

FURNITURE INDUSTRY GREEN SUPPLY CHAIN SUCCESS FACTORS: A SYSTEMATIC LITERATURE REVIEW

FAKTOR-FAKTOR PENENTU KEBERHASILAN RANTAI PASOK HIJAU DALAM INDUSTRI FURNITUR: KAJIAN LITERATUR SISTEMATIS

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ABSTRAK

Dalam beberapa tahun terakhir, *Green Supply Chain Management (GSCM)* telah mendapatkan perhatian signifikan karena tantangan yang ditimbulkan oleh perubahan iklim, yang sebagian besar dipicu oleh aktivitas manusia dan emisi berbahaya. Industri furnitur memiliki potensi besar untuk penerapan GSCM, namun menghadapi tantangan, termasuk biaya tinggi, rendahnya kesadaran lingkungan, dan dukungan pemerintah yang terbatas. Penelitian ini bertujuan untuk mengidentifikasi faktor keberhasilan kritis (CSFs) untuk penerapan GSCM di industri furnitur. Menggunakan metodologi *Systematic Literature Review (SLR)*, artikel-artikel dari Scopus dan Google Scholar dianalisis untuk mengidentifikasi CSFs utama. Enam CSFs ditemukan yaitu komitmen manajemen, investasi dalam teknologi dan kolaborasi, keterlibatan pemangku kepentingan, strategi keberlanjutan lingkungan, regulasi dan insentif lingkungan, serta penilaian dan pemantauan kinerja. Penelitian ini menyoroti pentingnya pendekatan komprehensif, dengan merinci langkah-langkah penting untuk penerapan GSCM, seperti pengembangan strategi, adopsi praktik ramah lingkungan, serta pemantauan dan evaluasi yang berkelanjutan. Selain itu, penelitian ini menekankan integrasi pembelian hijau, manajemen lingkungan internal, dan pembentukan kemitraan kolaboratif dengan pemangku kepentingan. Evaluasi rutin sangat penting untuk melacak kemajuan, memastikan keselarasan dengan tujuan keberlanjutan, dan mengidentifikasi area untuk perbaikan. Temuan ini memberikan kontribusi pada literatur GSCM dengan menawarkan wawasan praktis dan rekomendasi bagi perusahaan furnitur, seperti melakukan analisis SWOT, menetapkan tujuan keberlanjutan yang jelas, berkolaborasi dengan pemasok ramah lingkungan, dan memastikan dukungan dari manajemen puncak. Temuan ini memberikan panduan berharga bagi industri furnitur untuk mencapai keberlanjutan, meningkatkan efisiensi, dan memperkuat daya saingnya di pasar global.

Kata kunci: faktor keberhasilan kritis, industri furnitur, Manajemen Rantai Pasok Hijau (GSCM), Tinjauan Literatur Sistematis (SLR),

ABSTRACT

In recent years, *Green Supply Chain Management (GSCM)* has gained significant attention due to the challenges posed by climate change, primarily driven by human activities and harmful emissions. The furniture industry presents considerable potential for GSCM adoption but faces challenges, including high costs, low environmental awareness, and limited government support. This study aimed to identify critical success factors (CSFs) for GSCM implementation in the furniture industry. Using a *Systematic Literature Review (SLR)* methodology, articles from Scopus and Google Scholar were examined to identify key CSFs. Six CSFs were found management commitment, investment in technology and collaboration, stakeholder involvement, environmental sustainability strategy, environmental regulations and incentives, and performance assessment and monitoring. The study highlighted the importance of a comprehensive approach, outlining essential steps for GSCM implementation, such as strategy development, green practice adoption, and ongoing monitoring and evaluation. Additionally, it emphasized integrating green purchasing, internal environmental management, and forming collaborative partnerships with stakeholders. Regular evaluations were critical to track progress, align with sustainability objectives, and identify areas for improvement. The study contributes to the GSCM literature by offering practical insights and recommendations for furniture companies, including conducting a SWOT analysis, setting clear sustainability goals, collaborating with eco-friendly suppliers, and securing top management support. These findings provide valuable guidance for the furniture industry to achieve sustainability, improve efficiency, and enhance competitiveness in the global market.

Keywords: critical success factors, furniture industry, Green Supply Chain Management (GSCM), Systematic Literature Review (SLR)

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INTRODUCTION

The global furniture industry faces growing pressure to reduce its environmental impact, as traditional manufacturing heavily depends on unsustainable timber extraction, a key driver of deforestation and climate change. Deforestation contributes 2.6 billion tons of CO₂ emissions annually, accounting for 6.5% of global emissions, mainly due to land-use changes in tropical regions. With CO₂ emissions projected to reach 41.6 billion tons in 2024—37.4 billion from fossil fuels—the industry's reliance on unsustainable practices worsens this crisis. Additionally, the annual felling of 15 billion trees, driven by agriculture, logging, and urban expansion, further threatens biodiversity and accelerates greenhouse gas emissions (Parvin *et al.*, 2025).

To address increasing environmental and regulatory pressures, adopting Green Supply Chain Management (GSCM) has become essential for the furniture industry's long-term sustainability. GSCM integrates environmental considerations across the supply chain, from raw material sourcing to product disposal (Susanty *et al.*, 2019). By implementing GSCM principles, companies can reduce environmental impact, enhance efficiency, improve brand reputation, and gain a competitive edge in a sustainability-focused market (Harsono *et al.*, 2023).

In practice, implementing GSCM not only contributes to industry sustainability but also encompasses a series of strategies aimed at reducing overall environmental impact. GSCM manages the entire supply chain with a sustainability focus, aiming to reduce carbon emissions, waste, and resource consumption while maximizing efficiency. Key principles include emission reduction, energy efficiency, supply chain redesign, and green technology adoption (Khan *et al.*, 2023). Reducing emissions and improving energy efficiency directly mitigate environmental impacts, while low-carbon supply chain networks and advanced green technologies are crucial for achieving sustainability goals (Abbasi and Choukolaei, 2023).

Unlike conventional supply chain models, GSCM represents a paradigm shift by embedding sustainability principles at every stage of the process. GSCM differs from traditional supply chains by integrating environmental sustainability throughout the entire process. While traditional models focus on cost reduction and profit, GSCM equally prioritizes emissions, waste, and resource efficiency (Khan *et al.*, 2023). It also fosters collaboration among stakeholders—suppliers, manufacturers, and consumers—to achieve shared sustainability goals, unlike traditional supply chains that emphasize competition. Transparency, a key GSCM feature, ensures openness in sharing environmental performance data, often lacking in conventional models (Teixeira *et al.*, 2020).

Recognizing these advantages, the furniture industry has increasingly embraced GSCM to mitigate environmental impact while enhancing competitiveness. The furniture industry is increasingly adopting GSCM to reduce environmental impact and enhance competitiveness. Companies like PT. Assana Konsult in Indonesia use recycled materials, reduce energy consumption, and adopt eco-friendly packaging, lowering costs and strengthening their eco-friendly reputation (Syafira and Suwitho, 2022). IKEA ensures all wood products are sustainably certified and integrates renewable materials, aiming for climate positivity by 2030 (Laurin and Fantazy, 2017). PT. Sinar Dunia implements a closed-loop recycling system, refurbishing used furniture to minimize waste and enhance resource efficiency (Wahyuni *et al.*, 2024). These initiatives highlight GSCM's benefits for both sustainability and market advantage.

However, the successful implementation of GSCM depends on several Critical Success Factors (CSFs) that ensure its long-term effectiveness. For GSCM to achieve lasting environmental sustainability, identifying Critical Success Factors (CSFs) is essential. These include management commitment, supplier engagement, IT integration, and employee participation (Chiappetta *et al.*, 2017). Without them, companies may struggle to maximize GSCM's benefits. Other key CSFs, such as top management support, integrating environmental strategies into business plans, and consumer demand for eco-friendly products, further drive successful adoption (Teixeira *et al.*, 2020).

Despite its benefits, GSCM implementation in the furniture industry, especially in developing countries, faces challenges such as limited access to green technologies, inadequate resources, and lack of knowledge on sustainability. Many manufacturers lack the infrastructure and expertise needed for full adoption. Identifying CSFs and addressing these barriers is crucial for effective GSCM strategies. Research in this area can help companies overcome these challenges and transition to more sustainable supply chains (Tachizawa *et al.*, 2015).

To better understand these challenges and the factors that contribute to successful GSCM adoption, this study employs a Systematic Literature Review (SLR). This study uses a Systematic Literature Review (SLR) to identify Critical Success Factors (CSFs) for GSCM implementation in the furniture industry. By synthesizing existing research, it aims to provide a comprehensive overview, highlight knowledge gaps, and guide future studies. The findings will contribute to GSCM literature and offer insights for policymakers to develop strategies supporting a sustainable furniture industry (Andriani, 2021).

RESEARCH AND METHODS

This study employed the Systematic Literature Review (SLR) method to identify Critical Success Factors (CSFs) for GSCM implementation in the furniture industry. The SLR aimed to summarize existing literature on this topic through three main steps, using Scopus and Google Scholar as primary data sources.

Article Selection Criteria

The article selection process applied systematic filtering techniques to ensure relevance and quality. Initial Search: Keyword searches using “Green Supply Chain” and “Green Supply Chain Furniture” in Scopus and Google Scholar captured a broad range of GSCM-related studies.

Inclusion Criteria: Selected articles focused on GSCM implementation or CSFs in the furniture industry, were published in peer-reviewed journals or conferences, and prioritized research from the last 10 years for recent insights.

Exclusion Criteria: Studies unrelated to GSCM or CSFs, non-peer-reviewed sources, duplicates, or those lacking substantial contributions were excluded (Adwiyah *et al.*, 2021).

Article Selection Process

The selection process was conducted as follows:

- Scopus Database: An initial search using “Green Supply Chain” and “Green Supply Chain Furniture” yielded 82 articles. Title relevance filtering reduced this to 9, and after abstract analysis, 4 were deemed relevant.
- Google Scholar Database: The same search produced 516 articles, narrowed to 16 based on title relevance. Abstract review further refined the selection to 7. In total, 11 articles were selected from both databases (Nekmahmud *et al.*, 2020). The selection process is illustrated in Figure 1.

Analysis Technique

A detailed content analysis was conducted to examine the Critical Success Factors (CSFs) for GSCM implementation in the furniture industry. This analysis aimed to identify key drivers, barriers, and enablers influencing successful adoption and sustainability outcomes. To achieve this, the study employed a structured review process, categorizing findings based on recurring themes and commonalities across the literature. The CSFs considered in this analysis, which formed the foundation of the CSF framework, included:

- Leadership – The importance of top management in driving sustainability and fostering an environmentally responsible culture.
- Funding and Resources – Availability of financial and material resources to implement GSCM strategies.
- Stakeholders – Involvement of suppliers, manufacturers, distributors, consumers, and regulators in promoting sustainable practices.
- Planning – Strategic integration of GSCM principles into corporate policies and long-term business objectives.
- Regulation and Governance – Compliance with environmental laws, policies, and standards.
- Evaluation – Mechanisms for assessing GSCM performance and continuous improvement (Agrawal *et al.*, 2023).

The primary objectives of this analysis were to:

- Identify essential GSCM components for effective implementation in the furniture industry.
- Assess the role of internal and external factors in shaping GSCM adoption.
- Examine the benefits of GSCM, such as operational efficiency, regulatory compliance, and competitive advantage.

Offer insights to decision-makers on overcoming barriers and optimizing sustainability practices in the supply chain (Gao *et al.*, 2024).

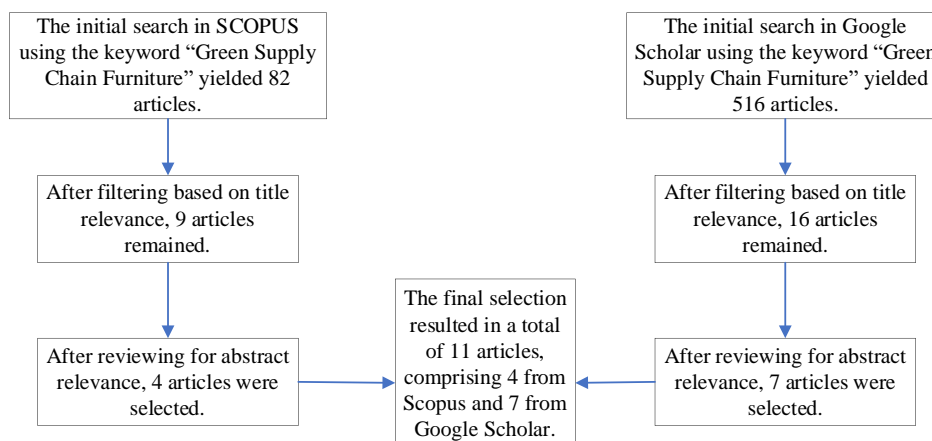


Figure 1 Article selection and filtering stages

The study analyzed several critical components for successful GSCM adoption, including:

- a. Sustainable Raw Material Sourcing: Ensuring the use of certified, renewable, or recycled materials.
- b. Eco-Friendly Manufacturing: Adopting energy-efficient processes and waste reduction methods.
- c. Green Logistics: Reducing carbon emissions by optimizing transportation and supply chain networks.
- d. End-of-Life Product Management: Promoting recycling, refurbishing, and circular economy practices.
- e. Stakeholder Collaboration: Encouraging transparency and cooperation among supply chain actors to align sustainability goals (Agrawal *et al.*, 2023).

Adopting GSCM in the furniture industry offers several benefits:

- a. Environmental: Significant reduction in deforestation, carbon emissions, and waste generation.
- b. Economic: Cost savings through energy efficiency and optimized resource use.
- c. Regulatory Compliance: Easier adherence to environmental laws and certifications.

- d. Competitive Advantage: Enhanced brand image and consumer trust.
- e. Innovation and Growth: Fostering research and development in green technologies (Hiloidhari *et al.*, 2023).

This study provides valuable insights for businesses, policymakers, and stakeholders seeking to transition toward more sustainable supply chains.

Data Collection

Data was collected by extracting key findings from selected articles on CSFs in GSCM implementation, analyzing their impact on success or failure in the furniture industry. Each article was thoroughly reviewed for accuracy and relevance (Agrawal *et al.*, 2023). The final step involved developing actionable strategies for effective GSCM implementation based on the identified CSFs.

RESULTS AND DISCUSSION

A systematic literature review identified 11 journal articles on GSCM implementation in the furniture industry. The findings, summarized in Table 1 and Table 2, highlight key Critical Success Factors (CSFs) influencing GSCM adoption.

Table 1. Scopus article selection results

No.	Author and Year	Review CSFs
1	(Hapsari <i>et al.</i> , 2021) Proceedings of the International Conference on Industrial Engineering and Operation Management	The successful implementation of GSCM in the furniture industry includes integrating environmental management practices throughout the supply chain, encompassing product design, supplier selection, material procurement, manufacturing processes, packaging, delivery, and end-product management. Companies need to apply the core principles of ISO 14001 to manage environmental management systems, with a focus on operational analysis, continuous improvement, measurement, and setting goals and programs. GSCM analysis can enhance process innovation, continuous improvement, and alignment with negotiation policies with suppliers and customers.
2	(Likumahwa <i>et al.</i> , 2019) IOP Conf. Series: Materials Science and Engineering	The key success factors for implementing GSCM in the furniture industry include several main elements: effective internal environmental management by senior and middle managers, green purchasing practices to reduce hazardous substances and promote recycling, collaboration with customers to enhance environmental performance through green product development, eco-friendly design throughout the product and packaging lifecycle, and investment recovery through recycling and resale of unused materials, components, and products.
3	(Djunaidi <i>et al.</i> , 2018) AIP Conf. Proc. Human-Dedicated Sustainable Product and Process Design: Material, Resources and Energy	The key success factors for implementing GSCM in Indonesia's furniture industry involve major elements such as the influence of environmentally conscious consumer behavior, strong support from top management for strategic decisions and GSCM policies, and the integration of environmental principles into organizational strategy. Additionally, regulatory factors, economic benefits, competitive conditions, cost reduction, supplier behavior, reverse logistics, and societal demands are also crucial to the successful implementation of GSCM in the furniture industry.
4	(Susanty <i>et al.</i> , 2016) The 6th International Conference on Sustainable Energy Information Technology (SEIT 2016)	The key success factors for implementing GSCM in the furniture industry include utilizing GIS technology to connect wood waste producers with buyers, developing applications through the Software Development Life Cycle (SDLC), conducting studies in strategic locations such as Jepara and Surakarta, and integrating SMEs and waste collectors to optimize collection and transportation. Data quality, reliability, and user skills with the application are also crucial for the effectiveness of GSCM in the furniture industry, contributing to sustainable environmental goals.

Table 2. Google scholar article selection results

No.	Author and Year	Review CSFs
1	(Li, 2022) Thesis Submitted Rangsit University	The success factors for GSCM implementation in this thesis are linked to three main aspects: technological innovation capability, strong operational performance, and robust environmental support.
2	(Juliandina <i>et al.</i> , 2022) International Journal of Accounting, Finance and Business (IJAFB)	This study identifies key factors for the successful implementation of GSCM in Indonesia's wood furniture industry, especially among SMEs. These factors include environmental leadership by top management, interdepartmental and stakeholder collaboration, clear company policies, green innovation initiatives in eco-friendly product development and manufacturing processes, and collaboration with customers for eco-friendly design, production, and packaging. Government support through policies, certifications, and financial and technical assistance is also critical in GSCM implementation.
3	(Susanty and Sari, 2018) 5 th International Conference on Industry Engineering and Application	The successful implementation of GSCM in the wood furniture industry in Central Java, Semarang, is supported by top management's commitment to fostering cross-departmental and organizational collaboration. Engagement of all parties within the supply chain, including suppliers, customers, and partners, is crucial, focusing on environmentally friendly practices such as green design, production, packaging, and energy-efficient transportation. The adoption of ISO 14001 standards supports a structured environmental management system, while strong internal environmental management, green purchasing practices, eco-design, and reverse logistics strategies enhance the effectiveness of GSCM by enabling investment recovery.
4	(Djunaidi <i>et al.</i> , 2018) Jurnal Teknik Industri	The factors driving GSCM adoption in Indonesia's wood furniture industry include environmentally conscious consumer behavior, top management support in policy setting, sustainable organizational strategies, and supportive government regulations. Economic benefits, such as reduced production costs and enhanced corporate image, as well as market competition encouraging the use of eco-friendly materials and efficiency, also play significant roles. Supplier involvement and commitment, the implementation of reverse logistics for waste management, and societal demands for environmental sustainability are also key driving factors.
5	(Susanty <i>et al.</i> , 2017) Proceedings of the World Congress on Engineering	The success factors for GSCM implementation include Internal Environmental Management (IEM), Green Purchasing (GP), Customer Cooperation (CC), Eco-Design (ECO), and Investment Recovery (IR). IEM is crucial for small SMEs focused on indoor and outdoor furniture, with management commitment to environmental sustainability. GP positively impacts medium-sized SMEs producing indoor furniture through the selection of environmentally friendly suppliers. CC enhances environmental performance across all types of SMEs by fostering customer cooperation in eco-friendly design and production. ECO is effective for small SMEs producing indoor furniture, as it considers environmental impact from the product design stage. IR supports all types of SMEs with reverse logistics and recycling to reduce waste and create added value.
6	(Arnold V, 2016) Master Degree Project	This study identifies key factors for the successful implementation of a green supply chain at IKEA, including transparency and communication with customers through various media, a focus on product aspects by integrating sustainability into quality and design, committed support from top management, essential employee training, supply chain integration through reverse logistics practices, sustainable sourcing, and transportation efficiency. Additionally, green marketing enhances the company's reputation and appeals to environmentally conscious customers.
7	(Tseng <i>et al.</i> , 2019) Resources, Conservation and Recycling	The success factors for implementing a green supply chain include transparency and communication with customers through various media, emphasis on product quality, functionality, and sustainability, strong commitment and support from top management along with employee training, supply chain integration with reverse logistics practices, sustainable procurement, and transportation efficiency, as well as green marketing to build the company's reputation and attract environmentally conscious customers. The success of SSCM at IKEA is also supported by a thorough understanding of business processes, management commitment, sustainable procurement and production, reverse logistics, collaboration with customers and suppliers, and environmental certifications like ISO 14001, as demonstrated in a furniture factory in Brazil through the Business Process Management (BPM) approach.

Analysis of 4 Scopus and 7 Google Scholar articles identified key factors for GSCM success. According to (Agrawal *et al.*, 2023), five essential values—Leadership, Resource Allocation, Stakeholder Collaboration, Planning, and Regulation and Governance—drive successful implementation. Evaluation is also crucial for measuring and improving sustainability efforts. These CSFs are detailed below.

Leadership

Strong top management commitment is crucial for integrating sustainability across the supply chain. Leadership ensures sustainability in product design, supplier selection, and end-product management (Lestari and Dinata, 2019). According to (Juliandina *et al.*, 2022) highlight the need for management support in green innovation, including eco-friendly design and sustainable material sourcing. Furthermore, (Djunaidi *et al.*, 2018) emphasize using recyclable materials and designing for end-of-life recycling. A sustainability-focused culture enhances competitiveness and meets the rising demand for green products.

Founding dan Resource

Effective GSCM implementation requires adequate financial and technological investment. Companies must allocate resources for digital tools like Geographic Information Systems (GIS) to connect wood waste producers and buyers, improving waste management (Herdiansyah *et al.*, 2021). Energy management systems and renewable energy adoption are essential for reducing manufacturing emissions (Hapsari *et al.*, 2021). Sourcing materials from sustainably managed forests mitigates deforestation and ensures responsible procurement (Likumahwa *et al.*, 2019). Additionally, investing in employee training enhances competency in sustainability technologies. Prioritizing resource efficiency and innovation minimizes environmental impact, improves operations, and strengthens supply chain performance (Adek, 2024).

Stakeholder

Successful GSCM adoption requires collaboration among government agencies, suppliers, customers, and NGOs. Government support is crucial, with policies like tax incentives facilitating green transitions (Susanty *et al.*, 2016). Environmental regulations and certifications, such as ISO 14001, ensure compliance and sustainability integration. Green marketing and consumer education shape demand for eco-friendly furniture. Transparency and open communication build stakeholder trust, promote participation, and drive GSCM success (Karimi and Rahim, 2015).

Planning

Strategic planning is crucial for aligning supply chain activities with sustainability goals.

(Djunaidi *et al.*, 2018), emphasize green purchasing, selecting eco-friendly raw materials, and implementing waste reduction measures to minimize environmental impact. Reverse logistics further enhances sustainability by enabling recycling and repurposing of furniture products. Integrating sustainability into long-term business strategies ensures regulatory compliance and improves supply chain efficiency. Embedding these principles into corporate planning fosters environmental responsibility while maintaining a competitive edge in an eco-conscious market (Laguir *et al.*, 2021).

Regulation and Governance

Government regulations are vital for GSCM success, setting environmental standards on emissions, waste management, and sustainability certifications like ISO 14001 and FSC (Pradana *et al.*, 2024). According to (Hapsari *et al.*, 2021), highlight financial incentives for green technology adoption, making sustainability initiatives more feasible. Public awareness campaigns also drive consumer demand for eco-friendly products, encouraging businesses to adopt sustainable practices. Combining regulations, financial support, and education creates a favorable environment for sustainable supply chains.

Evaluating

Evaluation is crucial for measuring GSCM effectiveness, identifying improvements, and ensuring sustainability goals are met. Key aspects include assessing environmental impact (energy use and waste reduction), economic benefits (cost savings and efficiency), and social impact (worker well-being and community sustainability) (Manik *et al.*, 2019). According to (Li, 2022), emphasizes data-driven evaluation for informed decision-making. Furthermore, (Susanty and Sari, 2018) highlight the importance of regular assessments to refine strategies and maintain alignment with sustainability objectives.



Figure 2. Diagram of CSFs for GSCM in the furniture industry

Based on the five CSFs for GSCM implementation (Figure 2), the following steps

outline an effective strategy for the furniture industry. Derived from the Systematic Literature Review (SLR), these steps ensure successful adoption and long-term sustainability (Gao *et al.*, 2024).

Define the GSCM Strategy

The first step in GSCM implementation is defining a strategy through a SWOT analysis to assess strengths, weaknesses, opportunities, and threats. This helps set clear sustainability objectives, such as reducing emissions, improving resource efficiency, and enhancing environmental reputation. Companies must then select GSCM practices that align with their goals, including green purchasing, eco-design, and investment recovery (Li, 2022).

Implement GSCM Practices

Once the strategy is defined, companies must implement GSCM by developing policies on green purchasing, waste management, and sustainability. Employee training is essential for effective execution, while strong supplier partnerships ensure sustainable material sourcing and responsible production. Additionally, businesses should communicate their GSCM commitment to customers, reinforcing sustainability in purchasing decisions (Susanty *et al.*, 2017).

Monitor and Evaluate

Once GSCM practices are in place, it is essential to monitor and evaluate their effectiveness. This involves regularly collecting and analyzing data on GSCM performance to assess whether the implemented strategies align with sustainability objectives. By leveraging this data, companies can adjust and refine their strategies to improve performance and achieve long-term sustainability goals (Tseng *et al.*, 2019).

Continuous Improvement

Sustainability requires ongoing enhancement based on monitoring and evaluation. Companies should foster a culture of innovation, adopting new technologies, practices, and partnerships to improve GSCM performance (Arnold Veronika, 2016). Prioritizing continuous development helps businesses achieve sustainability goals and maintain a competitive edge (Yusianto *et al.*, 2020).

Obtain Top Management Support

Another key element in successful GSCM implementation is obtaining top management support. Leadership commitment is crucial in ensuring that companies allocate sufficient resources, provide clear policies, and continuously drive environmental initiatives. Without strong support from senior management, sustainability efforts may face resistance or lack the necessary funding for long-term execution (Likumahwa *et al.*, 2019).

Consider Consumer Behavior

Beyond internal efforts, businesses must also consider consumer behavior when implementing GSCM. Understanding consumer preferences for eco-friendly products can help companies tailor their sustainability strategies more effectively. Educating consumers about the added value of green products—such as durability, non-toxic materials, and reduced carbon footprint—can increase demand and customer loyalty (Djunaidi *et al.*, 2018).

Manage Costs and Economic Benefits

GSCM implementation requires cost analysis to balance sustainability and profitability. Evaluating financial impacts helps identify benefits such as lower production costs, increased efficiency, and revenue growth from sustainability-driven innovation (Susanty *et al.*, 2016). Companies must ensure environmental initiatives remain financially viable without creating excessive burdens (Maghfiroh *et al.*, 2023).

Manage Reverse Logistics

One of the critical aspects of a sustainable supply chain is reverse logistics management. Companies should develop an efficient system for product returns, recycling, and reuse to minimize waste and extend the product lifecycle. By adopting reverse logistics strategies, businesses can create an additional revenue stream through product recycling, remanufacturing, or resale of reclaimed materials (Djunaidi *et al.*, 2018). This approach not only reduces environmental impact but also contributes to circular economy principles.

Comply with Regulations and Standards

Additionally, compliance with regulations and environmental standards is a fundamental requirement for GSCM implementation. Businesses must ensure that they adhere to local and international environmental laws while obtaining certifications such as FSC and ISO 14001 to demonstrate their commitment to sustainability. Achieving these certifications not only ensures legal compliance but also enhances brand credibility in the eyes of consumers and stakeholders (Likumahwa *et al.*, 2019).

Consider Competition

A company's sustainability strategy should also consider competition by analyzing the GSCM strategies of industry leaders and competitors. Identifying market trends and best practices allows businesses to differentiate themselves and develop a competitive advantage through superior sustainability initiatives (Susanty *et al.*, 2017). Companies that proactively adopt innovative green solutions are more likely to stay ahead in the rapidly evolving market.

Engage Stakeholders

Effective GSCM implementation requires active communication with employees, suppliers, customers, and the community. Collaboration fosters a shared commitment to sustainability, driving innovation and long-term success (Djunaidi *et al.*, 2018). By following these structured steps, furniture

companies can integrate GSCM, ensuring environmental sustainability, economic efficiency, and business resilience. Figure 3 illustrates this approach, highlighting strategic alignment, continuous improvement, and stakeholder involvement.

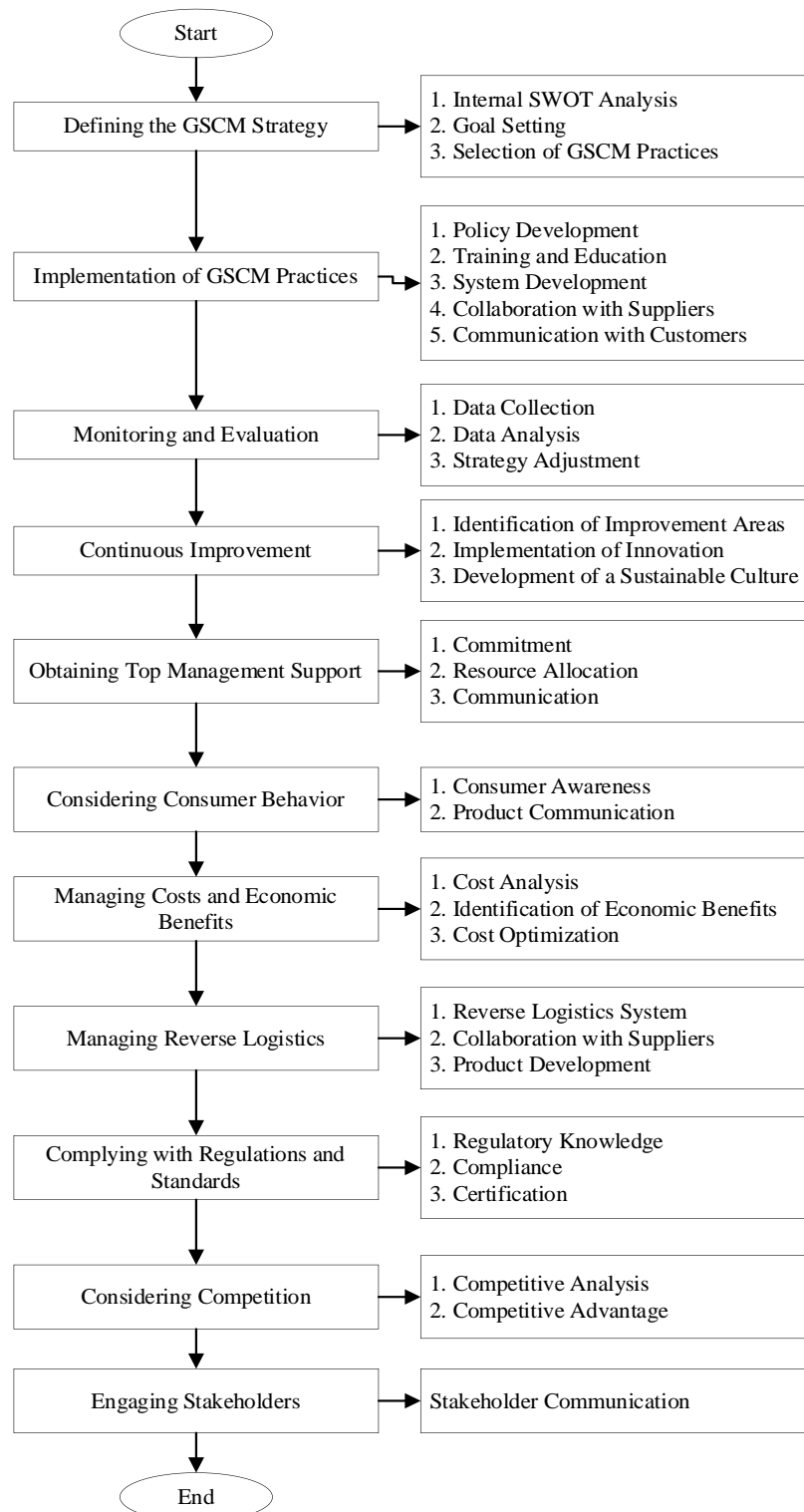


Figure 3. Steps for implementing GSCM in the furniture industry based on SLR results

The studies in Table 1 and Table 2 highlight critical success factors (CSFs) for GSCM in the furniture industry, including top management commitment, green purchasing, eco-design, reverse logistics, and government support. Research conducted by (Hapsari *et al.*, 2021) and (Likumahwa *et al.*, 2019), emphasize ISO 14001 in environmental management, while collaboration with suppliers and customers is crucial for improved sustainability. Furthermore, the role of technology in supporting GSCM implementation is well-documented, as seen in (Susanty *et al.*, 2017), who discuss the use of Geographic Information Systems (GIS) to connect wood waste producers with buyers, and (Li, 2022), who highlights technological innovations that improve operational performance and sustainability.

Despite valuable insights, current research on GSCM lacks empirical evidence and case studies demonstrating real-world applications. For example, (Hapsari *et al.*, 2021) and (Susanty *et al.*, 2017) highlight green purchasing and eco-design but provide limited guidance on practical implementation within complex supply chains. Additionally, most studies focus on large enterprises or specific regions, such as Indonesia or multinational firms like IKEA, reducing their generalizability. SMEs, which face financial and technological constraints, remain underrepresented in GSCM literature (Plaza-Úbeda *et al.*, 2020).

Further compounding this issue, many studies overlook the practical challenges that companies encounter when attempting to implement GSCM. Factors such as financial limitations, resistance to change, and a lack of skilled workforce are mentioned briefly but not explored in depth. This gap in research suggests the need for more detailed investigations into how these barriers affect GSCM implementation, particularly in resource-constrained environments such as SMEs (Maghfiroh *et al.*, 2023). (Huang *et al.*, 2024) point out that overcoming these obstacles requires strategic planning, stakeholder engagement, and policy support, yet few studies provide clear recommendations on how businesses can effectively address these challenges.

Building on these concerns, several key research gaps remain unaddressed, highlighting the need for further exploration. Several key research gaps remain. First, there is a lack of longitudinal studies on the long-term impact of GSCM implementation, which could provide insights into the sustainability of success factors (Kulkarni and Sharma, 2024). Second, more research is needed on how SMEs, especially in developing economies like Indonesia, overcome challenges in adopting GSCM. Third, while consumer behavior influences sustainability, its role in GSCM adoption is underexplored. Understanding consumer preferences is crucial for shaping effective supply chain strategies (Yadav *et al.*, 2024).

Despite limitations, the reviewed studies provide a strong foundation for understanding CSFs in GSCM implementation within the furniture industry. Addressing research gaps—such as the need for empirical evidence, SME challenges, and consumer behavior—will enhance the practical application of GSCM strategies. Comprehensive case studies can offer actionable insights for integrating GSCM into supply chains, yielding environmental and economic benefits (Puryono and Pati, 2017). Additionally, strong GSCM commitment enhances corporate reputation and provides a competitive edge in a sustainability-driven market (Intari and Khusnah, 2023). Companies that adopt sustainable supply chain practices ensure long-term growth while positioning themselves as industry leaders. Moving forward, businesses that successfully integrate GSCM will contribute to global sustainability and gain a strategic advantage in an evolving, eco-conscious marketplace (Jaya *et al.*, 2021).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study identifies the critical success factors (CSFs) for the implementation of Green Supply Chain Management (GSCM) in the furniture industry through a Systematic Literature Review (SLR). Six key factors were found: management commitment, investment in technology and collaboration, stakeholder involvement, environmental sustainability strategy, environmental regulations and incentives, and performance assessment and monitoring. The findings highlight the importance of a comprehensive approach to GSCM, which includes clear strategy development, the adoption of green practices, and continuous monitoring and evaluation. The study also emphasizes the need for further research on empirical evidence, challenges faced by Small and Medium Enterprises (SMEs), and the impact of consumer behavior on GSCM adoption. The results provide practical insights for practitioners in the furniture industry to achieve sustainability, enhance operational efficiency, and strengthen their competitive position in the global market.

Recommendations

To enhance sustainability and competitiveness in the furniture industry, companies should adopt Green Supply Chain Management (GSCM) by conducting a SWOT analysis, setting clear objectives like emission reduction and resource efficiency, and implementing practices such as internal environmental management and green purchasing. Effective implementation requires policies, employee training, monitoring systems, and collaboration with eco-friendly suppliers. Future research should focus on longitudinal studies to track the long-term impact of GSCM, case studies to explore real-world

applications, and surveys to understand consumer behavior and its influence on GSCM adoption. Comparative studies across industries, technological integration (AI, blockchain, IoT), and evaluations of government policies are also essential. Methodologically, researchers should use longitudinal designs, case studies, surveys, and focus groups, along with policy analysis and pilot studies on emerging technologies, to address these gaps and provide practical, actionable insights for improving sustainability practices in the sector.

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REFERENCES

- Abbasi S and Ahmadi CH. 2023. A systematic review of green supply chain network design literature focusing on carbon policy, *Decision Analytics Journal*. 6(1):1-16.
- Adek BA. 2024. Pengaruh Green Supply Chain Management (GSCM) Terhadap Economic Performance Pada Industri Otomotif Dimoderasi Green Information System (GIS). *Sang Pencerah: Jurnal Ilmiah Universitas Muhammadiyah Buton*. 10(2): 526-540.
- Adwiyah R, Syaikat Y, Indrawan DR, Mulyati H. 2021. A Systematic Literature Review: Green Supply Chain Management Performance of Palm Oil Products. *Conference Towards ASEAN Chairmanship 2023 (TAC 23 2021)*. Bogor, Indonesia. 17 Desember 2021.
- Agrawal V, Mohanty PR, Agarwal S, Dixit KJ, Agrawal MA. 2023. Analyzing critical success factors for sustainable green supply chain management. *Environment, Development and Sustainability*. 25(8): 8233-8258.
- Andriani W. 2021. Penggunaan metode sistematik literatur review dalam penelitian ilmu sosiologi. *Jurnal PTK dan Pendidikan*. 7(2): 1-5.
- Arnold V and Katharina. 2016. Combination of Sustainable Supply Chain Management and Green Marketing: Customer Expectations in Furniture Retail. [Master Theses]. Göteborg: University of Gothenburg.
- Chiappetta J, Mauricio LA, and Jabbour BA. 2017. Critical success factors and green supply chain management proactivity: shedding light on the human aspects of this relationship based on cases from the Brazilian industry. *Production Planning & Control*. 28(6): 671-683.
- Djunaidi M, Sholeh AA, and Mufiid MN. 2018. Identifikasi faktor penerapan green supply chain management pada industri furniture kayu. *Jurnal Teknik Industri*. 19(1): 1-10.
- Djunaidi M, Sholeh AA, and Mufiid MN. 2018. Analysis of green supply chain management application in Indonesian wood furniture industry. *AIP Conference Proceedings*. Surakarta, Indonesia. 13-14 Desember 2017.
- Gao S, Liu, Yankui, Liu Y. 2024. Designing robust green sustainable supply chain network by bi-objective optimization method. *International Journal of General Systems*. 53(4): 453-484.
- Harsono YD and Alhazami L. 2023. Pengaruh strategic orientation, government regulation dan green economy terhadap green supply chain management pada PT. Heinz ABC Indonesia. *Jurnal Riset Rumpun Ilmu Ekonomi*. 2(2):64-81.
- Hapsari WP, Santoso H, and Nurkertamanda D. 2021. SCOR and ANP Methods for Measuring Supplier Performance with Sustainability Principle of Green Supply Chain Management in Furniture Company PT. XYZ. *Proceedings of the International Conference on Industrial Engineering and Operations Management*. Sao Paulo, Brazil. 5-8 April 2021.
- Herdiansyah IM, Syamsuar D, and Syazili A. 2021. Analisis pengembangan sistem informasi green supply chain pengerajin jumpitan berbasis demand driven. *Journal of Information Systems and Informatics*. 3(4): 662-672.
- Hiloidhari M, Sharmo M, and Baruah D. 2023. Green and sustainable biomass supply chain for environmental, social and economic benefits. *Biomass and Bioenergy*. 175(1): 68-93.
- Huang X, Tan BL, and Ding X. 2015. An exploratory survey of green supply chain management in Chinese manufacturing small and medium-sized enterprises: Pressures and drivers. *Journal of Manufacturing Technology Management*. 26(1): 80-103.
- Intari AP and Khusnah H. 2023. Pengaruh green innovation terhadap kinerja keuangan dengan kinerja lingkungan sebagai mediasi: sektor industri pada IDX-IC Tahun 2017-2021. *Jurnal Ilmiah Akuntansi dan Keuangan*. 12(2) : 149-160.
- Jaya R, Yusriana Y, and Fitria E. 2021. Review manajemen rantai pasok produk pertanian berkelanjutan: konseptual, isu terkini, dan penelitian mendatang. *Jurnal Ilmu Pertanian Indonesia*. 26(1): 78-91.
- Juliandina M, Cheilliah S, and Yin TS. 2022. Green Supply Chain Management (GSCM) affecting an organization's sustainability performance in Indonesia Wooden furniture industry. *International Journal of Accounting*. 7(45):11-41.
- Khan M, Ajmal M, and Jabeen F. 2023. Green supply chain management in manufacturing firms: A

- resource-based viewpoint. *Business Strategy and the Environment*. 32(4): 1603–1618.
- Karimi A and Rahim KA. 2015. Classification of external stakeholders pressures in green supply chain management. *Procedia Environmental Sciences*. 30(1): 27–32.
- Kulkarni M and Sharma S. 2024. Implementation of green supply chain management practices. *International Research Journal Of Engineering & Applied Sciences*. 12(1): 49–54.
- Laguir I, Stekelorum R, and El-Baz J. 2021. Going green? Investigating the relationships between proactive environmental strategy, GSCM practices and performances of third-party logistics providers (TPLs). *Production Planning & Control*. 32(13): 1049–1062.
- Laurin F and Fantazy K. 2017. Sustainable supply chain management: a case study at IKEA. *Transnational Corporations Review*. 9(4): 309–318.
- Lestari F and Dinata RS. 2019. Green supply chain management for evaluating environmental management based on ISO 14001 Certificates. *Industria: Jurnal Teknologi dan Manajemen Agroindustri*. 8(3): 209–2017.
- Li J. 2022. Influence of green supply chain management on the performance of China furniture production company. *Journal of Buddhist Education and Research*. 9(4): 299–311.
- Likumahwa FM, Purwaningsih R, and Handayani NU. 2019. The Influence of green supply chain management on company's performance and competitiveness in wood furniture industry: An overview of conceptual model. *IOP Conference Series: Materials Science and Engineering*. Jeju Island, South Korea. 25-27 Agustus 2020.
- Nekmahmud MD, Rahman S, Sobhani AF, Olejniczak-Szuster K, Fekete-Farkas M. 2020. A systematic literature review on development of green supply chain management. *Polish Journal of Management Studies*. 22(1):351–370.
- Manik RD, Lumbamtoruan SR, and Nasution AA. 2019. Faktor pendorong dan penghambat penerapan green supply chain management. *talenta conference series: energy and engineering (EE)*. Medan, Indonesia. 18-20 Juli 2019.
- Maghfiroh N, Marimin, Bantacut T, Anggraeni E. 2023. Sustainable value of rice supply chain: a systematic literature review and research agenda. *Jurnal Teknologi Industri Pertanian*. 33(1): 70–95.
- Parvin M, Shadhin M, and Dulal M. 2025. Harnessing cattail biomass for sustainable fibers and engineered bioproducts: A Review. *Global Challenges*. 9(1): 183–208.
- Plaza-Úbeda JA, Abad-Segura E, de Burgos-Jiménez J, Boteva-Asenova A, Belmonte-Ureña LJ. 2020. Trends and new challenges in the green supply chain: The reverse logistics. *Sustainability*. 13(1): 331–349.
- Puryono AD and Kurniawan YS. 2017. Penerapan model green supply chain management untuk meningkatkan daya saing UMKM Batik Bakaran. *SPEED-Sentra Penelitian Engineering Dan Edukasi*. 9(3): 1–9.
- Pradana IGMT, Djatna T, Hermadi I, Yuliasih I. 2024. Model of integrated assessment layer for implementation readiness of blockchain-based traceability system. *Jurnal Teknologi Industri Pertanian*. 34(2): 127–139.
- Syafira N and Suwitho S. 2022. Penerapan green supply chain management pada pemilihan pemasok dengan analisis network proses. *Jurnal Ilmu dan Riset Manajemen (JIRM)*. 11(1): 1–18.
- Susanty A, Sari DP, Budiawan W, Sriyanto, Kurniawan H. 2016. Improving green supply chain management in furniture industry through internet based geographical information system for connecting the producer of wood waste with buyer. *International Conference on Sustainable Energy Information Technology*. Madrid, Spain. 23-26 May 2016.
- Susanty A, Santoso S, Sari DP, Parasayu S. 2017. Effect of internal green supply chain practices on environmental performance of smes of wooden furniture industry. *Proceedings of the World Congress on Engineering*. London, Inggris. 5-7 July 2017.
- Susanty A and Sari DP. 2018. Exploring the implementation of green supply chain with cluster and discriminant analysis: case study: furniture industry at Central Java Semarang. *International Conference on Industrial Engineering and Applications (ICIEA)*. National University of Singapore, Singapore. 26-28 April 2018.
- Susanty A, Sari DP, Rinawati ID, Purwaningsih R, Sjawie HF. 2019. Policy making for GSCM implementation in the wooden furniture industry: a dematel and system dynamics approach. *Management of Environmental Quality: An International Journal*. 30(5): 925–944.
- Tachizawa ME and Wong CY. 2015. The performance of green supply Chain management governance mechanisms: A supply network and complexity perspective. *Journal of Supply Chain Management*. 51(3):18–32.
- Teixeira AA, Moraes TE, Stefanelli NO, Caldeira JH, Teixeira BT, Freitas WR. 2020. Green supply chain management in latin america: systematic literature review and future directions.

- Environmental Quality Management*. 30(2):47–73.
- Tseng, Ming-Lang, Shamimul M, Karia N, Fauzi F A, Afrin N. 2019. A literature review on green supply chain management: Trends and future challenges. *Resources, Conservation and Recycling*. 141(1): 145-162.
- Wahyuni D, Fauzi M, and Winaryanto A. 2024. Penerapan green warehouse dalam menghadapi era society 5.0 guna mendukung konsep eco friendly. *Indonesian Conference of Maritime*. Serang, Indonesia. 1 Maret 2024.
- Yadav P and Yadav O. 2024. A study on green supply chain management system: drivers and challenges in SME. *International Journal of Management*. 15(1): 294-307.
- Yusianto R, Marimin M, Suprihatin S, Hardjomidjojo H. 2020. IOT Based smart agro-industrial technology with spatial analysis. *Jurnal Teknologi Industri Pertanian*. 30(3): 319–328.