group as our analytical unit and do a better job of tackling social desirability bias and empirical validity. The results provide a thorough plan of action and recommendations



for future SSCM studies. The report concludes with additional research directions on theory development and decision-making. The development of empirical SSCM research over the last 28 years is thoroughly and rigorously examined in this SLR.

Tundys, B. (2020). Both business and literature have discussed the topic of sustainable supply chain management since the 1990s. Over the years, there have been adjustments and revisions made to the defining range (including the number and complexity of individual processes) as well as the development phases. The concept's broad definitions and theoretical scope impede its application in economic practice. This paper's objective is to demonstrate how the concept and thematic breadth have been assessed from a theoretical and practical implementation standpoint. The research employed selected case studies and content analysis techniques. One of the most important results is a bibliometric analysis that describes the current state, volume, and scope of SC research. It also looks at research directions and trends, finds research gaps that could help future research, and shows how our understanding and use of SSCM has changed.

Koberg, E. & Longoni, A. (2019). Sustainable supply chain management is one way to make the supply chain more environmentally friendly. Multinational firms are always arguing over what happens in their worldwide supply networks, which makes it impossible for them to address the social, environmental, and economic implications of these linkages. Aiming to provide a concise overview of the key elements of sustainable supply chain management for global supply networks, this paper sets out to do just that. Over the course of fifteen years, the aforementioned works appeared in peer-reviewed periodicals written in English. This is achieved by applying structured content analysis to them. Our literature evaluation also covers sustainable supply chain management and worldwide supply networks in depth and systematically. Contributing to the literature, this study demonstrates the critical role of configurations and governance mechanisms in achieving sustainability outcomes in global supply chains through sustainable supply chain management. More and more, businesses are opting for deals that involve multiple suppliers and a tighter connection between the main company and each one, either directly or through intermediaries. These types of deals are seen as having a greater impact on sustainable growth. Additionally, they provide a variety of additional research topics. By informing target enterprise



managers on how to improve sustainable outcomes in their supply chains, the research also encourages practice.

FUTURE EXPLORATION:

The systematic literature review on SSCM shows that it is an active and growing field of study, with more and more people realizing how environmental, social, and economic factors affect supply chain operations. The study finds a lot of gaps in our knowledge and suggests new areas to explore in the future, especially when it comes to Industry 4.0, evaluating sustainability performance, and small businesses' involvement in SSCM. In the future, researchers may look into how different factors affect SSCM practices in different areas and industries. This will help us understand SSCM in a more complex and situational way. As Industry 4.0 advances, future study should investigate how emerging technologies like artificial intelligence, block chain, and IoT might be utilized to improve sustainability in supply chains. Research might examine how AI can enhance logistics to minimize emissions or how block chain can guarantee ethical sourcing and equitable trading practices. The circular economy is increasingly recognized as a method for sustainability. Future study may explore the reconfiguration of supply chains for circularity, including product design for disassembly, reverse logistics, and closed-loop supply chains. As global supply chains grow more intricate and linked, they face heightened sustainability concerns, encompassing climate change effects, resource depletion, and social challenges. Future research may concentrate on how corporations may detect, evaluate, and mitigate these risks within their supply chains. Considering the magnitude and immediacy of sustainability issues, gradual enhancements in supply chain standards may be inadequate. Future study may investigate the attainment of radical sustainability transitions within supply chains, potentially utilizing transition management theory and transformative innovation policy. To enable the transition of supply networks to sustainability, it is essential to provide future supply chain professionals with the necessary knowledge and abilities. Future research may investigate the incorporation of sustainability into supply chain education and training, potentially yielding insights into effective pedagogical strategies and curriculum development. Achieving sustainability in supply chains frequently necessitates collaboration that transcends the confines of individual organizations or



sectors. Future study may investigate the dynamics of cross-sector cooperation, analyzing how various stakeholders—including enterprises, governments, NGOs, and communities—may collaborate to promote sustainable supply chain management (SSCM).

CONCLUSION:

The systematic review shows that there is a large and complex body of research on sustainability in supply chain management. It stresses how important it is to incorporate sustainability into basic supply chain operations. As the need for sustainability grows, SSCM research and practice will definitely move forward, opening up huge opportunities for new ideas, education, and power. Lastly, the field of study known as Sustainability in Supply Chain Management (SSCM) is constantly evolving. This is because sustainability issues are always changing, and so are the ways that supply chain management is organized. This systematic review provides a thorough analysis of the existing literature, emphasizing principal topics, developing trends, and significant research gaps. As SSCM grows as an academic field, it needs a more complex and critical view that takes into account the different and often conflicting interests of stakeholders, the situational aspects of sustainability strategies, and the systemic and transformative changes that are required for supply chains to be truly sustainable. Because sustainability issues are complicated and linked, there needs to be more multidisciplinary and trans disciplinary research in SSCM. This research should include views from many fields, such as technology, behavioral science, economics, and policy studies. Even though the global context is important, more research should be done on the context-specific aspects of SSCM. This includes looking at how cultural, institutional, and geographic factors impact supply chain sustainability practices and outcomes. Effectively attaining sustainability in supply chains necessitates cooperative efforts among diverse stakeholders, such as suppliers, customers, regulators, and civil society organizations. Future research may investigate the effective cultivation and management of cooperation for sustainable supply chain management (SSCM). The evolving subject of SSCM has significant opportunities for innovation, encompassing technology solutions, innovative business structures, and policy initiatives. Future study may clarify the determinants, obstacles, and effects of these advances, providing essential insights for practitioners and policymakers alike.

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