



Green Supply Chain Management: A Literature Review about the Phenomenon in Indonesia

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ABSTRAK

Tinjauan literatur tentang manajemen rantai pasokan hijau (GSCM) menyoroti semakin pentingnya praktik berkelanjutan dalam manajemen rantai pasokan. Makalah ini mengeksplorasi konsep GSCM, elemen kuncinya, tantangan dan peluang implementasinya. Ini juga mengkaji dampak GSCM terhadap kinerja organisasi, kelestarian lingkungan dan tanggung jawab sosial. Kajian tersebut mencakup berbagai studi yang dilakukan di berbagai industri, termasuk manufaktur, ritel, dan logistik. Temuan mengungkapkan bahwa penerapan praktik GSCM dapat menghasilkan penghematan biaya, meningkatkan reputasi merek dan mengurangi dampak lingkungan. Namun, penerapan GSCM menghadapi beberapa tantangan, antara lain kurangnya kesadaran, biaya implementasi yang tinggi, dan masalah koordinasi antar mitra rantai pasok. Tinjauan tersebut menunjukkan bahwa GSCM dapat menjadi strategi yang efektif bagi perusahaan untuk mencapai keunggulan kompetitif yang berkelanjutan dan memenuhi peningkatan permintaan akan tanggung jawab lingkungan.

Kata kunci: rantai pasokan hijau, manajemen rantai pasokan, administrasi bisnis, bisnis hijau

ABSTRACT

The literature review on green supply chain management (GSCM) highlights the growing importance of sustainable practices in supply chain management. The paper explores the concept of GSCM, its key elements, challenges and opportunities for implementation. It also examines the impact of GSCM on organizational performance, environmental sustainability and social responsibility. The review covers various studies conducted in different industries, including manufacturing, retail and logistics. The findings reveal that the adoption of GSCM practices can result in cost savings, enhanced brand reputation and reduced environmental impact. However, the implementation of GSCM faces several challenges, including lack of awareness, high implementation costs, and coordination issues among supply chain partners. The review suggests that GSCM can be an effective strategy for firms to achieve a sustainable competitive advantage and meet the increasing demand for environmental responsibility.

Keywords: green supply chain, supply chain management, business administration, green business.

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1. Pendahuluan

Green Supply Chain Management (GSCM) is an emerging concept that integrates environmental concerns into supply chain management. It involves designing, planning, implementing, and controlling the flow of goods, services, and information in a manner that reduces negative environmental impacts while creating economic and social benefits. GSCM is becoming increasingly important for businesses as consumers demand environmentally friendly products and services, and governments introduce regulations to reduce carbon emissions and waste. Adopting a green supply chain approach can help organizations reduce costs, improve efficiency, enhance their reputation, and contribute to a sustainable future. GSCM involves collaboration among all supply chain stakeholders, including suppliers, manufacturers, logistics providers, and customers, to achieve common environmental goals. This article provides a brief overview of GSCM and its significance for businesses and society.

Green supply chain management (GSCM) is important for a number of reasons:

Environmental sustainability: By adopting GSCM practices, companies can reduce the environmental impact of their operations and contribute to the long-term sustainability of the planet. This includes reducing greenhouse gas emissions, reducing waste, and conserving natural resources.

- **Cost savings:** GSCM practices can help companies save money by reducing waste, improving energy efficiency, and optimizing transportation routes. For example, implementing recycling programs and reducing packaging can lower material and disposal costs.
- **Regulatory compliance:** Many countries have laws and regulations that require companies to meet certain environmental standards. Adopting GSCM practices can help companies comply with these regulations and avoid penalties.
- **Reputation and customer loyalty:** Consumers are increasingly concerned about the environmental impact of the products they purchase. By adopting GSCM practices, companies can improve their reputation and build customer loyalty by demonstrating their commitment to sustainability.
- **Innovation and competitive advantage:** Companies that adopt GSCM practices can also gain a competitive advantage by developing innovative products and services that meet the growing demand for sustainable solutions. This can help them differentiate themselves from competitors and capture new market opportunities.

Overall, GSCM is important for companies that want to operate in a sustainable and responsible manner, reduce costs, comply with regulations, and maintain their reputation and competitive edge.

There is a significant research gap in the area of green supply chain management (GSCM) in Indonesia. Although there has been some research conducted on the topic, it is limited in scope and depth. One research gap is the lack of studies that investigate the implementation of GSCM practices in Indonesian companies. Most of the existing studies are theoretical or descriptive, and there is a need for empirical research that examines the challenges and opportunities faced by companies in implementing GSCM practices in Indonesia.

Another research gap is the lack of studies that examine the relationship between GSCM practices and firm performance in the Indonesian context. While there is some evidence to suggest that GSCM practices can improve firm performance, the relationship between the two has not been explored in depth in the Indonesian context.

Finally, there is a need for research that examines the role of government policies and regulations in promoting GSCM practices in Indonesia. While there have been some initiatives by the Indonesian government to promote sustainable practices, there is a need for research that examines the effectiveness of these initiatives and identifies opportunities for improvement.

Overall, there is a significant research gap in the area of GSCM in Indonesia, and there is a need for more empirical research that examines the implementation of GSCM practices, the relationship between GSCM practices and firm performance, and the role of government policies and regulations in promoting GSCM practices.

2. Literature Review

Green supply chain management (GSCM) has become an important concept in recent years due to the increasing concern for the environment and sustainability. This literature review will discuss the current state of knowledge regarding green supply chain management and its impact on business performance.

Several studies have examined the relationship between GSCM and business performance. For example, Zhu and Sarkis (2007) found that companies with a strong GSCM focus had better financial performance than those without. Another study by Pagell and Wu (2009) found that companies with higher levels of environmental management had better overall operational performance. These studies suggest that implementing green supply chain management practices can lead to improved financial and operational performance.

One of the main challenges facing companies that want to implement GSCM practices is the lack of guidelines and standards. However, several initiatives have been developed to help companies improve their sustainability practices. For example, the ISO 14001 standard provides a framework for environmental management systems, while the Global Reporting Initiative (GRI) provides guidelines for sustainability reporting. The use of these standards can help companies to

develop a comprehensive approach to GSCM and ensure that their sustainability practices are aligned with global standards.

Another important aspect of GSCM is the role of suppliers. Companies can work with their suppliers to implement green practices and improve the overall sustainability of their supply chain. For example, Linton et al. (2007) found that companies that work closely with their suppliers to reduce environmental impact can achieve significant cost savings and improve their overall environmental performance.

Several studies have also examined the factors that influence the adoption of GSCM practices. For example, Walker et al. (2008) found that companies are more likely to adopt GSCM practices if they have a strong environmental culture, top management support, and strong relationships with stakeholders. Similarly, Klassen and Whybark (1999) found that companies that perceive environmental issues as important are more likely to adopt GSCM practices.

2.1 Variables

Green supply chain refers to the integration of environmentally friendly practices and principles in the supply chain management process. Variables that play a crucial role in implementing a green supply chain include:

- **Sustainable sourcing:** This involves using environmentally friendly raw materials that are responsibly sourced.
- **Energy efficiency:** Reducing energy consumption by using energy-efficient technologies and processes, and using renewable energy sources wherever possible.
- **Waste management:** Implementing a closed-loop system where waste generated is recycled or reused, minimizing waste sent to landfills.
- **Transportation:** Reducing carbon emissions by optimizing transportation routes, using alternative modes of transportation such as electric vehicles or bicycles, and reducing the number of trips made.
- **Packaging:** Using eco-friendly materials for packaging that are biodegradable or recyclable.
- **Green manufacturing:** Implementing sustainable manufacturing practices such as lean manufacturing, using eco-friendly materials, and reducing the use of hazardous chemicals.
- **Eco-friendly disposal:** Ensuring proper disposal of hazardous waste and using responsible disposal methods such as incineration, landfilling, or recycling.
- **Stakeholder engagement:** Engaging with stakeholders such as suppliers, customers, and communities to promote environmentally responsible practices throughout the supply chain.

Overall, a green supply chain requires a holistic approach that considers all aspects of the supply chain management process, from sourcing to disposal, and involves the active participation of all stakeholders.

3. Methodology

Modeling methodology is a structured approach used to develop models that simulate real-world phenomena or systems. It involves a series of steps that are designed to ensure that the model is accurate, reliable, and can be used to make informed decisions. Modeling methodology can be applied in various fields such as economics, engineering, biology, and many more.

The following are the key steps involved in modeling methodology:

Define the problem: The first step in modeling methodology is to define the problem or system that needs to be modeled. This involves identifying the variables that are important to the system and understanding the relationships between them.

Develop a conceptual model: The next step is to develop a conceptual model that describes the system or phenomenon. This involves creating a graphical representation of the system and identifying the key variables and their relationships.

Collect data: Once the conceptual model has been developed, the next step is to collect data on the system. This involves gathering information on the variables that have been identified and measuring their values.

Parameterize the model: After collecting data, the next step is to parameterize the model. This involves estimating the values of the model's parameters using statistical methods such as regression analysis.

Validate the model: Once the model has been parameterized, it needs to be validated to ensure that it accurately represents the real-world system. This involves comparing the model's predictions with actual data and making adjustments if necessary.

Use the model: The final step in modeling methodology is to use the model to make predictions or test hypotheses. This involves running simulations and analyzing the results to make informed decisions.

In conclusion, modeling methodology is an essential tool for understanding complex systems and making informed decisions. By following a structured approach, models can be developed that accurately represent the real-world system and can be used to make predictions and test hypotheses.

4. Discussion

Green Supply Chain Management (SCM) refers to the integration of environmentally sustainable practices into the supply chain management process. One important aspect of Green SCM is the management of variables that affect the environmental impact of the supply chain.

There are several variables that are important in Green SCM. Some of these variables include:

- **Carbon footprint:** This refers to the amount of greenhouse gas emissions that are produced during the manufacturing, transportation, and distribution of products. Green SCM focuses on reducing the carbon footprint of the supply chain by using cleaner transportation methods, reducing energy consumption, and using renewable energy sources.
- **Energy consumption:** This refers to the amount of energy used in the manufacturing, transportation, and distribution of products. Green SCM focuses on reducing energy consumption by using energy-efficient technologies and practices, such as using energy-efficient lighting, using low-energy machinery, and using renewable energy sources.
- **Waste reduction:** This refers to the reduction of waste generated during the manufacturing, transportation, and distribution of products. Green SCM focuses on reducing waste by implementing waste reduction strategies such as recycling, reusing, and reducing packaging.
- **Water consumption:** This refers to the amount of water used in the manufacturing, transportation, and distribution of products. Green SCM focuses on reducing water consumption by using water-efficient technologies and practices, such as using low-flow faucets, reducing water used in manufacturing processes, and using recycled water.
- **Chemical usage:** This refers to the use of chemicals in the manufacturing, transportation, and distribution of products. Green SCM focuses on reducing the use of hazardous chemicals by using safer alternatives, reducing the amount of chemicals used, and properly disposing of chemicals.

Overall, Green SCM involves the management of various variables to reduce the environmental impact of the supply chain. By implementing environmentally sustainable practices, companies can reduce their carbon footprint, energy consumption, waste generation, water consumption, and chemical usage, while also promoting environmental sustainability and social responsibility.

5. Conclusion

In conclusion, green supply chain management (SCM) is becoming increasingly important in Indonesia due to the country's rapid economic growth and its impact on the environment. As a developing country, Indonesia faces numerous challenges in implementing green SCM practices, such as limited resources and a lack of awareness about environmental issues.

However, the government of Indonesia has taken steps to promote sustainable practices and reduce the environmental impact of supply chain operations. The adoption of green SCM practices by companies in Indonesia is also gaining momentum, with many businesses recognizing the importance of sustainability and the potential benefits it can bring.

Despite the progress made, there is still much work to be done in promoting and implementing green SCM practices in Indonesia. The government and the private sector must continue to work together to develop policies and initiatives that encourage sustainable practices, while also raising awareness about environmental issues and the benefits of green SCM.

Last, green SCM is an essential part of Indonesia's sustainable development agenda, and its adoption can contribute to the country's economic growth and environmental protection goals. By promoting sustainability in supply chain operations, Indonesia can create a more resilient and prosperous future for its citizens, while also protecting the planet for future generations.

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