Journal of Advanced Research in Business and Management Studies

Journal homepage:
https://karyailham.com.my/index.php/arbms
ISSN: 2462-1935

A Conceptual Review of Green Supply Chain Management Practices and their Impact on Organizational, Environmental, and Economic Performance

Phutthiwat Waiyawuththanapoom[1,*], Wissawa Aunyawong[1], Saranya Muedkhuntod[1], Rafeah Legino[2,3,4,♣]

[1] College of Logistics and Supply Chain, Suan Sunandha Rajabhat University, Thailand
[2] Institut Seni Kreatif Nusantara (INSAN), Universiti Teknologi MARA, 40450 Shah Alam, Selangor Malaysia
[3] Formgiving Research Design Group, Faculty of Art & Design, Universiti Teknologi MARA, 40450 Shah Alam, Selangor Malaysia
[4] ACRULeT, Faculty of Education, Universiti Teknologi MARA, 42300 Bandar Puncak Alam, Selangor Malaysia

ARTICLE INFO

Article history:
Received 1 December 2024
Received in revised form 6 March 2025
Accepted 17 March 2025
Available online 30 June 2025

Keywords:
Green supply chain management (GSCM); organizational performance; environmental and economic impact

ABSTRACT

Green Supply Chain Management (GSCM) practices have emerged as a critical approach to achieving sustainability and enhancing organizational competitiveness. This conceptual review examines the multifaceted impact of GSCM on organizational, environmental, and economic performance. Drawing from an extensive analysis of existing literature, this study identifies key GSCM practices, including green procurement, eco-design, reverse logistics, and green manufacturing, and evaluates their influence on performance metrics. The findings highlight how integrating environmental considerations into supply chain operations not only reduces ecological footprints but also drives cost efficiency, innovation, and stakeholder satisfaction. Moreover, this review uncovers gaps in current research, such as inconsistencies in performance measurement and limited attention to the role of digital technologies in enhancing GSCM practices. By addressing these gaps, the study provides a robust foundation for future research and practical applications, emphasizing the need for comprehensive frameworks and cross-industry case studies. This paper contributes to the growing body of knowledge by offering actionable insights for policymakers, practitioners, and academics seeking to align sustainability goals with operational excellence.

1. Introduction

Green Supply Chain Management (GSCM) has gained considerable attention across a broad range of industries—such as clothing, automobile, electronics, furniture, and plastics—on a global scale. The adoption of Green Supply Chain Management Practices (GSCMP) has been empirically

* *Corresponding author.*
E-mail address: phutthiwat.wa@ssru.ac.th
♣ *Corresponding author.*
E-mail address: rlegino@yahoo.com

https://doi.org/10.37934/arbms.39.1.5360

linked to improvements in environmental, operational, and organisational performance. At a macro level, the strategies for promoting green logistics and supply chain management vary across regions, influenced by regulatory structures, cultural factors, and market expectations [1-3]. For instance, multinational companies in Asia often implement GSCMP to minimise waste generation [4], while U.S. based firms focus primarily on mitigating environmental damage [5]. These practices increasingly align with dynamic regulatory requirements and present opportunities for business innovation and growth [6]. As such, organisations must embrace green logistics to comply with governmental policies, respond to consumer expectations, and sustain competitiveness in global markets [7-9].

The outbreak of the COVID-19 pandemic has further emphasised the critical importance of GSCMP, particularly in helping businesses maintain operational continuity amid global disruptions. These practices ensure compliance with international environmental standards while enabling firms to adapt to uncertain and volatile market conditions [12,13]. GSCMP not only ensures compliance with international environmental standards but also enhances firms' resilience during supply disruptions. Prior research has demonstrated that GSCM contributes positively to operational efficiency [14,15] and environmental sustainability [4,6], ultimately fostering overall organisational success [16-18].

Given the increasing significance of GSCM in both theory and practice, this study aims to propose a conceptual framework and set of hypotheses that examine the impact of GSCMP on operational, environmental, and organisational performance. The framework integrates key green practices—such as green procurement, eco-design, reverse logistics, and green manufacturing—and evaluates their influence across multiple performance dimensions. Although prior studies have explored the benefits of GSCMP, research remains fragmented and often lacks clarity in performance measurement and fails to account for the role of digital technologies in enhancing supply chain sustainability. This study addresses these gaps by providing a comprehensive and integrated review that contributes valuable insights for practitioners, policymakers, and future academic inquiry.

2. Methodology

The methodology for this study adopts a conceptual review approach, aiming to explore the impact of Green Supply Chain Management Practices (GSCMP) on multiple performance dimensions, including operational, environmental, and organisational outcomes. A qualitative, descriptive design was chosen, grounded in a systematic review of existing literature to synthesise current knowledge and identify gaps. Data collection involved an extensive search of academic publications across reputable databases such as Scopus, Web of Science, and other indexed sources. The search was guided by specific keywords, including "Green Supply Chain Management Practices," "Environmental Performance," "Operational Performance," and "Organisational Performance." Only articles published within the last decade were included to ensure the findings reflected contemporary practices and trends. Furthermore, studies were selected based on their focus on GSCMP and their impact on performance metrics. Articles that lacked a direct link to GSCM or exhibited limited academic rigor were excluded from the analysis.

The conceptual framework in Fig. 1 illustrates how Green Supply Chain Management Practices (GSCMP) influences three key performance areas: operational, environmental, and organisational performance. Firstly, GSCMP is hypothesized to have a direct impact on operational performance (H1) by improving efficiency, reducing waste, and lowering costs. It also enhances environmental performance (H2) through better resource use and reduced environmental impact. Additionally,

GSCMP is expected to influence organisational performance (H3) by strengthening sustainability reputation and competitive advantage. The model also shows interrelations among the performance dimensions. Operational performance (H4) and environmental performance (H5) are both believed to positively affect organisational performance. There are also two-way interactions: environmental performance enhances operational performance (H6) by promoting efficiency, and operational performance contributes to environmental performance (H7) by reducing emissions and waste. The framework suggests that GSCMP not only directly improves performance outcomes but also creates a reinforcing cycle between operational and environmental improvements, ultimately enhancing overall organisational success.

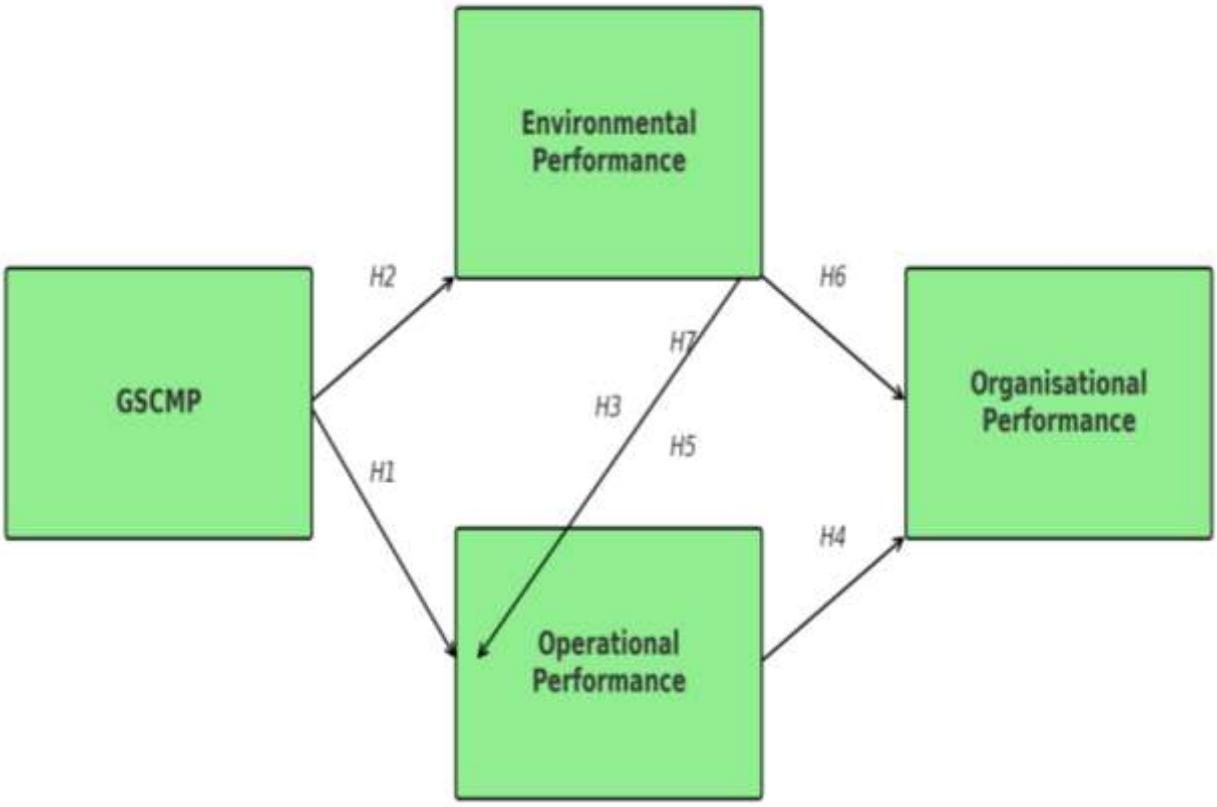

Fig. 1. Conceptual framework illustrating the relationships between green supply chain management practices (GSCMP), operational performance, environmental performance, and organisational performance

To analyse the data, content analysis was employed to categorise the various GSCMP, such as green procurement, eco-design, reverse logistics, and green manufacturing. Thematic analysis was further applied to identify recurring patterns and relationships between these practices and the performance metrics under consideration. This approach provided a structured framework for interpreting the diverse findings across different studies. Building on the insights from the reviewed literature, a conceptual framework was developed to elucidate the relationship between GSCMP and their performance impacts. This framework is informed by theoretical perspectives, including the Resource-Based View (RBV) and Stakeholder Theory, which underscore the strategic importance of sustainability as a competitive resource and as a response to stakeholder demands. The framework highlights the interplay between green practices and performance outcomes, serving as a basis for formulating hypotheses.

Finally, ethical considerations were addressed by ensuring the integrity and credibility of the secondary data used in the study. Since this research relies entirely on published sources, no direct ethical clearance was necessary. Overall, this methodology offers a robust foundation for understanding the multifaceted impacts of GSCMP, paving the way for future empirical research and practical applications in green supply chain management.

3. Results

3.1 Green Supply Chain Management Practices

Green Supply Chain Management Practices (GSCMP) refer to the practices that combine the concept of supply chain management with the concept of environmental management, involving the relationship between the design process, raw material sourcing, production, packaging, storage, transportation, distribution, consumption, reuse, and disposal of goods. All processes must show awareness of environmental friendliness throughout the product lifecycle and focus on building green supply chain integration among suppliers, internal departments, and customers to create added value for efficient operations, obtain a competitive advantage, and reduce the environmental impact of the business in a sustainable way [19]. The critical components of business enterprise GSCMP comprise internal environmental management, green purchasing, customer cooperation, and eco-design.

Companies implementing GSCMP in processes of design, production, distribution and logistics management will result in higher operational performance than companies that do not implement GSCMP [4]. Managing the internal environment of the company that is standardised and certified by the government's environmental agencies is a strategic imperative based on the needs of the customers [14]. In addition, GSCMP can affect operations in the fields of marketing, finance, social, economic and environmental [20]. It is, thus, in Fig. 2 hypothesised that:

H1: Green supply chain management practices have a positive direct effect on operational performance.

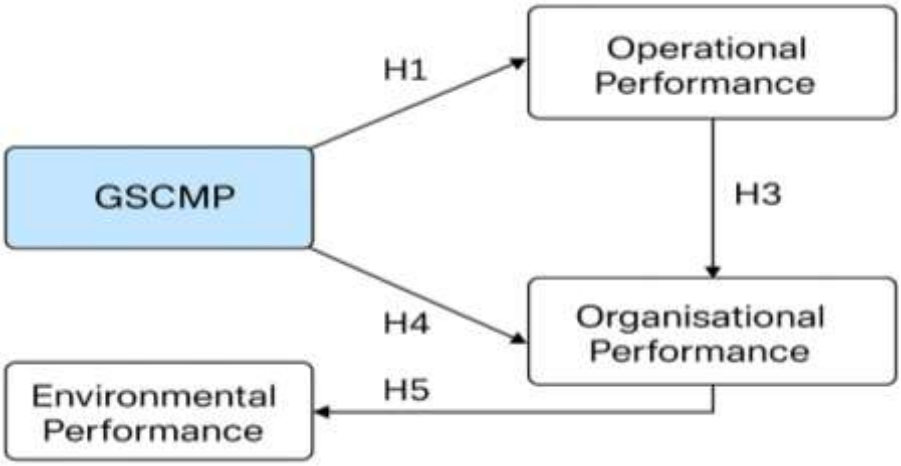

Fig. 2. Mapping of hypothesised relationship among GSCMP, operational performance, environmental performance, and organisational

GSCMP will help build a positive image of the business organisation to society [4] and develop environmental operations. The current study found that GSCMP, driven by stakeholder pressures

and corporate green resources, have a significant positive impact on the organisation's environmental and economic performances [6]. It is therefore, hypothesised that:

H2: Green supply chain management practices have a positive effect on environmental performance.

3.2 Environmental Performance

Environmental performance (ENP) means efficient performance to make people around the organisation have a good quality of life; that is, action must be taken to prevent pollution problems that will affect the well-being and livelihood [21]. In other words, ENP refers to the results of a business in shaping the size and direction of resource control in environmental systems to contribute to society sustainably and the impact on the environment and external communities by controlling and preventing pollution or minimising pollution. As suggested by Tadros *et al.,* [22], ENP comprises Emission Reduction (ER), Resource Reduction (RR), and Product Innovation (PI).

Environmental innovation practices, including reducing emissions to the environment and energy or fuel consumption, will lead to effective operational performance [23], which will help businesses survive and compete in the market. Furthermore, setting strategic environmental goals not only drives the environmentally friendly design of the product but also plays a vital role in enhancing environmental and operational performances [23]. It is, consequently, hypothesised that:

H3: Environmental performance has a positive effect on operational performance.

3.3 Operational Performance

Operational Performance (OPP) refers to the quality, cost, productivity, and delivery outcomes of an organisation, or the ability of an organisation to reduce costs or expenses in managing operations according to the time of the order cycle, improve the efficiency of raw material utilisation, and meet customer delivery requirements [25]. Assessment of OPP is very important to manufacturers because it will lead to the effectiveness of producing high quality products. This results in greater customer satisfaction and increased revenues and profits. OPP indicators, moreover, are indirectly measured by the turnover rate or the rate of absenteeism which is an effect of the efficiency of human resource management [26]. According to a review of previous studies by Abdallah *et al.,* [27], the OPP dimensions of a business organisation that are important issues are Cost (CO), Quality (QUA), and Delivery Time (DT).

Rajaguru, Rajesh, and Margaret [16], portray that resource integration between supply chain partners help organizations in operation to achieve supply chain capabilities and competitive corporate performance, while Zhai and Xiaowen [17], found that an efficient operating system had a greater effect on business performance in developing countries than developed countries. Moreover, Ullah *et al.,* [18], depicts that the adoption of customer-centred operational management had a significant positive impact on organizational performance with higher customer satisfaction. It is, as a result, hypothesized that:

H4: Operational performance has a positive effect on organizational performance.

3.4 Organisational Performance

Organisational Performance (ORP) is an outcome measure of success comprising productivity, profit, service quality, and customer/employee satisfaction. ORP indicators, in addition, include employee safety, suitable rewards, fair compensation, appropriate working environment, and quality of work life to build employee company engagement [28]. Kurniawan *et al.,* [29] has divided ORP into two dimensions: financial and non-financial performances, while this study divides ORP into three dimensions based on the concepts of Kurniawan *et al.,* [29] and Ilmudeen *et al.,* [30], consisting of financial achievement (FA), customer intimacy (CI), and marketing performance (MP). The relationship of variables based on the above hypotheses, as shown in Figure 1, allows this study to consider the mediation effects of operational performance and environmental performance [10,11,24]. It is, accordingly, hypothesised that:

H5: Operational performance positively mediates the effect of green supply chain management practices on organisational performance.
H6: Operational performance positively mediates the effect of environmental performance on organisational performance.
H7: Environmental performance positively mediates the effect of green supply chain management practices on operational performance.

4. Conclusions

This study provides a conceptual review of Green Supply Chain Management Practices (GSCMP) and their impact on operational, environmental, and organisational performance. By synthesising existing literature, the research highlights the critical role of GSCMP in enabling firms to achieve sustainability goals while enhancing their competitive advantage. Key practices, such as green procurement, eco-design, reverse logistics, and green manufacturing, have been identified as significant contributors to improved performance across multiple dimensions.

The findings underscore the importance of integrating GSCMP into business strategies to not only comply with evolving environmental regulations but also to address increasing consumer and stakeholder demands for sustainable practices. Additionally, this study reveals the need for a comprehensive approach to performance measurement, considering the interconnected nature of environmental, operational, and organisational outcomes.

Despite the progress made in the field, several gaps in the literature were identified. These include inconsistencies in performance metrics, limited focus on the role of digital technologies in enhancing GSCMP, and the lack of cross-industry comparative studies. Addressing these gaps presents opportunities for future research to refine theoretical frameworks and provide actionable insights for businesses and policymakers.

The conceptual framework proposed in this study offers a foundation for empirical investigations into the relationships between GSCMP and performance. By advancing this line of inquiry, researchers can provide valuable guidance to companies aiming to adopt sustainable practices, especially in the face of global challenges such as climate change and economic disruptions. Furthermore, the findings have implications for government agencies seeking to design policies that encourage green practices and for academics interested in exploring innovative approaches to GSCM.

In conclusion, GSCMP represents a vital strategy for achieving sustainable development and long-term success. As businesses face increasing pressure to balance profitability with

environmental stewardship, the adoption of GSCMP will remain a cornerstone of effective supply chain management. Future research should focus on addressing existing gaps and exploring the dynamic interplay between green practices and emerging technologies to further enhance their impact on multiple performance dimensions.

Acknowledgement
The authors gratefully acknowledge the support of the College of Logistics and Supply Chain, Suan Sunandha Rajabhat University, Thailand and thank colleagues and reviewers for their valuable feedback and contributions to this study.

References

[1] Waiyawuththanapoom, Phutthiwat, Ronnakorn Vaiyavuth, Pimploi Tirastittam, Swe Swe Zin, Chalat Wongsanguan, and Wissawa Aunyawong. "Does proactive logistics management enhance business management?." *Polish Journal of Management Studies* 24, no. 1 (2021): 457-471. https://doi.org/10.17512/pjms.2021.24.1.27

[2] Waiyavat, Chumrieng, Preecha Wararatchai, and Wissawa Aunyawong. "Transformational leadership and customer loyalty affecting supply chain performance of Thailand logistics service providers." *Journal of Optoelectronics Laser* 41, no. 5 (2022): 710-716.

[3] Nopphakate, Kiattiyot, and Wissawa Aunyawong. "The relationship of tourism logistics management and destination brand loyalty: the mediating role of Thailand tourist satisfaction." *International Journal of Health Sciences* V (2022): 356-366. https://doi.org/10.53730/ijhs.v6nS5.7833

[4] Choudhary, Kailash, and Kuldip Singh Sangwan. "Multiple case study analysis and development of an interpretive structural model for greening of supply chains in Indian ceramic enterprises." *Management of Environmental Quality: An International Journal* 30, no. 6 (2019): 1279-1296. https://doi.org/10.1108/MEQ-11-2018-0196

[5] Prachayapipat, M., P. Wararatchai, W. Aunyawong, and V. Panjakajornsak. "The effect of stakeholder on sustainable supply chain performance of road transportation service providers in Thailand: the mediating role of green supply chain management practices." *Journal of Optoelectronics Laser* 41, no. 4 (2022): 184-190.

[6] Sommanawat, K., C. Hotrawaisaya, P. Waiyawuththanapoom, S. Srisawat, W. Aunyawong, and K. Jermsittiparsert. "The role of technological management, idea implementation, sustainable process innovation and logistic competency." *Journal of Management Information and Decision Sciences* 24, no. S1 (2021): 1-13.

[7] Pakornpongwatthana, Kawinchat, and Wissawa Aunyawong. "Logistics Performance Affecting Logistics Service Provider Selection of Processed Seafood Manufacturers in Thailand." *Journal of Logistics and Supply Chain College* 8, no. 2 (2022): 17-27.

[8] Moryadee, Chanicha, Wissawa Aunyawong, and Mohd Rizaimy Shaharudin. "Congestion and pollution, vehicle routing problem of a logistics provider in thailand." *The Open Transportation Journal* 13, no. 1 (2019). https://doi.org/10.2174/1874447801913010203

[9] Shaharudin, Mohd Rizaimy, Ahmad Rais Mohamad Mokhtar, Preecha Wararatchai, and Rafeah Legino. "Circular supply Chain Management and Circular Economy: a conceptual model." *Environment-Behaviour Proceedings Journal* 7, no. SI7 (2022): 31-37. https://doi.org/10.21834/ebpj.v7iSI7.3762

[10] Aunyawong, W., P. Wararatchai, and C. Hotrawaisaya. "The mediating role of trust among supply chain partners on supply chain integration, cultural intelligence, logistics flexibility and supply chain performance." *Science International Journal* 30, no. 4 (2018): 629-633.

[11] Aunyawong, Wissawa, Preecha Wararatchai, and C. Hotrawaisaya. "The influence of supply chain integration on supply chain performance of auto-parts manufacturers in Thailand: a mediation approach." *International Journal of Supply Chain Management* 9, no. 3 (2020): 578-590.

[12] Aunyawong, Wissawa, Preecha Wararatchai, Mohd R. Shaharudin, Anchalee Hirunpat, and Sittiporn Rodpangwan. "The mediating role of transportation practices during the COVID-19 crisis in Thailand." *The Open Transportation Journal* 15, no. 1 (2021). https://doi.org/10.2174/1874447802115010170

[13] Pintuma, Sittichai, and Wissawa Aunyawong. "The effect of green supply chain management practices on environmental, operational and organizational performances of seafood manufacturers in Thailand." *International Journal of eBusiness and eGovernment Studies* 13, no. 2 (2021): 33-48.

[14] Younis, Hassan, and Balan Sundarakani. "The impact of firm size, firm age and environmental management certification on the relationship between green supply chain practices and corporate

performance." *Benchmarking: An International Journal* 27, no. 1 (2019): 319-346. https://doi.org/10.1108/BIJ-11-2018-0363

[15] Acquah, Innocent Senyo Kwasi, Yaw Agyabeng-Mensah, and Ebenezer Afum. "Examining the link among green human resource management practices, green supply chain management practices and performance." *Benchmarking: An International Journal* 28, no. 1 (2021): 267-290. https://doi.org/10.1108/BIJ-05-2020-0205

[16] Rajaguru, Rajesh, and Margaret J. Matanda. "Role of compatibility and supply chain process integration in facilitating supply chain capabilities and organizational performance." *Supply Chain Management: An International Journal* 24, no. 2 (2019): 301-316. https://doi.org/10.1108/SCM-05-2017-0187

[17] Zhai, Xiaoxuan, and Xiaowen Tian. "Do performance measures matter in the relationship between high-performance work system and organizational performance?." *International Journal of Manpower* 41, no. 3 (2020): 241-257. https://doi.org/10.1108/IJM-04-2018-0136

[18] Ullah, Abid, Shahid Iqbal, and SM Riad Shams. "Impact of CRM adoption on organizational performance: Moderating role of technological turbulence." *Competitiveness Review: An International Business Journal* 30, no. 1 (2020): 59-77. https://doi.org/10.1108/CR-11-2019-0128

[19] Green, Kenneth W., Pamela J. Zelbst, Jeramy Meacham, and Vikram S. Bhadauria. "Green supply chain management practices: impact on performance." *Supply chain management: an international journal* 17, no. 3 (2012): 290-305. https://doi.org/10.1108/13598541211227126

[20] Agyabeng-Mensah, Yaw, Esther Ahenkorah, Ebenezer Afum, Essel Dacosta, and Zhongxing Tian. "Green warehousing, logistics optimization, social values and ethics and economic performance: the role of supply chain sustainability." *The International Journal of Logistics Management* 31, no. 3 (2020): 549-574. https://doi.org/10.1108/IJLM-10-2019-0275

[21] Younis, Hassan, Balan Sundarakani, and Prakash Vel. "The impact of implementing green supply chain management practices on corporate performance." *Competitiveness Review* 26, no. 3 (2016): 216-245. https://doi.org/10.1108/CR-04-2015-0024

[22] Tadros, Hani, Michel Magnan, and Emilio Boulianne. "Is corporate disclosure of environmental performance indicators reliable or biased information? A look at the underlying drivers." *Journal of Financial Reporting and Accounting* 18, no. 4 (2020): 661-686. https://doi.org/10.1108/JFRA-02-2020-0027

[23] Gomez-Conde, Jacobo, Rogerio Joao Lunkes, and Fabricia Silva Rosa. "Environmental innovation practices and operational performance: The joint effects of management accounting and control systems and environmental training." *Accounting, Auditing & Accountability Journal* 32, no. 5 (2019): 1325-1357. https://doi.org/10.1108/AAAJ-01-2018-3327

[24] Phrapratanporn, Bundit, Preecha Wararatchai, Wissawa Aunyawong, and N. R. N. A. Rashid. "Enhancing supply chain performance of SMEs in Thailand using the integrated personnel development model." *International Journal of Supply Chain Management* 8, no. 5 (2019): 176-186.

[25] Ataseven, C., Prajogo, D.I., & Nair, A. (2014). ISO 9000 internalisation and organisational commitment—implications for process improvement and operational performance. *IEEE Transactions on Engineering Management, 61*(1), 5-17. https://doi.org/10.1109/TEM.2013.2285344

[26] Wisedsin, T., Jermsittiparsert, K., Thitrat, P., & Aunyawong, W. (2020). Role of advanced manufacturing technology, Human Capital and Employee Empowerment to enhance Manufacturing Industry Supply Chain Performance. *International Journal of Supply Chain Management, 9*(2), 411-418.

[27] Abdallah, Ayman Bahjat, Anh Chi Phan, and Yoshiki Matsui. "Investigating the effects of managerial and technological innovations on operational performance and customer satisfaction of manufacturing companies." *International Journal of Business Innovation and Research* 10, no. 2-3 (2016): 153-183. https://doi.org/10.1504/IJBIR.2016.074824

[28] Al Issa, Hussein-Elhakim. "The impact of improvisation and financial bootstrapping strategies on business performance." *EuroMed Journal of Business* 16, no. 2 (2021): 171-194. https://doi.org/10.1108/EMJB-03-2020-0022

[29] Kurniawan, Randy, Dyah Budiastuti, Mohammad Hamsal, and Wibowo Kosasih. "Networking capability and firm performance: the mediating role of market orientation and business process agility." *Journal of Business & Industrial Marketing* 36, no. 9 (2021): 1646-1664. https://doi.org/10.1108/JBIM-01-2020-0023

[30] Ilmudeen, Aboobucker, Yukun Bao, and Ibraheem Mubarak Alharbi. "How does business-IT strategic alignment dimension impact on organizational performance measures: Conjecture and empirical analysis." *Journal of Enterprise Information Management* 32, no. 3 (2019): 457-476. https://doi.org/10.1108/JEIM-09-2018-0197