

**The Effect of Sustainable Supply Chain Management
on Environmental Performance: Applied on Fuel
Stations in KSA**

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Abstract:

the current research aimed to determine the impact of economic sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia, determine the impact of Environmental sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia and determine the impact of Social sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia. The independent variable is sustainable supply chains management (Economic sustainability, Environmental sustainability, and Social sustainability) and dependent variable is environmental performance.

Thus, how does sustainable supply chain management affect the environmental performance of retail petrol stations in Saudi Arabia is the current study's main issue. This is what the study's issue is. The issue at hand is understandable given the impact it currently has and will continue to have on retail fuel stations, society at large, and other relevant parties if it is not resolved.

The research concluded that the application of sustainable supply chain practices has a positive impact on environmental performance, meaning that the greater the application of sustainable supply chains, the better the environmental performance. The research recommended several recommendations, the most important of which are: the need to pay attention to the process of periodic audit and follow-up of the environmental management system, Companies should integrate awareness programs related to green waste management , The need to conduct training courses for executive management to educate them about the concept of supply chains and the extent of its impact on the manufacturing process in general and on their performance and safety, which in turn affects the company's performance, The need to make more reports on environmental pollution data resulting from Fuel Stations due to its extreme scarcity in the responsible authorities. As the Ministry of Environment, also it is necessary to develop more regulations and legal legislation under which companies are given the right to obtain environmental management certificates.

Keywords: Sustainable supply chain management, Environmental performance, Fuel stations.

Introduction:

The World Environment and Development Organization define sustainable development as "development necessary to meet contemporary people's needs, they cannot destroy the ability of future generations to meet their own needs." This definition is the most widely recognized. A growing number of organizations are including sustainability on their strategic objectives. Businesses frequently follow the triple bottom line approach put forward by Elkington (1998), who suggested balancing social, environmental, and economic challenges from a micro perspective. Businesses have been paying more attention to social responsibility and environmental practices in recent years, as well as timely release of environmental and corporate social responsibility (CSR) reports, as they have become more concerned with the social parties for sustainable development (Wan Nurul Karimah et al., 2016).

Businesses used social practices (like initiatives to enhance working conditions for employees or assist community activities) and environmental programs (like product design and recycling) to achieve sustainable supply chain management (SSCM) (Wang & Dai, 2018). SSCM has become ingrained in both individuals and companies with the idea of sustainable development and increased awareness of environmental protection and social responsibility. Managers must take the public's attitudes on social responsibility and the environment into account. SSCM is a crucial component of dynamic business development's corporate innovation processes, which are essential to the continued existence and growth of corporate (Gosling et al., 2017).

Generally, supply chain companies assume liability for any adverse impacts caused by any link in the network. Core businesses must take greater accountability for the social and environmental performance of their whole supplier chain. As a result, businesses use the SSCM process to control every supply chain participant in addition to themselves, for sustainable management. To prevent and reduce the negative effects of supply chain members' lack of environmental and social responsibility, supply chain core firms should enhance their environmental and social performance through both internal and external SSCM management (Wang & Dai, 2018). So, this study examines the effect of Sustainable Supply Chain Management for fuel stations in KSA, analyzes their effect on environmental performance.

Sustainable Supply Chain Management (SSCM):

SSCM is an activity that helps to advance and make the Sustainable Development Goals (SDGs) possible. These objectives tackle global concerns like poverty, inequality, and climate change (Hák et al., 2016). Koberg and Longoni (2019) claim that over the previous 20 years, supply chain management (SCM) has concentrated on businesses' initiatives to increase their sustainability, especially in relation to their supply chain operations.

A company's operational procedures and strategic plans for efficiently integrating social and environmental considerations into supply chain management are collectively referred to as supply chain socialization (SSCM). Ensuring continuous economic success while improving the company's entire social and environmental output as well as that of its suppliers and consumers is the main goal. According to this concept, businesses should take steps to improve their social and environmental results as well as put policies in place to lessen the impact on their suppliers' and customers' operations (Wang & Dai, 2018).

Organizations can benefit from SSCM in a number of ways, according to Panigrahi et al. (2018), including enhanced environmental performance, cost savings, and improved reputation. They came to the conclusion that efficient supply chain management may significantly improve both the bottom line and the environment, and they suggested that companies give sustainability top priority when building their supply chains.

By creating a strong link between the economy and a suitable supply network, SSCM plays a crucial role in the economy. Businesses and governments have come to understand the importance of sustainable supply chains in fostering social advancement, environmental preservation, and economic growth in recent years (Peng, 2023). To support a successful economy that can meet present and future needs while encouraging regeneration, an SSCM must be developed. Adopting sustainable supply chain practices can open up new economic opportunities. These opportunities include developing eco-friendly technologies, creating jobs in the resource-efficient and renewable energy industries, and expanding the markets for sustainable products and services (Yang & Wang, 2023).

Sustainable Supply Chain Management Benefits:

Supply chain management allows for the optimization of earnings and social welfare at the same time as reducing operating expenses and environmental issues (Kusi-Sarpong et al., 2019). From a triple bottom line (TBL) standpoint, supply chain management (SSCM) is essential for mitigating the negative effects of operations and increasing an organization's efficiency (Vargas et al., 2018). Organizations can attain sustainability through SSCM programs (Danese et al., 2019).

As a result, businesses have been incorporating sustainability into their supply chains more and more to protect their reputation and brand, control risks associated with the chain, like labor disputes and environmental damage, maintain business continuity, and reduce expenses and interruptions (Romano et al., 2021). As a result, supply chain sustainability promotes long-term economic, social, and environmental advantages for both businesses and consumers. Furthermore, the incorporation of methods to stop or lessen environmental degradation—such as harmful gas emissions, water pollution, and soil pollution—is made possible by SSCM processes. The objectives of these endeavors are to enhance financial outcomes, optimize earnings, cultivate a positive image, and acquire a competitive edge (Moktadir et al., 2018).

SSCM guarantees optimal production procedures throughout the duration of a product's life cycle (Mathivathanan et al., 2018). It links environmental concerns with development, causing political and economic change at the local, national, and international levels (Mangla et al., 2017). Producers, sellers, and suppliers must use sustainable practices in order to develop a product that is sustainable for end users (Gonçalves et al., 2024).

In order to mitigate the negative effects, companies striving for sustainability in their supply chains must encourage innovation (Koberg & Longoni, 2019). Organizations can gain a lot from sustainable innovation, such as improved earnings, lower operating costs, and a better social image (Gonçalves et al., 2024). It also results in lower costs, an increase in market share, and gains in income and stock (Kusi-Sarpong et al., 2019).

Sustainable Supply Chain Management Barriers:

Businesses trying to incorporate sustainable ideas often face a plethora of obstacles. A portion of these difficulties are brought about by the lack of reliable institutions that offer companies looking to adopt novel procedures methodical direction. A wide range of resources are necessary for successful innovation, such as financial capability, funding availability, the ability to hire highly skilled teams, market expertise, research and development, and efficient coordination and cooperation among supply chain partners (Gonçalves et al., 2024).

Employees in supply chain firms must be better equipped to traverse these obstacles by having a deeper awareness of their nature and techniques for overcoming them. This enables them to constructively address obstacles and promote reforms that advance sustainability. Consolidating and implementing all of these tactics at once, though, can be a difficult task. For this reason, businesses need to determine what obstacles stand in the way of their objectives, rank them, and devise plans to get through them. Still, integrating SSCM into conventional supply chains is a challenging undertaking every time (Gupta et al., 2020).

Big SSCM efforts frequently encounter difficulties during implementation, whether in a production or service setting, mostly as a result of hurdles receiving insufficient attention. Because they are unaware of significant barriers, 35% of businesses are unable to use SCM (Gonçalves et al., 2024). As a result, professionals must not only investigate these obstacles in light of the nature of their company but also weigh the significance of each to establish its relative relevance. Using this method enables companies to pinpoint ways to get beyond current obstacles to supply chain sustainability implementation. These tactics entail detailed action plans meant to assist businesses and their supply chains in overcoming the obstacles associated with achieving sustainability. Nonetheless, there are still few thorough studies that identify obstacles as well as solutions for them (Gupta et al., 2020).

Dimensions of Sustainable Supply Chain Management (SSCM):

1. Economic Sustainability:

Economic sustainability refers to the impressive use of resources to reduce the negative consequences of resource exploitation and have long-term substantial impact. Economic stability is

characterized by both attainable returns on investment and assurances that the activities of organizations do not result in any kind of social or environmental harm. Businesses that are economically sustainable always ensure that there is enough cash flow to maintain liquidity and consistently generate above-average returns for their shareholders. Because of this, achieving sustainability necessitates that economic record-keeping systems replicate environmental resources (Mac-Kingsley & Pokubo, 2018).

2. Environmental Sustainability:

One important aspect of sustainability is the environment. It is a compilation of the limitations of the four primary activities that comprise the human economic subsystem's scale: the use of both non-renewable and renewable resources on the source side and waste assimilation pollution on the sink side. Since its establishment, the environment has been more and more destroyed. Sustainability is required because of the way natural resources are wasted. In today's economic environment, an organization's ability to survive depends on how much it integrates environmental factors into its supply chains (Mac-Kingsley & Pokubo, 2018).

3. Social Sustainability:

Social sustainability addresses a number of issues that at first glance might seem like simple moral or consumer decisions, such as the relationship between corporate power and environmental justice, human rights and development, global poverty and citizen action, and responsible global citizenship. Companies that incorporate social ethnicity, environmental concerns, and operational activities beyond legal requirements are considered socially responsible. Their actions have the potential to improve the quality of life for most company stakeholders (Mac-Kingsley & Pokubo, 2018).

Environmental Performance:

An organization's dedication to protecting and enhancing the environment is reflected in its environmental performance. Zhu et al. (2017) state that the company may cut back on the amount of air, liquid, and solid waste it produces as well as the amount of hazardous and toxic products it uses and the frequency of environmental mishaps (Dzikriansyah et al., 2023).

Environmental performance is the preservation of the environment and the mitigation of the harm that business operations cause to the environment. In order to minimize or completely eliminate the production of waste and pollutants both during and after the production process, companies are therefore expected to reduce and regulate their use of energy and natural resources. Additionally, companies can introduce new, environmentally friendly products that have a lower ecological trace (Mac-Kingsley & Pokubo, 2018).

EP is described as an organization's pledge to maintain and safeguard its natural environment. A number of factors, including the preservation of soil, water, and air quality, were taken into account when measuring EP (Aggarwal & Agarwala, 2023). Sen et al. (2013) used two methods to categorize the measurement of EP:

1. **Direct approach:** This method concentrated on quantifying the variables that directly affect pollution management plans and techniques. These encompass a variety of strategies, including environmental innovation management, planning environmental impact assessment, and intelligent and information-based environmental management.
2. **Indirect approach:** These methods lead to improvements in environmental performance but do not directly address pollution control techniques and tactics. It involves a number of strategies, including choosing an environmentally friendly supplier, cutting back on energy use, and emphasizing waste reduction.

Research Problem:

The oil industry is huge and important in today's world. In addition to being a significant source of energy, petroleum products and their byproducts are used as feedstock for a variety of consumer goods in the petrochemical, textile, pharmaceutical, and fertilizer industries. If not managed properly, the greater oil business might lead to major environmental dangers and have a detrimental effect on the land, water, and air in addition to all living things. The retail fuel service station industry and business rely on the environment for functionality, resources, and ultimately trash disposal. As a result, they play a crucial part in assisting global efforts to achieve sustainable development (Kany, 2014).

A factory that sells fuel and lubricants for cars is known as a retail fuel station. Gasoline, liquefied natural gas (LNG), diesel, kerosene, and motor oil are all sold at retail gasoline stations. Effective

oil supply is essential to the operation of modern society. Consequently, as a result of urbanization, retail gas stations are present in many nations. As a result, the constant vapor emissions have a negative impact on the health of the local population. Products, particularly gasoline, that are sold at retail fuel stations contain volatile organic compounds like benzene, which can catch fire and release vapour even at low temperatures. According to certain empirical research, breathing in benzene when exposed to the environment can result in lung cancer, leukemia in the brain and stomach, irritation of mucous membranes, dermatitis, bone marrow depletion, and heart attacks (Mac-Kingsley & Pokubo, 2018).

The supply chain for gas and oil includes the retail gasoline stations. There are three sectors in the oil and gas supply chain: upstream, midstream, and downstream (Briggs et al., 2012). Selling goods that release emissions during usage or storage is under the purview of the downstream industry. According to Lenzen and Murray (2010), the downstream industry is brought to life and sustained by sales, which come with emissions that would have been revealed in a different way. Thus, incidents of environmental deterioration that are typical of product delivery and dispensing do not exclude the retail fuel station. Sustainable supply chain management will therefore be essential to the sector. On the other hand, little is known about the industry's sustainable supply chain management strategies and how they improve environmental performance. Suspicion that the retail gas stations lack well-established sustainable supply chain management techniques that produce favorable environmental performance could not be entirely out of place.

Thus, how does sustainable supply chain management affect the environmental performance of retail petrol stations in Saudi Arabia is the current study's main issue. This is what the study's issue is. The issue at hand is understandable given the impact it currently has and will continue to have on retail fuel stations, society at large, and other relevant parties if it is not resolved.

Research Importance:

- Assisting supply chain managers in responding to the growing trends towards sustainability issues and attention to environmental and societal issues, especially in Arab countries.
- Helping business organizations develop competitive advantages resulting from improved financial performance as a result of adopting and applying sustainable supply chain practices.

- Helping business organizations carry out their social and environmental responsibilities and improving their image in society in general.
- Following up on recent studies in the field of supply chain management, which tended to study the transformation from traditional supply chain practices to adopting modern practices that take into account the current environmental and societal dimensions.
- The research is an extension of the growing trend of research in the field of supply chain management by linking supply chain practices and activities, sustainability practices, environmental conservation issues, and scarce resources from a holistic perspective.

Research Questions:

- What is the impact of economic sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia?
- What is the impact of Environmental sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia?
- What is the impact of Social sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia?

Research Objectives:

- Determine the impact of economic sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.
- Determine the impact of Environmental sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.
- Determine the impact of Social sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.

Research Hypothesis:

H1: There is a significant positive effect of Economic sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.

H2: There is a significant positive effect of Environmental sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.

H3: There is a significant positive effect of Social sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.

Research Model:

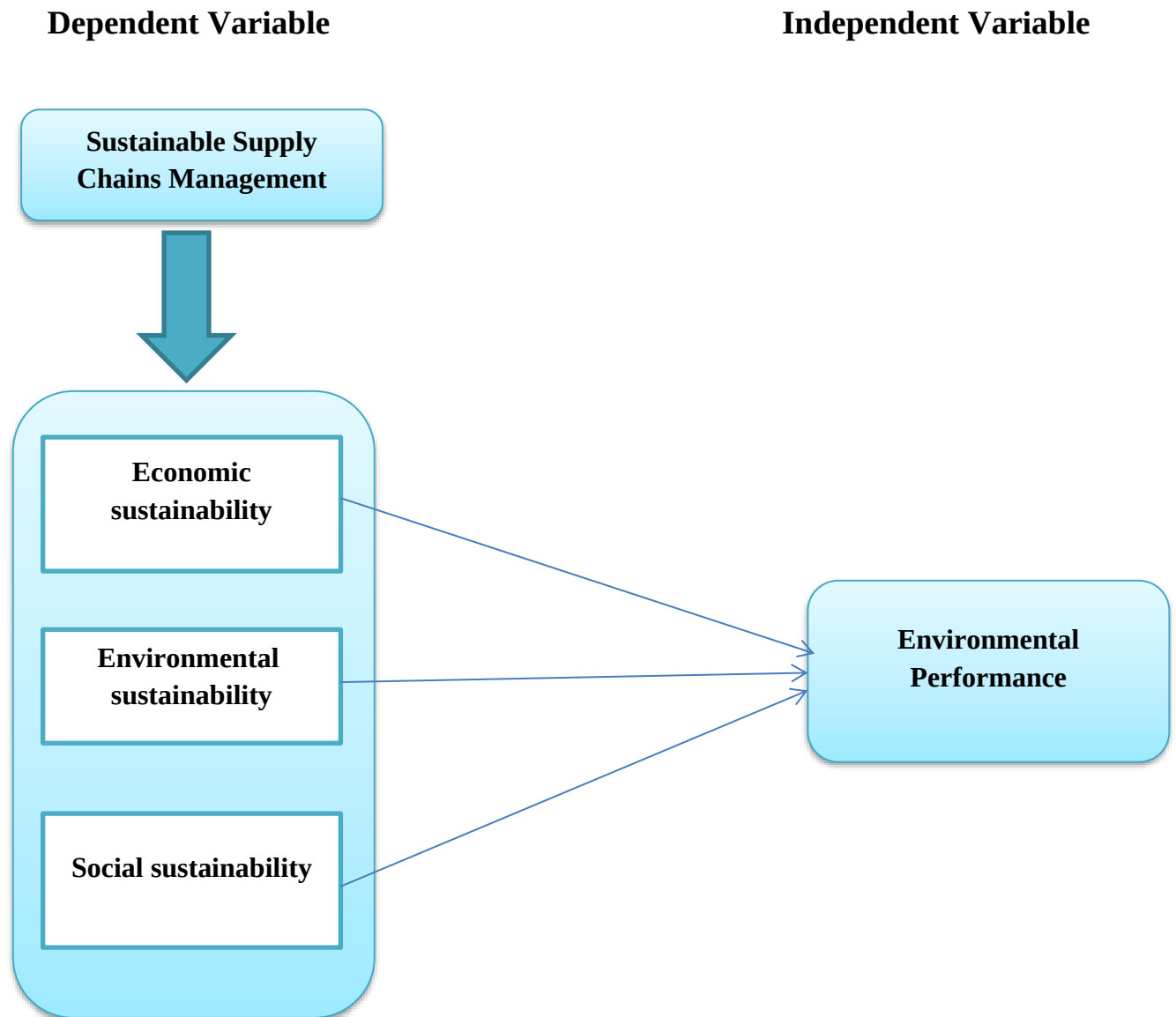


Figure 1: Research Model.

Research Methodology:

The study's perspective is based on retail fuel stations in the Kingdom of Saudi Arabia that have adopted sustainable supply chain management. A total of 200 managers at retail gas stations in Saudi Arabia will give questionnaire surveys to complete. The managers were categorized by job title and job responsibilities as purchasing, distribution/logistics, SCM, transportation, material, and operations.

On a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), the respondents were asked to rate the degree to which environmentally friendly supply chain management techniques correlate with environmental performance. The reliability of each scale was assessed using the Cronbach's alpha. When an alpha value is greater than 0.7, all scales are regarded as credible.

Timeline Table:

Assignment	Weeks											
	1	2	3	4	5	6	7	8	9	10	11	12
#1												
#2												
#3												
#4												

Literature Review:

In this part, the researcher will discuss previous studies that dealt with the study variables of sustainable supply chain and environmental performance, and they will be presented from oldest to newest, where the relationship between both the independent variable and the dependent variable will be clarified as follows:

1. (Esfahbodi et al., 2016): "Sustainable supply chain management in emerging economies: Trade-offs between environmental and cost performance".

This study links SSCM practices and organizational performance by developing and empirically evaluating an integrated SSCM performance framework supported by the Resource Dependence Theory (RDT). This study applies the RDT tenets to comprehend how businesses leverage the resources of their partners to adopt SSCM practices and handle the performance consequences. through an empirical investigation of 128 manufacturing companies—72 in China and 56 in Iran—this study analyzed and evaluated how the implementation of SSCM affected cost and environmental performance in these two developing economies. The results of a multiple regression analysis indicate that these two growing economies have more things in common than things in different ways. The findings show that while adopting SSCM procedures raises environmental performance standards for Chinese and Iranian businesses, it does not always translate into better cost performance. Our findings imply that in order to minimize trade-offs between cost performance and environmental sustainability, businesses operating in emerging countries should approach SSCM programs with a more comprehensive focus on their financial bottom line.

2. (Costantini et al., 2017): "Eco-innovation, sustainable supply chains and environmental performance in European industries".

Green technology adoption and introduction are seen to be the most economical ways to lessen environmental impact without sacrificing economic competitiveness. Although the scientific literature has highlighted the critical role that green technology diffusion channels play throughout the supplier value chain, there are few actual quantitative studies regarding the efficacy of green technologies in enhancing environmental performance. This paper's goal is to draw attention to how inter-sectoral relationships shape how eco-innovations affect sectoral environmental performance. Empirical research demonstrates that Eco innovations have both direct and indirect benefits on reducing environmental stress, and that the degree of these effects changes along the value chain based on the technology used and the kind of pollutant being studied. First, corporate and policy governance strategies should explicitly address the objective of maximizing environmental gains that can be achieved through the development and adoption of clean technologies along the supply chain. Secondly, both strategies should be coordinated in order to minimize the costs for reducing environmental pressures. These are the main conclusions that can be drawn from this.

3. (Wang & Dai, 2018): "Sustainable supply chain management practices and performance".

This research aims to provide a substantial empirical contribution to the field's understanding of how Chinese enterprises' performance is affected by sustainable supply chain management (SSCM) methods. A thorough SSCM practices and performance model are also intended to be theorized and empirically evaluated in this study. The model analyzes the effects on corporate sustainability performance from all angles, taking into account the two SSCM practice components of internal and external management. This study creates a conceptual model to look into how SCM practices affect the performance of the company. This article uses PLS structural equation methods to assess the effects of SSCM practices on firm economic performance, environmental performance, and social performance for each dimension based on data from 172 Chinese enterprises. The findings demonstrate that a company's internal SSCM procedures improve both its social and environmental performance. Furthermore, there exists a positive correlation between economic performance and environmental and social performance.

4. (Wang et al., 2018): "Moderating the Role of Firm Size in Sustainable Performance Improvement through Sustainable Supply Chain Management".

The study of sustainable supply chain management (SSCM) for businesses has significant practical value in light of the Chinese government's policy for sustainable development. Using hierarchical regression analysis using SPSS 22.0, the model examined the moderating effect of firm size on the SSCM practices and the sustainable performance of the firms (economic, environmental, and social), drawing data from 172 Chinese enterprises. The findings imply that the environmental and social performance of the company is positively correlated with the use of SSCM techniques and business size. The impact of SSCM techniques on economic performance is mitigated by firm size. Furthermore, major businesses' financial performance is significantly improved by SSCM internal processes; small and medium-sized businesses' (SMEs) financial performance is not as greatly affected. Firm size is identified as a moderating factor in the entire SSCM practice performance model that is proposed in this paper. SSCM is implemented and recommended for varying firm sizes based on studies on the moderating influence of firm size.

5. (Acquayea et al., 2018): "A quantitative model for environmentally sustainable supply chain performance measurement".

The current work proposes a comprehensive environmental sustainable performance measurement model supported by industrial lifecycle thinking, by utilizing the power of a Multi-Regional Input–Output framework to handle the intricate and global nature of supply chains. In an effort to address some of the methodological and applied measurement issues, some theoretical insights are thus offered and an empirical application of the model to the Metal Products industry of the BRICS (Brazil, Russia, India, China, and South Africa) nations is undertaken. This, in particular, made it possible to simulate the patterns in carbon emissions over a 20-year period (1992–2011) both within and between the BRICS countries and with the rest of the world, and it also gave rise to speculation on how well these countries will perform in terms of carbon emissions in the future. Analyses conducted specifically on the Metal Product industry revealed that the primary cause of the rising carbon footprint is demand. Nonetheless, technologically-driven efficiency gains and reductions in emissions intensity were the main causes of the overall drop in reported carbon footprint. The report also evaluates how imports and economic expansion affect carbon footprint and talks about how the findings may affect the BRICS countries' sustainable transition procedures.

6. (Somjai et al., 2019): "The Trade-off between Cost and Environmental Performance in the Presence of Sustainable Supply Chain".

Examining the trade-off between cost performance and environmental performance in the context of a sustainable supply chain is the primary goal of the current study. The study has specifically looked at the effects on costs and environmental performance of implementing sustainable supply chain practices, such as sustainable manufacturing, distribution, procurement, and reserve logistics. The question of whether or not SSCM operations may improve a firm's profitability and financial performance has been raised in the study. In the context of developing economies, research is scarce. On the other hand, a wealth of research on industrialized economies exists. Understanding how SSCM programs affect the sustainability of manufacturing in developing nations is important. It is imperative to comprehend the correlation between SSCM projects and performance in growing regions, such as Indonesia. The theoretical underpinning and hypothesis of the current investigation have been supported by the study's findings. Policymakers and practitioners will find the current study useful in understanding the problems associated with supply chain performance and the implementation of sustainable supply chains. As far as the author is aware, this is one of the very few groundbreaking works on the subject.

7. (Andalib Ardakani & Soltanmohammadi, 2019): "Investigating and analyzing the factors affecting the development of sustainable supply chain model in the industrial sectors".

Supply chains are under more pressure to be sustainable as a result of the rising demands for goods, which have a detrimental impact on the environment and society by exacerbating environmental and social disasters. Owing to the importance of sustainability, this study proposed a conceptual model based on six hypotheses in an effort to explore the factors that motivate sustainable supply chain management. 91 industry experts answered an 18-item questionnaire, and partial least squares path modeling was used to analyze the data. Path modeling results showed that green supply chain management and environmental performance management can effectively address social issues through green product creation. Furthermore, it was discovered that the green supply chain management has a direct impact on environmental performance management. As a result, several conclusions about the value of sustainable supply chain management and manager practices were made.

8. (Baliga et al., 2019): "Sustainable supply chain management practices and performance".

The goal of this research is to create an integrated study that makes use of the antecedent-activities-performance principles to identify the factors that motivate supply chain management (SSCM) practices and the effects these practices have on the performance of sustainable supply chains. The study is important because the Indian government is working hard to grow the manufacturing sector, and one of the key requirements for Indian manufacturing to remain competitive internationally is sustainability. A comprehensive literature analysis informed the development of the survey instrument, which was used to poll 211 functional heads and managers of operations and supply chains in the Indian manufacturing sector. Confirmatory factor analysis was used to validate the scales, and then Amos 20.0 structural equation modeling was used to establish the structural relationships between the components. With the exception of the relationship between LM and social practices in the SCM, the results of the SEM indicate that the antecedents, or motivators, LM and SM, have a significant impact on environmental and social practices in the SCM. These practices also have a positive relationship with SSCM performance, with acceptable goodness-of-fit measures. Therefore, it may be claimed that seven of the eight hypotheses are statistically significant.

9. (Ni & Sun, 2019): "The effect of sustainable supply chain management on business performance: Implications for integrating the entire supply chain in the Chinese manufacturing sector".

An integrative method for examining supply chain management's (SSCM) impact on company performance is presented in this study. The concept of SSCM was put forth in three dimensions: outbound, internal, and inbound sustainability. Partial least squares structural equation modeling was used to test the conceptual model within the framework of China's manufacturing industry. The findings demonstrated that whilst internal and inbound sustainability had an indirect impact on business performance, outbound sustainability had a direct relationship with it. Additionally, the model showed that the relationship between internal and outbound sustainability was strengthened by customer integration. The findings indicated that while examining the relationship between SSCM and business success, the supply-side and demand-side sustainability had distinct roles and that the complete supply chain should be integrated. The realization of demand-side value creation was the only way to attain company performance, since a supply-side collaboration advantage was important but insufficient. The results highlight the unique functions of each SSCM dimension and the significance of supply chain integration.

10. (Tran et al., 2020): "The impact of supply chain quality integration on green supply chain management and environmental performance in Vietnam's tourism industries".

This research aims to evaluate the effects of supply chain quality integration on financial performance, environmental performance, and green supply chain management. An analysis was conducted on 568 tourism-related enterprises in Vietnam. Software such as SPSS 22 and Smart PLS 3.6 were used to analyze the results. The findings demonstrate that financial performance and green supply chain management were positively impacted by supply chain quality integration. Financial and environmental performance both benefited from green supply chain management. In the relationship between supply chain quality integration and financial performance, green supply chain management also fully mediated. However, there was no moderating effect of scale or institutional pressure on the relationship between financial and environmental performance and green supply chain management.

11. (Taghipour & Beneteau-Piet, 2020): "Sustainable Supply Chain Management Performance".

More than ever, sustainable supply chain management is a crucial topic to discuss. Businesses must incorporate environmental concerns, such as global warming, into their management for a number of crucial reasons, including maintaining a positive brand image, cutting operating expenses, and complying with legal requirements. In this review, we'll examine how the literature has emphasized the idea of sustainable supply chain management (SSCM) and what approaches have been suggested to support businesses in addressing issues related to sustainable development. It will become apparent that three crucial elements must be taken into account. The literature refers to them as "the triple bottom line approach" and they include social, environmental, and economic factors. This process will be examined in order to gauge how well a business employing SSCM as a management approach performs.

12. (Narimissa et al., 2020): "Evaluation of sustainable supply chain management performance: Dimensions and aspects".

Over the last ten years, businesses have realized that in order to make their supply chains more competitive, they need to use effective methods. As a result, a sustainable supply chain perspective has evolved from the old supply chain viewpoint. Improved performance is an advantage for organizations that prioritize sustainability. Sustainability deployment is required to identify the aspects and second layer of sustainability in addition to the primary sustainability dimensions, such as the social, environmental, and economic dimensions, in order to categorize the supply chain indicators. Research has demonstrated that the distinction between the dimensions and elements of sustainability is not given due consideration in the crucial paradigm of sustainability. Consequently, taking into account the function and impact of sustainability's dimensions and features is crucial for facilitating the implementation and evaluation of sustainability. Two primary and useful goals guide the conduct of this paper. First, the literature's lack of conflicts has been highlighted by examining and identifying the dimensions and elements of sustainability. Second, based on the opinions of experts, the most crucial sustainability dimensions and elements are determined in one of Iran's oil businesses' supply chains. The findings of this study will help the researchers take sustainability into account and enhance the relevant industry policies.

13. (Isnaini et al., 2020): "Moderating Effect of Supply Chain Dynamic Capabilities on the Relationship of Sustainable Supply Chain Management Practices and Organizational Sustainable Performance: A Study on the Restaurant Industry in Indonesia".

In the current study, the relationship between SSCM practices and organizational sustainable performance (OSP) indicators—that is, "economic performance, environmental performance, social performance"—in the Indonesian restaurant industry is examined, with an emphasis on the empirical moderating effect of supply chain dynamic capabilities (SCDC). A 78% response rate was obtained by employing the basic random sample technique to gather data from the 210 supply chain managers for this purpose. The results of this study also demonstrated that SCDC considerably modifies the relationship between OSP and SSCM practices in Indonesia's restaurant business. This demonstrates that SCDC is regarded as the study's major contribution. Furthermore, adding to the body of knowledge are the theoretical and practical consequences of the current research. At the end of the study, the limitations and future directions are also highlighted.

14. (Kuwornu et al., 2023): "The adoption of sustainable supply chain management practices on performance and quality assurance of food companies".

This study looked at how food companies in Bangkok, Thailand, were able to ensure food quality and perform sustainably when they adopted sustainable supply chain management (SSCM) strategies. 126 food enterprises in Bangkok were given questionnaires to complete in order to gather primary data. To investigate the impact of both external and internal sustainable supply chain management techniques on sustainable performances, the Seemingly Unrelated Regression (SUR) method was employed. To investigate the impact of sustainable performances on the food company's quality assurance, Ordinary Least Squares (OLS) was utilized. The empirical outcome of the study showed that the financial, environmental, and social performances of the organizations are positively impacted by both internal and external SSCM strategies. Quality assurance is positively impacted by the sustainable performance metrics, which include environmental, financial, and social aspects. This report offers suggestions for Thai food companies looking to implement SSCM processes.

15. (Bentalha, 2024): "Sustainable Supply Chain Management in Tourism: An Understanding of the Prospective Possibilities of Environmental Performance".

Ensuring long-term social, economic, and environmental stability is the goal of sustainable logistics management, which promotes long-term sustainable growth. The use of sustainable logistics techniques in the management of logistics associated to tourism is being driven by the worldwide push towards sustainable development, with an emphasis on achieving environmental performance targets. As a result, the subject of tourism logistics operations is receiving more and

more theoretical and practical attention. This chapter looks at how service organizations' environmental performance is affected by sustainable tourism supply chain management. The authors examine the connection between environmentally friendly logistical methods in tourism and their impact on environmental performance using a prospective approach. The results show that the responsible supply chain in the tourism sector may function more efficiently when logistics resources are integrated, cooperative, and shared.

Research Summary:

In the past period, interest in the concept of sustainable supply chains has increased, coinciding with the growing interest in environmental issues and the role of organizations in achieving sustainable development, preserving the environment, and responding to external and internal pressures to achieve the demands of stakeholders, as competitive considerations have had a fundamental role in pushing organizations to adopt practices aimed at preserving the environment and satisfying Stakeholders, whether the organization's management, the government, customers, suppliers, or society as a whole, by achieving a high level of performance in financial, operational, and environmental aspects in order to achieve added economic value for the organization.

Sustainable supply chain management requires coordination and integration between the organization's operations and achieving strategic alignment across the supply chain in order to meet customer needs and achieve their satisfaction. The organization must be coordinated and integrated in: internal environmental management, environmentally friendly design, sustainable purchasing, sustainable manufacturing, and cooperation with customers and reverse logistics.

In light of the fact that competition has not become between individual organizations. Among them, but also between supply chains, and with the continuous increase in the need to focus on the changing requirements of customers, it is necessary to adopt a number of practices at the level of supply chains that contribute to improving the organization's performance and help reduce its operating costs and increase its market share, and since it is one of the important issues in Supply chain management is the management related to the environment. Sustainable supply chain management has emerged as a modern philosophy that helps the organization and its companies in supply chains achieve profits and increase market share by reducing environmental risks and impacts while improving environmental efficiency (Aslam et al., 2019; Bauh & Jin, 2019).

So, the current research aimed to determine the impact of economic sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia, determine the impact of Environmental sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia and determine the impact of Social sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia. The independent variable is sustainable supply chains management (Economic sustainability, Environmental sustainability, and Social sustainability) and dependent variable is environmental performance.

There are three research hypothesis there is a significant positive effect of Economic sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia, there is a significant positive effect of Environmental sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia, and there is a significant positive effect of Social sustainability on the environmental performance of Fuel stations in the Kingdom of Saudi Arabia.

The organization's commitment to implementing sustainable supply chains plays a role in reducing the cost of purchasing materials, as well as reducing the cost of energy consumption, and reducing the cost of fines that the organization bears for environmental accidents and legal claims, because sustainable supply chain practices support the application of modern marketing philosophies, the most important of which is the societal dimension orientation. In marketing, which is reflected in increasing the organization's revenues, reducing expenses and enhancing the organization's reputation in the market, which increases its profitability and thus optimal use of the organization's assets, which creates added economic value for the organization and increases its performance (Ozigbo, 2020).

The empirical outcome of the study (Kuwornu et al., 2023) showed that the financial, environmental, and social performances of the organizations are positively impacted by both internal and external SSCM strategies. Also, the findings of (Tran et al., 2020) demonstrate that financial performance and green supply chain management were positively impacted by supply chain quality integration. Financial and environmental performance both benefited from green supply chain management.

And the findings of (Ni & Sun, 2019) indicated that while examining the relationship between SCCM and business success, the supply-side and demand-side sustainability had distinct roles and

that the complete supply chain should be integrated. The realization of demand-side value creation was the only way to attain company performance, since a supply-side collaboration advantage was important but insufficient. The results highlight the unique functions of each SSCM dimension and the significance of supply chain integration.

While the findings of (Wang et al., 2018) imply that the environmental and social performance of the company is positively correlated with the use of SSCM techniques and business size. The impact of SSCM techniques on economic performance is mitigated by firm size. Furthermore, major businesses' financial performance is significantly improved by SSCM internal processes; small and medium-sized businesses' (SMEs) financial performance is not as greatly affected. Firm size is identified as a moderating factor in the entire SSCM practice performance model that is proposed in this paper. SSCM is implemented and recommended for varying firm sizes based on studies on the moderating influence of firm size.

Also, the findings of (Wang & Dai, 2018) demonstrate that a company's internal SSCM procedures improve both its social and environmental performance. Furthermore, there exists a positive correlation between economic performance and environmental and social performance. And the findings of (Esfahbodi et al., 2016) show that while adopting SSCM procedures raises environmental performance standards for Chinese and Iranian businesses, it does not always translate into better cost performance. Our findings imply that in order to minimize trade-offs between cost performance and environmental sustainability, businesses operating in emerging countries should approach SSCM programs with a more comprehensive focus on their financial bottom line.

The research concluded that the application of sustainable supply chain practices has a positive impact on environmental performance, meaning that the greater the application of sustainable supply chains, the better the environmental performance. The research recommended several recommendations, the most important of which are: the need to pay attention to the process of periodic audit and follow-up of the environmental management system, Companies should integrate awareness programs related to green waste management , The need to conduct training courses for executive management to educate them about the concept of supply chains and the extent of its impact on the manufacturing process in general and on their performance and safety, which in turn affects the company's performance, The need to make more reports on environmental

pollution data resulting from Fuel Stations due to its extreme scarcity in the responsible authorities. As the Ministry of Environment, also it is necessary to develop more regulations and legal legislation under which companies are given the right to obtain environmental management certificates.

Recommendations for future studies:

The study suggests that future research should focus on:

- Study the impact of applying sustainable supply chain management practices on improving operational and financial performance by applying it to the health sector.
- The impact of applying sustainable supply chain practices on supporting the decision-making process by the organization's management.
- Study the relationship between sustainable supply chain practices and the organization's market share.
- The role of sustainable supply chains in achieving sustainable development at the national level.
- Sustainable supply chain practices are an introduction to enhancing sustainable competitive advantage.

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