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Developing Green Supply Chain Towards Sustainable Economic Development: Evidence from Vietnam's Food Processing Industry

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KEYWORDS

Green supply chain management, food processing industry, institutional pressure, sustainable development, regression analysis.

ABSTRACT

The study investigates the determinants and impacts of green supply chain management (GSCM) in Vietnam's food processing sector, an industry characterized by rapid growth and increasing environmental pressure. From a survey of 103 firms, the research employs regression analysis to investigate the effects of technological capability, human resource capability, and institutional pressure on GSCM implementation, as well as the influence of GSCM on aspects regarding economic, environmental, and social. The results reveal that institutional pressure is the most significant driver of GSCM implementation (β=0.356), followed by technological capability and human resource capability. Furthermore, GSCM significantly enhances firm performance, with the strongest effect observed lied in environmental outcomes (β=0.563). Despite the growing research on GSCM, existing studies have mainly focused on developed economies or general manufacturing sectors, leaving a great gap in empirical evidence regarding the food processing industry in developing economies.

These findings support the sustainable perspective, suggesting that environmental practices simultaneously improve operational efficiency and competitiveness. The paper contributes to literature by providing empirical evidence from a developing country and offers practical implications for policymakers as well as firms seeking to promote sustainable supply chain transformation.

1. Introduction

Sustainable development has become a crucial priority for both industries and governments in recent years. As a developing economy, Vietnam has guaranteed to attain net-zero carbon emissions by 2050, positioning substantial pressure on main sectors to shift toward greener production. Food processing segment is considered one of these industries due to its significant contribution to economic growth progress.

Recent report indicates that the industry reached an estimated value of approximately USD 79.4 billion in 2024 with annual average growth rate of 7-10% (Chi & Huyen, 2025), reflecting its expanding role in both domestic and export markets. However, this industry is associated with huge water consumption, intensive energy usage and great waste creation. The growing demand from international markets for environmentally production and stricter environmental regulations has further strengthened the necessity for using sustainable practices within supply chain.

The strategy of using green supply chain management (GSCM) enables firms to enhance operational effectiveness while reducing

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environmental impacts across the entire value chain. By integrating environmental considerations into procurement, production, distribution, and consumption activities, green supply chains contribute to both corporate competitiveness and broader sustainability objectives.

Regarding food processing industry, production - distribution - consumption activities continue to follow primarily linear models, with insufficient integration among raw material suppliers, manufacturers, logistics providers, and distribution systems. This structure leads to resource inefficiency, higher operating costs, and increased environmental burdens, hence undermining long-term competitiveness and sustainability.

Existing limitations include the absence of unified green supply chain standards, inadequate incentive mechanisms for enterprise-level transformation, low adoption of environmentally friendly technologies, and fragmented policy support frameworks. These obstacles highlight the need for systematic research that evaluates the recent state of green supply chain execution as well as proposes solutions tailored to the specific conditions of Vietnam's food processing industry.

This study directs to tackle these challenges by (1) analysing the determinants of GSCM implementation, (2) evaluating the impact of these factors on firm performance, and (3) providing policy and managerial implications for sustainable development.

2. Literature review

2.1. Green supply chain management

Green Supply Chain Management (GSCM) is an approach that incorporates environmental attention into supply chain activities, including eco-friendly production, green procurement, and reverse logistics. In terms of economic and environmental outcomes, GSCM contributes to social sustainability, including improved corporate reputation, stakeholder trust, and employee well-being. These impacts are increasingly recognized as critical components of long-term sustainable strategies (Handoyo, 2024). Later studies emphasize that implementing GSCM methods reduces environmental impacts and improves operational efficiency and competitive advantages.

In recent years, industry 4.0 technologies with the emerging of Internet of Things (IoT), AI, big data, have enhanced the firms' ability to control and optimize resource utilization in real time, thereby reinforcing the effectiveness of green logistics systems (Challouf et al., 2025). Besides, further evidence suggests that research on GSCM has increasingly focused on barriers, drivers, as well as green innovation, indicating a shift toward more systemic approaches (Cheng et al., 2024).

2.2. Determinants of GSCM implementation

Firstly, technological capability is identified as a crucial element of GSCM adoption. Empirical studies show that firms with higher digital maturity are more likely to apply green supply chain successfully (Sundarakani et al., 2024). Indeed, advanced digital systems allow enterprises to reduce waste, optimize logistics operations, and monitor environmental performance effectively.

The second key element is human resources. Environmental awareness, training, and managerial commitment considerably influence the employment of GSCM. As stated by Gelagay & Werke (2024), skilled employees are better equipped to apply eco-friendly procedures and adapt to sustainability requirements.

Furthermore, institutional pressure is also should be considered, that suggesting how organizations respond to regulatory and market demands. In developing countries, government policies, international standards, customer expectations are major drivers of green supply chain employment. Mentioned by Nguyen et al. (2025), institutional pressure often has a stronger influence than internal capabilities, specifically in export-oriented industries where compliance with global standards is compulsory.

2.3. Green supply chain practices in food processing industry

Food processing industry has attracted more attention in GSCM research due to its remarkable environmental footprint and complex supply chain structure. Recent studies highlight that integrating green logistics into food supply chains can significantly reduce environmental risks while maintaining product quality and safety (Chen et al., 2024).

Unlike other manufacturing industries, food supply chains are highly sensitive to the perishable nature of products, strict safety requirements. To address these issues, the cold-chain logistics system is an effective approach in minimizing food loss and environmental impacts. As mentioned by Jaelani et al. (2025), advanced cold-chain solutions not only ensure product freshness but also mitigate waste and energy consumption across the supply chain. In addition, collaborating with upstream suppliers and downstream distributors can ensure traceability, quality assurance, and compliance with environmental standards.

Furthermore, the adoption of GSCM in the food processing sector is increasingly supported by digital technologies. To be more specific, IoT and data analyses enable real-time temperature monitor, transportation conditions, and emissions control, thus enhancing both operational efficiency and environmental performance (Muniba et al., 2026).

Despite possible advantages, empirical evidence states that the utilization of GSCM in food processing industry are uneven. According to Samad et al. (2021), large export-oriented firms are generally more proactive in implementing green practices due to stronger regulatory pressure and international market requirements, whereas small and medium-sized enterprises confront greater constraints related to financial capacity, technological access, and managerial expertise.

2.4. Barriers to green supply chain development in developing economies

As mentioned by Jaelani et al. (2025), the lack of infrastructure and technological readiness such as inadequate cold-chain logistics remain the primary challenges in adopting green solutions. Numerous developing countries have fragmented logistics systems and limited access to advanced technologies, which restrict their ability to implement efficient green practices.

Secondly, financial constraints are also a major barrier. The large investment required for green technologies, including energy-efficient equipment and digital monitoring systems, discourages firms from utilizing GSCM practices (Muniba et al., 2026). This is further exacerbated by limited access to green financing and government support.

Institutional and policy-related difficulties are equally important. Weak enforcement of environmental regulations, fragmented policy frameworks, and limited coordination among government agencies reduce incentives for firms to adopt green solutions (Nguyen et al., 2025). These obstacles are specifically noticed in transitional economies, where rapid industrial development often outpaces the establishment of effective environmental governance mechanisms.

Additionally, the complexity of food supply chains poses significant challenges for green methods implementation. The multi-tier of global food supply networks makes coordination difficult and increases the risk of inefficiencies. Recent analyses emphasize that supply chain complexity can hinder the use of sustainable practices, particularly when stakeholders have conflicting priorities (Mohseni et al., 2022).

Finally, cultural and organizational conflict to change remains a persistent obstacle. Enterprises may concentrate on short-term economic gains rather than long-term sustainable goals, especially in highly competitive markets.

2.5. Research gap

Although research related to GSCM has expanded over the past decade, several significant gaps remain. First, most studies have primarily focused on developed economies, where environmental awareness and technological infrastructure are advanced. By contrast, empirical evidence from developing countries is limited, including food processing industry.

Second, existing research has emphasized on conceptual models or qualitative cases, with lack of use quantitative methods to recognize the relationships between sustainability and GSCM practices outcomes. The inadequate statistical analysis restricts the ability to provide robust policy implications.

Moreover, while some studies have explored how digital technologies facilitating sustainability, there is a lack of analysis combining technological, organizational, and institutional factors within a unified analytical framework. Specifically, the interaction between policy support, human resource and digital readiness in shaping GSCM utilization has not been fully addressed.

In addition, the features of food processing industry include high quality standards, perishable inputs, complex logistics requirements, particularly cold-chain infrastructure. Nevertheless, there is little attention from current research to this sector, with insufficient studies examining opportunities and challenges of using green logistics in this context.

Thereby, it is necessary to investigate the adoption of green supply chain methods in Vietnam's food processing industry, evaluate environmental and economic influences, recognize critical barriers and factors affecting the conversion to sustainable logistics process. By combining theoretical synthesis with empirical analysis, the paper seeks to deliver insights that are both academic relevant and practically applicable.

3. Research methodology

3.1. Sample selection

This paper uses sampling approach combining stratified, purposive, and convenience techniques to ensure both representativeness and feasibility in data collection. The stratified sampling was employed based on firm size (small, medium, and large firms) and geographical area to represent structural differences across Vietnamese food processing sector. To be more detailed, the survey enterprises are distributed with the proportion as large firms 34%, medium firms 41% and small firms 25%.

Besides, purposive sampling aims to select respondents with relevant expertise and authority in green supply chain activities. These include senior managers, department heads, and officers who are directly participated in logistics and environmental management. The respondent structure is described as below:

Table 1. Respondent structure

Position	Percentage
Directors / Vice Directors	27.2%
Department Managers	43.7%
Technical / Environmental Officers	29.1%

Finally, the use of convenience sampling facilitates the access to firms due to data availability constraints, which is a common challenge in emerging economy research contexts. To mitigate potential bias because of this barrier, the sample was strictly filtered to ensure respondents held senior managerial or technical positions with direct oversight of sustainable activities. Second, the use of stratified sampling across firm sizes (Large: 34%, Medium: 41%, Small: 25%) ensured that the findings are not skewed toward a single enterprise category but reflect the diverse structure of Vietnam's food processing field.

3.2. Sample size

There are 103 valid responses from food processing enterprises across Vietnam. Although this size seems to be modest, it is considered acceptable for regression-based analysis. As stated by Hair et al. (2019), the minimum sample size should be at least 5-10 observations per variable. This study contains 6 main variables, the required size ranges from 30 to 60 observations, thus the current sample (n=103) satisfies statistical requirements. Moreover, similar research in GSCM literature conducted in developing countries often employ sample sizes ranging from 80 to 150 due to data collection restrictions (Dubey et al., 2018).

Given the limitations related to sample size, the analysis emphasizes pattern identification and practical interpretation rather than causal inference or advanced modelling techniques.

The survey was conducted through a structured questionnaire from January 2025 to October 2025. The five-point Likert scale was applied, from 1 "strongly disagree" to 5 "strongly agree". The questionnaire was delivered through direct email, professional networks and industry associations, on-site visits in key industrial zones. Additionally, to enhance the response reliability, the respondents were assured of confidentiality and only one response per firm was accepted.

3.3. Hypothesis development

Based on the integration of GSCM and the Resource Based View (RBV), the paper constructs green supply chain implementation as a multidimensional concept influencing sustainable outcomes (Gelagay & Werke, 2024; Muniba et al., 2026)

Firstly, technological capability is a critical enabler of GSCM practices. Advanced technologies support real-time monitoring, energy efficiency, and emissions tracking, thereby improving environmental performance.

H1: Technological capability has a positive effect on the level of GSCM implementation.

Secondly, human resources is a critical component in implementing green solutions through knowledge, environmental awareness, and managerial commitment.

H2: Human resource capability positively influences GSCM implementation.

Thirdly, institutional pressures, including environmental regulations, incentives, and international market requirements (e.g., ESG standards), significantly drive firms toward greener practices.

H3: Government policy and institutional pressure positively affect GSCM implementation.

Fourthly, green practices can reduce operational costs through energy savings, waste reduction, and improved efficiency, thereby enhancing economic performance.

H4: GSCM implementation positively impacts economic performance.

Fifthly, GSCM directly contributes to environmental improvements by reducing emissions, waste, and resource consumption.

H5: GSCM implementation positively impacts environmental performance.

Sixthly, green supply chains enhance corporate reputation, stakeholder trust, and employee satisfaction.

H6: GSCM implementation positively impacts social performance.

3.4. Research model

The proposed model is illustrated in Figure 1, with independent variables comprise Technological Capability (TECH), Human Resource Capability (HR), Institutional Pressure (INST). Besides, the mediating variable is GSCM Implementation (GSCM), whereas the dependent variables include performance towards Economic (ECO), Environmental (ENV), Social (SOC).

Finally, the use of convenience sampling facilitates the access to firms due to data availability constraints, which is a common challenge in emerging economy research contexts. To mitigate potential bias because of this barrier, the sample was strictly filtered to ensure respondents held senior managerial or technical positions with direct oversight of sustainable activities. Second, the use of stratified sampling across firm sizes (Large: 34%, Medium: 41%, Small: 25%) ensured that the findings are not skewed toward a single enterprise category but reflect the diverse structure of Vietnam's food processing field.

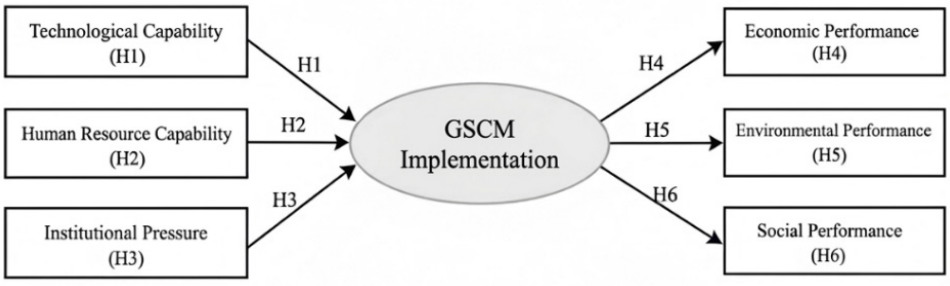

Figure 1. Research model

To examine the proposed hypotheses, multiple regression models were utilized.

- Model 1: Determinants of GSCM

$GSCM = \beta0 + \beta1TECH + \beta2HR + \beta3INST + \varepsilon$

- Model 2: Impact of economic performance

$ECO = \beta0 + \beta1GSCM + \varepsilon$

- Model 3: Impact of environmental performance

$ENV = \beta0 + \beta1GSCM + \varepsilon$

- Model 4: Impact of social performance

$SOC = \beta0 + \beta1GSCM + \varepsilon$

Table 2. Measurement scale and variable operationalization

Construct	Code	Measurement Items	Source
Technological Capability (TECH)	TECH1	The firm adopts digital technologies (e.g., IoT, ERP) in logistics operations	Marchi et al. (2019); Sundarakani et al. (2024)
	TECH2	The firm has systems to monitor energy consumption and emissions	
	TECH3	The firm applies technology to optimize transportation routes	
	TECH4	The firm invests in green or energy-efficient technologies	
	TECH5	The firm uses digital platforms to coordinate supply chain activities	
Human Resource Capability (HR)	HR1	Employees are trained in environmental management practices	Gelagay & Werke (2024); Samad et al. (2021)
	HR2	Managers actively support green supply chain initiatives	
	HR3	The firm has dedicated staff for sustainability management	
	HR4	Employees are aware of green logistics practices	
Institutional Pressure (INST)	INST1	Government regulations encourage green practices	Marchi et al. (2019); Watson et al. (2022)
	INST2	Customers require environmentally friendly products/logistics	
	INST3	Business partners promote green supply chain standards	
	INST4	The firm faces pressure to comply with environmental certifications	
GSCM Implementation (GSCM)	GSCM1	The firm implements green procurement practices	Samad et al. (2021); Zhu et al. (2013)
	GSCM2	The firm adopts environmentally friendly production processes	
	GSCM3	The firm applies green packaging solutions	
	GSCM4	The firm optimizes transportation to reduce emissions	
	GSCM5	The firm engages in reverse logistics or recycling activities	
	GSCM6	The firm collaborates with partners on environmental initiatives	
Economic Performance (ECO)	ECO1	Green practices reduce operational costs	Samad et al. (2021); Green et al. (2012)
	ECO2	The firm improves resource efficiency	
	ECO3	Profitability improves due to GSCM adoption	
	ECO4	The firm gains competitive advantage	
Environmental Performance (ENV)	ENV1	The firm reduces greenhouse gas emissions	Marchi et al. (2019); Zhu et al. (2013)
	ENV2	The firm reduces waste generation	
	ENV3	The firm reduces energy consumption	
	ENV4	The firm improves environmental compliance	
Social Performance (SOC)	SOC1	The firm improves employee health and safety	Samad et al. (2021); Niranjan et al. (2025)
	SOC2	The firm enhances corporate reputation	
	SOC3	The firm contributes to community well-being	

4. Research results

4.1. Reliability and validity analysis

The study uses SPSS with reliability, correlation, and regression analyses were conducted. To solve potential Common Method Bias (CMB) resulting from self-reported data collected at a single point in time, Harman's single-factor test was also carried out. It is revealed that the first element accounted for lower 40% of the total variance, which is under 50% threshold, suggesting that CMB is not a significant concern. Furthermore, Cronbach's Alpha coefficients for all variables (Table 3) surpassed the suggested threshold of 0.7, showing strong internal consistency.

Table 3. Cronbach's Alpha results

Variable	Items	Cronbach's Alpha
TECH	5	0.842
HR	4	0.815
INST	4	0.861
GSCM	6	0.878
ECO	4	0.845
ENV	4	0.826
SOC	3	0.804

The exploratory Factor Analysis (EFA) show that KMO = 0.812 (> 0.6) and Bartlett's Test $p < 0.001$, thus these results confirm that validity of variables.

Additionally, all correlations are significant at $p < 0.01$, suggesting suitability for regression analysis. The correlation results among variables are presented as below, indicate significant positive relationships.

- TECH and GSCM: r = 0.61
- HR and GSCM: r = 0.58
- INST and GSCM: r = 0.64

4.2. Regression analysis

The regression results (Table 4) indicate that institutional pressure (β=0.356) has the strongest impact on GSCM implementation, followed by technological (β = 0.312) and human resource capability (β = 0.271).

Table 4. Determinants of GSCM

Variable	Beta	t-value	Sig.
TECH	0.312	3.84	0.000
HR	0.271	3.21	0.001
INST	0.356	4.52	0.000

Table 5. Impact of GSCM on performance

Model	Dependent Variable	Beta	t-value	Sig.	R^2
Model 2	ECO	0.487	6.21	0.000	0.41
Model 3	ENV	0.563	7.02	0.000	0.47
Model 4	SOC	0.428	5.11	0.000	0.36

Moreover, GSCM significantly improves firm performance, particularly environmental performance (β = 0.563), subsequently by economic (β = 0.487) and social performance (β = 0.428).

Besides, ANOVA results indicate significant differences in GSCM implementation across firm sizes with F = 4.87, p = 0.009. Large firms exhibit higher adoption levels due to better financial resources and stronger regulatory exposure. The level of implementing green supply chain activities is provided in following table.

Table 6. Level of implementation of green supply chain activities by enterprise size

Activity	Large enterprise (n=35)	Medium enterprise (n=42)	Small enterprise (n=26)	Total (n=103)
Green purchasing	78.1%	54.3%	27.8%	56.5%
Green production	71.9%	48.6%	22.2%	50.6%
Green distribution	65.6%	37.1%	16.7%	42.4%
Reverse logistics	43.8%	22.9%	11.1%	28.2%
Waste management	81.3%	62.9%	38.9%	63.5%

5. Discussion

This study outlines empirical evidence in terms of determinants and impacts of GSCM in Vietnamese food processing industry. First, the consequences reveal that institutional pressure is the most important element of GSCM application, supporting the argument of institutional theory that firms are strongly influenced by regulatory frameworks, market expectations, and international standards. It is consistent with recent studies focusing on the significant role of external pressures in emerging economies (Nguyen et al., 2025). In Vietnam, where many food processing firms are export-oriented, compliance with environmental standards imposed by internal and global markets acts as a primary motivation for adopting green supply chain practices.

Nevertheless, the GSCM implementation is highly uneven. Large firms show significantly higher adoption in areas like waste management (81.3%) compared to small firms (38.9%). This disparity is most evident in reverse logistics (11.1% for small firms), highlighting

that while institutional pressure is felt by all, small and medium enterprises (SMEs) lack the financial and technological capacity to close the loop in their supply chains. This suggests that without targeted financial support, institutional pressure alone may lead to a green gap between large corporations and SMEs.

Second, technological capability has a positive influence on GSCM implementation, highlighting the importance of digital transformation in enabling sustainable logistics. This result aligns with recent research showing that advanced technologies enhance the visibility of supply chain and environmental performance (Muniba et al., 2026). However, the relatively moderate influence suggests that technological implementation in Vietnam is constrained by high investment and limited infrastructure, particularly in cold-chain systems.

Third, human resource capability also positively influences GSCM utilization, highlighting that employee awareness and managerial commitment are essential for converting sustainable strategies to operational practices. This finding reinforces that internal organizational capabilities are necessary to complement external pressures and technological investments.

Furthermore, GSCM significantly improves economic, environmental, and social performance, providing empirical support for the "win-win" argument in sustainability literature. In particular, the positive impact on economic performance suggests that green practices can create cost savings through enhanced efficiency and waste reduction. In the meantime, environmental benefits are reflected in reduced emissions and resource consumption, whereas social performance is enhanced through improved corporate reputation and stakeholder trust.

Overall, the results suggest that while GSCM offers significant benefits, its successful implementation in developing countries requires a balanced combination of institutional support, technological investment, and human resource development.

6. Policy implications and limitations

6.1. For policymakers

Firstly, the government should strengthen regulatory frameworks and enforcement mechanisms to promote green supply chain practices. Clear environmental standards, particularly in emissions and waste management, can generate strong incentives for firms to apply GSCM.

Secondly, policymakers should introduce targeted financial support mechanisms, such as tax incentives, green subsidies, and preferential loans, to reduce the financial burden in sustainable technologies. This is particularly important for SMEs, which usually face resource constraints.

Thirdly, for food industry, green logistics infrastructure should be prioritized to reduce post-harvest losses and emissions, especially cold-chain systems. Investments in energy-efficient cold storage, sustainable transportation networks, and digital logistics platforms can significantly enhance the feasibility of GSCM implementation.

Finally, policymakers should promote digital transformation initiatives, including the use of IoT, blockchain, AI to improve supply chain transparency and efficiency. Public-private collaborations also have a critical role in accelerating digital employment in logistics sector.

6.2. For firms

The study suggests that technological capability investment is essential for achieving sustainable performance. Companies should utilize digital tools such as route optimization systems, real-time tracking technologies, and energy management systems to improve efficiency and minimize negative impacts on environment.

In addition, firms should prioritize human resource development by providing training programs on sustainable methods and enhancing environmental awareness. Managerial commitment is particularly important in driving organizational change toward green practices.

Firms should also focus on integrating sustainability into core business, instead of considering it as a compliance requirement. This includes adopting green procurement, eco-friendly production processes, and sustainable logistics solutions.

6.3. For stakeholders

The study highlights the importance of coordinating among supply chain participants, including suppliers, logistics providers, and distributors. Developing integrated logistics platforms and information-sharing systems can improve coordination and reduce inefficiencies.

Furthermore, stakeholders should work together to implement green cold-chain resolutions, which are critical for reducing food loss and maintaining product quality. Collaborative investments in shared infrastructure can help to overcome financial and operational barriers.

6.4. Limitations

Although the sample size of 103 firms is statistically valid for regression, it limits the generalizability of the findings. Future research should aim for larger, longitudinal datasets to capture the evolution of green practices. Moreover, while this paper concentrates on internal capabilities and external pressures, future

studies could employ structural equation modelling to explore more complex moderating effects, such as the role of digital maturity in moderating the impact of institutional pressure on GSCM utilization.

REFERENCES

Challouf, K., Alhloul, A., & Nemeth, N. (2025). Mapping the role of Industry 4.0 technologies in green supply chain management: A bibliometric and structured text analysis. *Discover Sustainability*, 6, 949. DOI: https://doi.org/10.1007/s43621-025-01827-0

Cheng, H., Chaudhry, H. R., Kazi, I., & Umar, M. (2024). Unlocking greener supply chains: A global innovative perspective on the role of logistics performance in reducing ecological footprints. *Journal of Innovation & Knowledge*, 9(4), 100612. DOI: https://doi.org/10.1016/j.jik.2024.100612

Chi, A., & Huyền, N. (2025). Xây dựng thương hiệu thực phẩm Việt Nam: Bứt phá từ xúc tiến thương mại số. *Tạp chí Công Thương*. Access at https://tapchicongthuong.vn/magazine/xay-dung-thuong-hieu-thuc-pham-viet-nam--but-pha-tu-xuc-tien-thuong-mai-so-360658.htm

Dubey, R., Gunasekaran, A., & Childe, S. J. (2018). Big data analytics capability in supply chain agility. *Management Decision*, 57(8), 2092–2112. DOI: https://doi.org/10.1108/md-01-2018-0119

Gelagay, D. A., & Werke, S. Z. (2024). Impact of green human resource management and internal green supply chain management practices on operational performance: An empirical investigation of manufacturing sector. *Business Strategy & Development*, 7(2). DOI: https://doi.org/10.1002/bsd2.399

Green, K. W., Zelbst, P. J., Meacham, J., & Bhadauria, V. S. (2012). Green supply chain management practices: Impact on performance. *Supply Chain Management: An International Journal,* 17(3), 290-305. DOI: https://doi.org/10.1108/13598541211227126

Handoyo, S. (2024). Green supply chain management: A bibliometric analysis of global research trends and future directions. *Production & Manufacturing Research*, 12(1). DOI: https://doi.org/10.1080/21693277.2024.2422614

Hair, J. F., Joseph F. Hair Jr., William C. Black, Barry J. Babin, & Rolph E. Anderson. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Jaelani, I., Harsanto, B., Azis, Y., Sari, D., & Kaltum, U. (2025). Cold chain logistics challenges sustainability: A systematic review. *Sustainable Futures*, 10, 101559. DOI: https://doi.org/10.1016/j.sftr.2025.101559

Marchi, B., Zanoni, S., Zavanella, L., & Jaber, M. (2019). Supply chain models with greenhouse gases emissions, energy usage, imperfect process under different coordination decisions. *International Journal of Production Economics*, 211, 145-153. DOI: https://doi.org/10.1016/j.ijpe.2019.01.017

Mohseni, S., Baghizadeh, K., & Pahl, J. (2022). Evaluating barriers and drivers to sustainable food supply chains. *Mathematical Problems in Engineering*, 2022, 1–24. DOI: https://doi.org/10.1155/2022/4486132

Muniba, Majeed, A., & Du, A. M. (2026). Greening the supply chain: How digital transformation shapes environmental sustainability in emerging economies. *Energy Economics*, 157, 109283. https://doi.org/10.1016/j.eneco.2026.109283

Nguyen, D., Mac, T., & Hoang, H. (2025). Supply chain collaboration and green supply chain management: A bibliometric review, 2000-2023. *Journal of Transport and Supply Chain Management*, 19. DOI: https://doi.org/10.4102/jtscm.v19i0.1170

Niranjan, S., Garg, V., Gligor, D. M., & Hawkins, T. G. (2025). Enhancing supply chain sustainability performance: the pivotal role of emerging technologies. *Journal of Business and Industrial Marketing*, 40(2), 374-390. DOI: https://doi.org/10.1108/jbim-03-2024-0175

Samad, S., Nilashi, M., Almulihi, A., Alrizq, M., Alghamdi, A., Mohd, S., Ahmadi, H., & Azhar, S. N. F. S. (2021). Green Supply Chain Management practices and impact on firm performance: The moderating effect of collaborative capability. *Technology in Society*, 67, 101766. DOI: https://doi.org/10.1016/j.techsoc.2021.101766

Sundarakani, B., Manikas, I., & Gunasekaran, A. (2024). The role of digital transformation in achieving sustainable supply chain management in Industry 4.0: An editorial review perspective. *International Journal of Logistics Research and Applications*, 27(6), 843-851. DOI: https://doi.org/10.1080/13675567.2024.2332123

Watson, R., Nielsen, K. R., Wilson, H. N., Macdonald, E. K., Mera, C., & Reisch, L. (2022). Policy for sustainable entrepreneurship: A crowdsourced framework. *Journal of Cleaner Production*, 383, 135234. DOI: https://doi.org/10.1016/j.jclepro.2022.135234

Zhu, Q., Sarkis, J., & Lai, K. H. (2013). Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. *Journal of Purchasing and Supply Management,* 19(2), 106-117. DOI: https://doi.org/10.1016/j.pursup.2012.12.001