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Conference Proceedings

**Nemzetközi tudományos konferencia
a Magyar Tudomány Ünnepe alkalmából**
International Scientific Conference
on the Occasion of the Hungarian Science Festival

Sopron, 2022. november 3.
3 November 2022, Sopron

**TÁRSADALOM – GAZDASÁG – TERMÉSZET:
SZINERGIÁK A FENNTARTHATÓ FEJLŐDÉSSEN**

SOCIETY – ECONOMY – NATURE: SYNERGIES IN SUSTAINABLE DEVELOPMENT

Szerkesztők / Editors:

OBÁDOVICS Csilla, RESPERGER Richárd, SZÉLES Zsuzsanna, TÓTH Balázs István

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SOPRONI EGYETEM KIADÓ

UNIVERSITY OF SOPRON PRESS

SOPRON, 2023

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Felelős kiadó / Executive Publisher: Prof. Dr. FÁBIÁN Attila,
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ISBN 978-963-334-450-7 (pdf)

DOI: [10.35511/978-963-334-450-7](https://doi.org/10.35511/978-963-334-450-7)

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Drivers and Barriers of GSCM Practices Implementation: Literature Review

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Abstract

The establishment of a Green Supply Chain (GSC) is thus a genuine strategic decision that will provide the company with long-term financial benefits. Companies that focus on product quality and sustainability can significantly improve their brand image and differentiate themselves from their direct competitors by investing in reducing their environmental impact. A thorough understanding of the factors and the barriers that influence Green Supply Chain Management (GSCM) adoption is required for the successful incorporation of green initiatives into a company's supply chain activity. Our study contributes to the literature and aims to investigate the drivers and barriers that companies face when implementing GSCM practices.

Keywords: Green Supply Chain Management, implementation, enablers, barriers, companies

JEL Codes: L60, Q01, Q57

Introduction

The implementation of GSCM in organizations enables them to achieve sustainable benefits that can be sustained in the long run as well as maximizing productivity. In light of this, numerous authors have emphasized the importance of implementing GSCM within the organization and how it is strategically relevant to address environmental concerns (Gandhi et al., 2015). Modern organizations are committed to developing sustainable industries.

An important part of GSCM is to ensure that products meet regulatory guidelines and predefined standards in an environmentally friendly manner, in which companies need to work together to find ways to resolve environmental challenges (Taghavi et al., 2021).

In order for organizations to achieve greater sustainability objectives, they must play a crucial role and show concern for the external environment, also known as 'going green' (Bansal & Roth, 2000; Tseng et al., 2019). In green thinking, things are done in a manner that considers the environment.

Studies find that research on drivers or barriers analysis of green supply chain management reveals a declining trend (Ming-Lang Tseng, 2019). In this study, we aim to fill this gap. We conducted a systematic literature review with the aim of identifying and categorizing the major factors and barriers influencing the implementation of GSCM in industry firms between 2017 and 2022.

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In chapter 1, a methodology is presented, while in chapter 2, factors and barriers related to GSCM implementation are discussed. Our findings and discussion are presented in chapter 3, and our conclusions are presented at the end.

1. Methodology

For this study, a systematic procedure was followed to collect data from reliable sources. A systematic method is employed in this study in order to retrieve data and classify the literature according to content analysis of the literature. This is done in order to identify the drivers and barriers that companies face when implementing GSCM practices.

Using the notion of the present study, a systematic method is employed to retrieve data and classify the literature based on content analysis (Figure 1). Using a similar approach inspired by (Ming-Lang Tseng, 2019), the study involved the identification of data, Examination of initial data, finally determining eligibility and inclusion of the data.

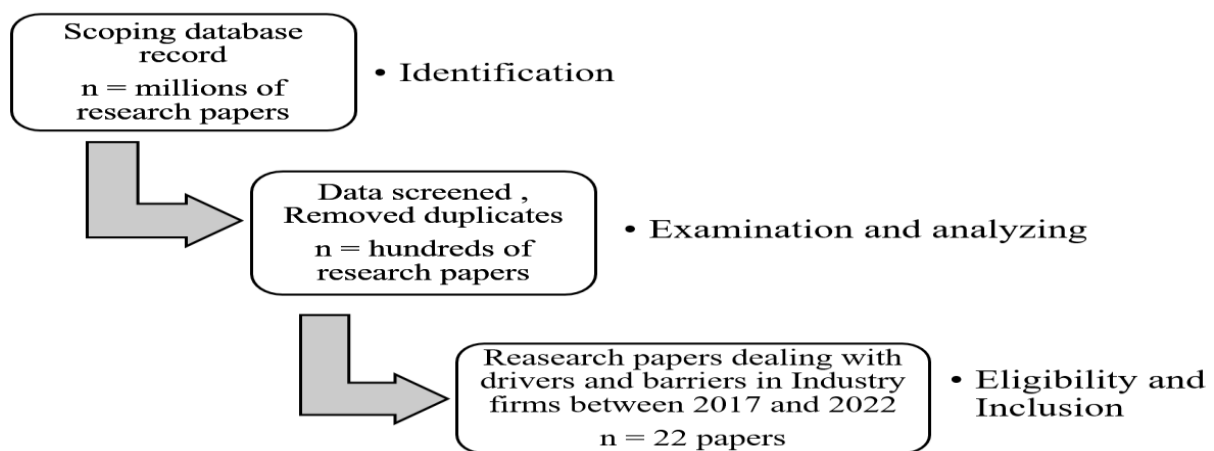


Figure 1: Analyzer diagram for study methods

Source: Own construction

Several Scopus integrated databases were used in the compiling of the data, including Emerald, Springer, and Elsevier. Among the papers covered by the search are those that were published between 2017 and 2022. In this study, terms such as 'green supply chain', 'supply chain', 'drivers', and 'barriers' are used. In the beginning, only the title and keywords of the paper were entered into the search engine. Three keyword combinations were initially used to generate millions of papers.

Then after removing duplicates in the initial search result that includes conference papers, books, and book chapters we can generate hundreds of articles, as part of our research, we are focusing on the studies that become relevant when it comes to barriers and drivers in industry firms. A total of 22 papers from influential journals were selected for this study based on their relevance and scientific merit.

2. Drivers and barriers for GSCM implementation

2.1. Drivers for GSCM implementation

There is an increasing amount of theoretical and empirical research dedicated to exploring the drivers (motivations or pressures) for adopting and applying GSCM practices.

According to our literature review, the following factors have been identified in Table 1.

Table 1: Drivers of GSCM implementation

| Drivers | Agi and Nishant (2017) | Taghavi et al. (2021) | Siddique et al. (2022) | Wang et al. (2018) | Scur and Barbosa (2017) | Muchaendepia et al. (2019) | Zhang et al. (2019) |
|---|------------------------|-----------------------|------------------------|--------------------|-------------------------|----------------------------|---------------------|
| <i>The size of the company</i> | ✓ | | | ✓ | | | |
| <i>Technical capacities</i> | ✓ | | | | | | |
| <i>Top management commitment</i> | ✓ | | ✓ | | | ✓ | |
| <i>Stakeholders behaviours</i> | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| <i>Government Regulations and Standards</i> | | ✓ | | | ✓ | ✓ | |
| <i>Financial factors</i> | | | ✓ | ✓ | | | ✓ |
| <i>Employees' education and training</i> | ✓ | ✓ | | | | | |
| <i>Monitoring performance</i> | | ✓ | | | ✓ | | ✓ |
| <i>Resource efficiency</i> | | ✓ | | | | ✓ | ✓ |

Source: Own construction

A number of researchers have studied the relationship between the factors of implementing GSCM, identifying those mentioned most frequently in the literature review and utilizing methods to determine and extract the relationship, such as ISM technique (Sage, 1977) and MICMAC analysis (Duperrin & Godet, 1973 by Agi & Nishant, 2017), they found that the level of dependence, trust, and durability of the partnership with SC partners significantly impacted the performance of the organization.

Thus A number of factors play a role in the successful implementation of GSCM practices, including the size of the organization, the top management's commitment, quality management, and the training of the employees.

As part of their analysis of the interrelationships among criteria in multicriteria decision problems (Gandhi et al., 2015) the DEMATEL method was employed (Lin, 2013) which concluded that top management commitment, technical skills of employees, and financial factors were determined to have the greatest influence on GSCM adoption success.

As it mention, there is a strong correlation between drivers and successful implementation of GSCM (Diabat & Govindan, 2011). Furthermore, Taghavi et al. (2021) demonstrate the importance of external factors in GSCM, including cooperation with suppliers, government involvement, community involvement, creating awareness and creating a culture around it.

Based on real database study taken in a study involving sustainable supply chain management (SSCM) of the Brazilian coffee industry, social responsibility, economic performance and improvement, environmental and regional regulations, and innovative business models are the main drivers (Guimarães et al., 2022).

There is also another perspective on a driver from that of Siddique et al. (2022) which focuses on different aspects such as owner's demand, commitment from top management, and pressure from customers. The authors believe that the study will serve to provide an insight into the shortcomings in energy management within the paper and pulp industries for industrialists, governmental institutions, researchers, and policymakers.

Wang et al. (2018) examined the drivers of GSCM practices, including customer and cost factors, and the results of the analysis indicated that these factors differ significantly between GSCM practices in small businesses versus large businesses in terms of cost and customer factors. The authors also confirmed that costs play an important role in GSCM when customer pressure is present. Instead of Scur et al. (2017) approved that green practices are implemented in accordance with market trends.

2.2. Barriers for GSCM implementation

Although sustainable supply chain innovation can be challenging to implement, most firms are having difficulty implementing it. These organizations face lots of barriers when attempting to innovate for sustainability. Depending on the situation, certain barriers might drive and influence other barriers, while others might do the reverse. A thorough assessment of barriers to implementing a sustainable supply chain is critical for the sector to address the issues (Govindan et al., 2013).

As shown in Figure 2, the barriers we studied are listed below. Depending on the situation, certain barriers might drive and influence other barriers, while others might do the reverse. A thorough assessment of barriers to implementing a sustainable supply chain is critical for the sector to address the issues (Govindan et al., 2013).

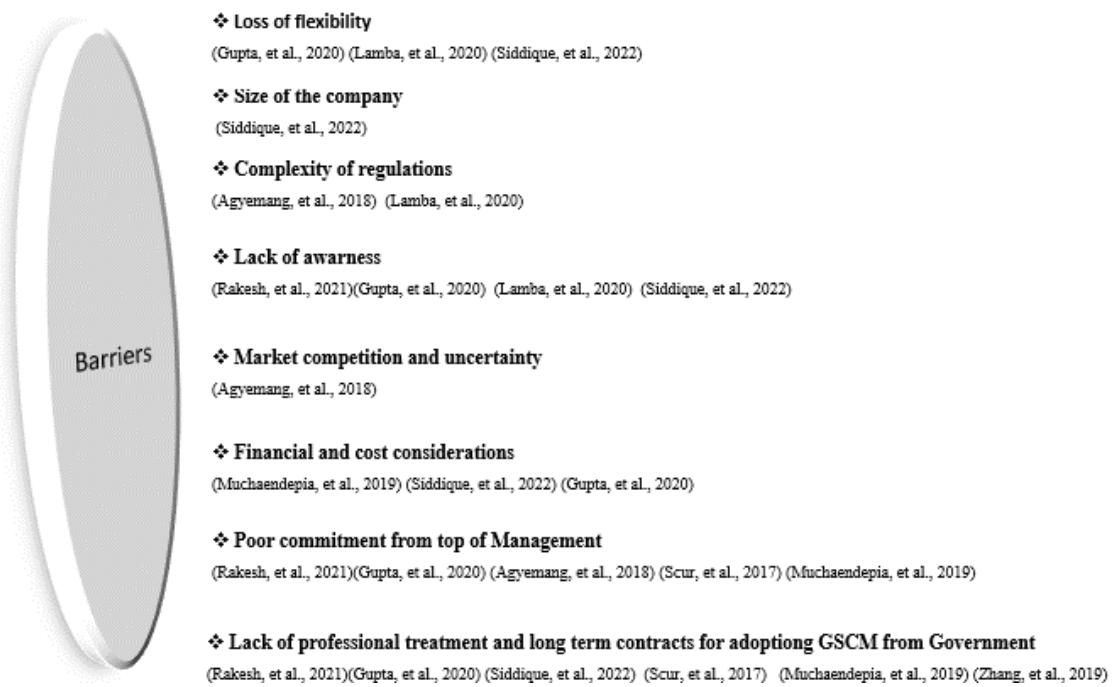


Figure 2: Barriers of GSCM implementation

Source: Own construction

The ability to think outside the box can help managers and employees make clear and rational decisions regarding technology changes and new innovations. Rakesh & Ravi (2021) analysis eleven barriers to sustainable supply chain implementation in India's electronics industry and they find that a lack of awareness of sustainability benefits, a lack of regulations and enforcement of environmental standards, and a lack of commitment from top management are significant barriers to implementing sustainable supply chains.

As another approach to barriers was presented by Agyemang et al. (2018) a robust multicriteria decision making method revealed a number of fundamental obstacles to the implementation of GSCM by the focal enterprise as well as the entire supply chain. The highest level of organization commitment, an integrated management information and traceability system, and uncertainty about economic impact must be overcome.

By utilizing the ISM model, the paper of Lamba and Thareja (2020) attempts to provide a close insight into the identified barriers, it was found that the GSCM pathway, Supplier audits by external agencies, and organizational culture are the dependence barriers that directly or

indirectly depend on each other. A total of ten barriers have been identified as linking barriers, which means that they are both drivers and dependent variables.

Several barriers are found in the study of Siddique et al. (2022), including governmental indifference, inadequate staff awareness, and a lack of capital resources to enable the adoption of energy management practices.

Instead of Scur and Barbosa (2017) revealed that Green practices, such as environmental management, are found to be associated with a higher investment cost, in part, this is due to a lack of customer awareness and pressure regarding GSCM systems.

Based on the findings of the study of Muchaendepia et al. (2019), it was determined that structural organizational changes and poor legal and regulatory frameworks negatively impacted the implementation of SSCM. In addition, Muchaendepia et al. (2019) stressed that insufficient commitment from top management to environmental responsibilities will result in businesses experiencing inconvenience in making their operations more sustainable.

3. Findings and discussion

With the growing concern about environmental impacts faced by organizations and their stakeholders, sustainability has also become an issue that has gained increasing importance over the years. Due to this, organizations strive to maintain a sustainable level.

Our study yielded Ten common drivers which are the most important factors are discussed in this literature review and eight barriers that are common across different industries.

These findings assist the organization in providing a good overview of how they and their supply chain are progressing environmentally.

A key finding of our study is that the dependence behaviour of the stakeholders seems to have a great deal of influence on GSCM implementation, highlighting the importance of customers and suppliers in the implementation of GSCM practices (Simpson et al., 2007).

Aside from that drivers related to competitors and suppliers play a significant role in the implementation of GSCM. The following is explained through supplier collaboration in the delivery of environmentally friendly products and services to the customer. At the same time, businesses all over the world are constantly looking for new and innovative ways to boost their competitiveness.

Meanwhile, one of the common barriers in various industries, financial and cost considerations, it plays an important role in the implementation of GSCM practices. This could be explained by the fact that GSCM implementation leads to cost reduction by minimizing resources and waste, which follows the main goal of companies, which is to generate higher profits while reducing costs in order to gain a competitive advantage

Organizations that operate in manufacturing or operations often face challenges in adopting, implementing, and scaling sustainability innovations. Moreover, a better understanding of the main drivers, challenges and barriers to innovating for sustainability (Saeed & Kersten, 2019; Himanshu Gupta, 2020) could therefore assist managers in driving companies and supply chains toward a more sustainability-oriented state.

4. Conclusion

The research we conducted contributes towards this understanding by revealing the structural factors influencing GSCM and the barriers to its development

There is no doubt that the GCSM model is a powerful tool that can be of great importance to companies that are seeking ways to improve the performance of their companies. Our extensive literature review identified the common barriers and drivers in literature and the challenges

they face. As a result of our results, managers gain insight into the feasibility of applying GSCM practices, thereby enhancing their ability to make informed decisions

Moreover, this research will take into account the successful implementation of GSCM in a real-world case study in an organization in the future. Future studies might also examine the barriers and drivers associated with GSCM implementation, as well as Industry 4.0.

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