

International Journal of Supply Chain Management (IJSCM)

Effect of Green Supply Chain Innovation Alliance on Performance of Manufacturing Firms in Nairobi County

Julius Ngatuny, Dr. Antony Karanja PhD, Dr. Eric Namusonge PhD and Dr. Jane Omwenga PhD



Effect of Green Supply Chain Innovation Alliance on Performance of Manufacturing Firms in Nairobi County

 ¹Julius Ngatuny
 ²Dr. Antony Karani (PhD)
Jomo Kenyatta University of Agriculture and Technology, Kenya
 ³Dr. Eric Namusonge (PhD)
Taita Taveta University
 ⁴Dr. Jane Omwenga (PhD)
Jomo Kenyatta University of Agriculture and Technology, Kenya

Article History

Received 16th August 2024

Received in Revised Form 19th September 2024

Accepted 25th October 2024



How to cite in APA format:

Ngatuny, J., Karani, A., Namusonge, E., & Omwenga, J. (2024). Effect of Green Supply Chain Innovation Alliance on Performance of Manufacturing Firms in Nairobi County. *International Journal of Supply Chain Management*, 9(4), 45–57. <https://doi.org/10.47604/ijscm.3035>

Abstract

Purpose: The general objective of the study was to determine influence of green supply chain innovation alliances on performance of manufacturing firms, in Nairobi County Kenya.

Methodology: The study was informed by Social Exchange Theory, Transaction Cost Theory, Resource-Based view and Resource Dependency Theory. The research design for this study was an explanatory survey research design; this is primarily a positivism approach. The population for the study will constitute manufacturing firms in Kenya. Thus, the unit of observation was 516 procurement managements from 516 manufacturing firms. The research employed stratified and simple random to select a sample of 225. This study used structured questionnaires to collect data relevant to the study. Descriptive analysis such as means, standard deviation and variance.

Findings: linear regression models showed that green supply chain innovation alliances have a positive and statistically significant influence on firm performance, highlighting their essential role in enhancing success for manufacturing firms. A strong partnership with suppliers and specialized expertise in green supply chain management are crucial for this improvement.

Unique Contribution to Theory, Practice and Policy: Therefore, the study recommends that organizations actively strengthen their green supply chain innovation alliances by establishing joint sustainability initiatives and creating regular collaboration forums with suppliers to share best practices and innovative solutions.

Keywords: *Green Supply Chain Innovation Alliances, Performance, Manufacturing Firms*

©2024 by the Authors. This Article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license

<http://creativecommons.org/licenses/by/4.0/>

INTRODUCTION

In the modern business environment, companies require a competitive supply management approach to improve their business performance. Green supply chain innovation alliance has an impact on an organization's competitiveness (Jo & Kwon, 2022). Green supply chain innovation alliance has become epicenter of any enterprise and organizations performance (Lazar, 2016). Based on Faizal (2015), companies nowadays are endlessly seeking ways to achieve optimum firm performance and maintain a competitive edge through the successful disposition of resources and business processes. One of these practices is green supply chain innovation alliance.

Green innovation refers to any innovation that mitigates or reduces the environmental impact of business activities by reducing energy use, pollution, and waste via recycling, either by a better environmental management system, environment-friendly product designs or by adopting new green technologies (Chen et al., 2006). A green supply chain innovations has a number of direct and indirect actors that collaborate to eliminate any environmental harming waste in every single stage of a supply chain. Implementing and achieving GSCM is not an easy task, as the concerned firms need to bring about all the actors within a supply chain. Studies (Chiou et al., 2011; Tseng et al., 2013) segment green innovations on features such as green technology, top managerial functions, green manufacturing processes, and green product design. The prime purpose of adopting and implementing green innovations is to enhance business firms' environmental image and competitive capabilities (Burki & Dahlstrom, 2017). A firm should involve supply chain partners and regularly hold environmental awareness training, seminars, and training regarding disposal of hazardous waste, hazardous emissions, and ways to minimize consumption of natural and non-renewable energy resources (Zhu et al., 2013).

The performance of the supply chain depends on the relationship with the customers, which can lead to a strategic partnership with SC members in which information sharing also essential (Sukati et al., 2012; Zhang et al., 2016). Information sharing is essential for strategic partnership development, although its effect on the performance is not always has been proved significant (Huo et al. 2017). One such example is The Paris Climate Conference (held in 2016) where the international community came together to cut down carbon emissions in a concrete manner. Such kind of collective commitment to improve environment sustainable is beginning to have an impact on the way business firms will operate in their current and future activities. Thus, for successful implementation of green supply chain innovation alliance in manufacturing firms which are able to enhance profitability and for securing and maintaining a competitive global position, more studies on implication of green supply chain innovation Alliance on performance of manufacturing firms.

Despite international environmental treaties and rules increasing changes in global environment as a strategy to minimize emissions of greenhouse gases and pollution, the global environment is nevertheless changing. In order to develop sustainable management, it is becoming increasingly vital, but difficult, to handle environmental challenges utilizing green supply chain management approaches without supply chain ecocentricity (Woo et al., 2016). In these circumstances, manufacturing-based firms in developing nations such as Kenya are discovering it hard in meeting the growing demands of environmental concerns through employment of GSCM on their own because they are costly, inadequate environmental awareness and lack of practical (Joo, 2015).

Despite, the manufacturing sector plays a critical role in economic development and creation of employment globally, regionally and in Kenya. Manufacturing sector is a crucial tool for Kenya to achieve her long-term economic strategy, the Vision 2030 and the sustainable development goals (National Planning Commission, 2018). However, in Kenya, the sector has been facing significant challenges in the last 15 years with significant drop in its contribution to GDP hence the premature de-industrialization phenomenon. This is evidenced by constant reduction in the manufacturing firms (KNBS, 2023). Kenya Bureau of Statistics (2020) report indicated that the growth rate of the manufacturing sector was 4.2 percent in 2020 which arose from 3.7 percent in the year 2019. A growth rate of an average of 3.9 % is very low given that the Kenya Vision 2030 envisages that the manufacturing sector will grow at the rate of 10 percent annually. Manufacturing stands tall as a key pillar in the Big Four development agenda by the National Government in Kenya (Muigua, 2019). Therefore, the low performance of manufacturing firms implies that the realization of a robust manufacturing sector by the Kenya Government will remain a pipe dream. This poor performance has been attributed with inability of manufacturing firms to effectively embrace modern sustainability practices.

Most of the existing research demonstrates that implementing green supply chain innovation alliance has a favorable impact on operating cost performance (Bataineh, 2021, Cousins, et al., 2019). Other research suggests that managers experience considerable difficulty in fully realizing the benefits of green supply chain innovation alliance (Kirchoff et al., 2016), possibly due to a variety of implementation constraints (Goyal and Kumar, 2018). few studies have attempted to link green supply chain innovation alliance and performance of firms in Kenya. Thus, there is need to study green supply chain innovation alliance and its association with firm performance. Therefore, this study attempted to contribute to new knowledge in theoretical, practical and managerial implication by assessing effect of Green Supply Chain Innovation Alliance on performance of manufacturing firms in Nairobi county.

Theoretical Review

Ekeh (1974) proposed the social exchange theory (SET), a socio psychological process that views societal structures of the society as a process of coordinated exchanges between parties. It proposes that all social relationships came to being through an idiosyncratic cost-benefits evaluations as well as the contrast of options, and implies that, people assess the entire value of a relationship by subtracting its cost from the benefits it provides. SET posits that the driving factor in any mutual relationship is the fulfilment of both party's vested interest. Therefore, both players step up and there is a common dependence to improve the satisfaction of both players. Based on Pratt and Dirks, (2007) SET principles consist of cooperation, commitment, trust, communication, relational norms and satisfaction. This theory related sufficiently to the typical relationship developed between purchasing companies and their suppliers.

The SET, which originates in anthropology, includes relationships inside supply chains (Blau 1964; Cheng & Chen 2016). Behavioral psychology, sociology, philosophy, and economics are among the topics covered by the SET (Chao et al. 2013). Social exchange theory is particularly popular for assessing strategic alliances within the supply chain (Chao et al. 2013). SET is widely used in the supply chain genre to assess supply chain partnerships that produce added value for both parties (Chao et al. 2013; Okdinawati, Simatupang & Sunitiyoso 2017). Social exchange theory posits that trust is the factor that makes relational governance possible, allowing greater benefits of knowledge transfer, joint learning, and the sharing of risks and

costs associated with exploring and exploiting opportunities (. Previous studies have found that collaboration between suppliers and OEMs enables the participating firms to leverage the resources and knowledge of their partners and customers by mitigating the ‘fear that one’s exchange partner will act opportunistically’ (Choi & Hwang, 2015). Thus, the theory is relevant in discussing influence of green supply chain innovation alliance on performance of manufacturing firms in Nairobi County in Kenya

Empirical Review

By evaluating the moderating influence of green supply chain innovation alliance, Anane (2022) performed a comparative study of Ghana Water Co. Ltd. and Bayport Savings and Loans Plc in terms of partnership of supplies in green supply chain and organizational performance. A questionnaire survey was utilized to collect primary data from 160 employees. A quantitative approach was used. SPSS version 26 was aided in data analysis. The study found that alliances of supplies in green supply chain was a key factor of organizational success.

Manimay (2018) investigated the determinants that influence green supply chain innovation alliances (GP) practices adoption in Indian enterprises, as well as the influence of green practices implementation on key firm performance indicators. An online field survey questionnaire was constructed based on the existing literature on green supply chain management methods. A web-survey was issued to hundreds of Indian industrial companies. multivariate analytic method was employed. customer pressure, supplier collaboration, Internal environmental concern, management support and competitive pressure all had a beneficial impact on GP, according to the findings. The second conclusion was that general practice adoption was linked to all of the firm's performance metrics.

Yook et al. (2017) identified and quantified a firm's alliances in implementation of green supplier, which are divided into operational and dynamic capabilities, and their impact on the firm's environmental and financial performance. A questionnaire for both operational and dynamic green purchasing capabilities was developed. The moderating influence of firm size on the connection between green purchasing skills and business performance is also investigated in this study. The structural equation model (SEM) was used to analyze 239 answers from Japanese manufacturing companies, and it was discovered that dynamic and firm's partnership in implementation of green supplier have a favorable impact on environmental and financial outcomes.

Vijayvargy et al. (2017) explored the influence of innovation alliances on the adoption of green supply chain management (GSCM) methods and performance in the Indian sector. Their study used a pre-tested structured questionnaire. The study followed experimentally approach to evaluate the GSCM model. Data from 161 Indian companies was used to make statistical inferences. This study analyzed the implementations of green supply chain innovation alliances practices in small, medium, and big businesses. Demonstrated that implementing green supply chain innovation alliances improves operational performance.

Al-Ghwayeen and Abdallah (2018) found that green has a favorable and significant impact on environmental and export performance in 221 manufacturing firms. In a similar vein, another recent study found that using environmental management strategies like green supply chain innovation alliances leads to improved operational and environmental results (Famiyeh et al., 2018). Although most of the available studies on supply chain initiatives support the significant

effect of green supply chain innovation alliances as potential key drivers to firm performance. These studies were limited in terms of concept scope, methodological scope and geographic methodologies. There has been significantly less comprehensive research on the effects of supply chain

METHODOLOGY

The research design for this study was explanatory survey research design; this is primarily a positivism approach, which falls under positivist research ontology and epistemology, an epistemological philosophy in quantitative research where we use natural scientific techniques to determine social research (Hammersley, 2013). The study relied on existing hypothesis and theories to explain the dynamics that led to the occurrence of a specific phenomenon (Cooper and Schindler, 2011).

Target Population and Sampling

The population for the study constituted 516 manufacturing firms in Nairobi County, Kenya (KAM, 2023). Thus, the unit of observation was procurement managers in manufacturing firms. For this study, Slovin's formula (2018) also developed by Yamane (1967), was used to calculate the sample size of 225. In the first phase, stratified sampling was used to stratify the 225 sample into 13 categories of manufacturing firms in Nairobi County. Proportionate method was used in order to get equal representation, where the study was computed each stratum's sample by dividing the stratum's population with the total population and multiplying the result with the sample so as to get a proportionate representative sample from each. The final stage of probability sampling technique process was involve employing simple random sampling to select the final sample of survey respondents from each stratum. In this study, a total study sample of 225 randomly selected using SPSS.

Data Collection Instruments

This study used structured questionnaires to collect data relevant to the study. In order to obtain primary data, questionnaires were used to collect data. Questionnaires was administered to the employees of the manufacturing firm. The questionnaire was contained both open-ended and closed questions, as well as a 5-point Likert scale questionnaire was used for data collection. After review of the literature, it became evident that many studies, such as those by Pagell and Wu (2009), and Thiell (2010), used many different variables. Based on these previous studies, the study used items in conceptual framework to measure green supply chain employee involvements activities considering as dependent variables the performance is measured using both financial and non-financial indicators. Responses was recorded on 5-likert scale, 1=strongly disagree and 5=strongly agree.

Piloting

To ensure reliability of the questionnaires, a pilot study was carried out in 22 state corporations in neighbouring Thika county. The questionnaire was shared with two supervisors for content validity review in this project. Three levels of content validity were developed. Exploratory factor analysis using Kaiser-Meyer-Olkin estimate of sampling adequacy, Bartlett's test of sphericity, and varimax rotations components was used to determine factor validity. To assess and improve reliability, a pilot test was carried out where 22 questionnaires were randomly administered to head of procurement officer prior to the actual study where each group was administered 5 questionnaires. The researcher was ensure that the participants in the pilot study

was have similar characteristics with target population and they was not take part in the main study. However, participants in a pilot study need not to be statistically selected. Thereafter, data was coded, and responses analysed through SPSS to determine the validity and reliability.

Data Analysis and Model Specification

The descriptive statistical techniques of mean, frequency and standard deviation was used to assess the quantitative data acquired. In this research, linear regression was used to determine the effect of green supply chain innovation alliances on performance of manufacturing firms. The model used is as presented in equation 1.

$$Y = \beta_0 + \beta_1 x_1 + \varepsilon$$

X_1 : = green supply chain innovation alliances, Y : = The dependent variable (performance of manufacturing firms), β_1 : effect of slope coefficients denoting the influence of the associated independent variables over the dependent variable. ' ε ': Represent the error terms.

FINDINGS AND DISCUSSION

This section presents the data analysis and findings based on the study objectives. Out of 225 distributed questionnaires, 208 were returned, resulting in an initial response rate of 92.4%. After screening, six questionnaires were unusable due to missing values, leaving 202 valid responses and a final response rate of 89.77%. This high rate was achieved through the researchers' consistent engagement with respondents at research sites, including follow-up calls and flexible completion options. The final response rate of 89.77% demonstrates the effectiveness of the data collection methods, providing a solid foundation for accurate analysis and reinforcing the reliability of the study's result.

Descriptive Results

The descriptive analysis from Table 1 indicated varying levels of agreement among respondents regarding different aspects of green supply chain innovation alliance. For instance, respondents show relatively higher levels of partnership with suppliers and specialized expertise in green supply chain management, with a mean of 3.23 (SD 1.23). Furthermore, collaboration with research institutions and universities to innovate in green supply chain practices also shows moderate levels of agreement among respondents, with means ranging from 2.81 (SD 1.08) to 3.05 (SD 1.06). However, there appears to be room for improvement in collaboration with customers to identify innovative solutions for enhancing environmental sustainability across the supply chain, with a mean rating of 2.98 (SD 0.83). Overall, the findings suggest that while there is some level of collaboration within the supply chain for green innovations and sustainability practices, there is still potential for further enhancement, particularly in engaging customers and fostering stronger partnerships across the supply chain.

Table 1: Descriptive Statistics for Green Supply Chain Innovation Alliance

	Mean	Std. Dev
We have partnered with our suppliers to improve innovations in green chain supply management	3.23	1.23
We have formed alliances with universities in innovating implementation of green supply chain	2.81	1.08
We have formed alliances with research institutions in ensuring most of our products are ecofriendly	3.05	1.06
We have partnered with specialized and expertise of green supply chain	3.20	0.94
Most of our partners have provide with effective skills for implementation of green suppl chain	2.85	1.27
Our supplies act as our partners in ensuring goods delivered are eco friendly	2.72	0.92
We alias with customers to identify innovative solutions that enhance environmental sustainability across the supply chain.	2.98	1.18
SC innovation alliance	2.98	0.83

The findings indicate that the firm has performed well across different dimensions, with moderate to high mean scores observed for each aspect. Specifically, the firm has consistently preserved a high market share in the past two years (mean = 3.21, SD = 1.035) and has experienced significant sales growth during the same period (mean = 2.49, SD = 0.865). Moreover, the firm has successfully retained most of its customers in the past two years (mean = 3.15, SD = 1.512) and has increased its market size in new markets compared to its competitors (mean = 3.85, SD = 1.142). Additionally, the firm has created a positive reputation in the industry (mean = 3.28, SD = 1.673) and improved the perception of customer satisfaction (mean = 3.57, SD = 1.064). Overall, the firm performance score is 3.26 with a standard deviation of 1.02, indicating a moderate to high level of performance across the surveyed aspects.

Table 2: Descriptive Statistics for Firm Performance

	Mean	Std. Dev
The firm has consistently preserved a high market share in the past two years.	3.21	1.035
The firm has experienced significant sales growth in the past two years.	2.49	0.865
The firm has successfully retained most of our customers in the past two years.	3.15	1.512
The firm has increased our market size in new markets compared to our competitors.	3.85	1.142
The firm has successfully created a positive reputation in the industry.	3.28	1.673
The firm has improved the perception of customer satisfaction.	3.57	1.064
Firm Performance	3.26	1.02

Correlation Analysis

Correlation analysis, as depicted in Table 3, unveils the outcomes aimed at investigating the relationships between firm performance and green supply chain innovation alliance. Findings

from Table 3 showed that the correlation between firm performance and green supply chain innovation alliance is notably strong ($r = 0.717$, $p < 0.01$), indicating a positive and significant relationship between these variables.

Table 3: Correlation Analysis

		Firm Performance	Green Supply Chain Innovation Alliance
Firm performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	202	
Green supply chain innovation alliance	Pearson Correlation	.717**	1
	Sig. (2-tailed)	0.000	
	N	202	202

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Regression Analyses

Linear regression was used to determine the combined effect of green supply chain innovation alliance on firm performance. The presented model summary, ANOVA, and coefficient of estimates are in tables 3. The results indicate that the model has a moderate to strong overall fit, with an R-squared value of 0.514. This suggests that approximately 51.4% of the variance in firm performance can be explained by green supply chain innovation alliance plays a significant role in explaining variations in firm performance within the studied context. Further the results of ANOVA revealed a highly significant F-statistic of 77.325 ($p < 0.05$), indicating that the regression model as a whole is a strong predictor of firm performance. The significant F-value suggests that the variation in firm performance explained by GSC innovation alliance, is much greater than what would be expected by chance alone.

Based on the results, the hypothesis concerning green supply chain innovation alliance can be rejected. The beta coefficient for green supply chain innovation alliance is positive and statistically significant, indicating a significant influence on firm performance ($\beta = 0.459$, $p = 0.000 < 0.05$). This suggests that higher levels of innovation alliance within the supply chain are associated with improved performance of manufacturing firms in Nairobi County. This finding is consistent with Anane (2022), who emphasizes that alliances in the green supply chain are critical for organizational success, affirming the notion that collaborative efforts enhance firm performance. Similarly, Manimay (2018) identifies that customer pressure and supplier collaboration positively impact green practices, which provides context to the results by highlighting how external influences can motivate firms to pursue beneficial innovation alliances, thus supporting the findings. Furthermore, Yook et al. (2017) found that dynamic partnerships related to green suppliers significantly benefit both environmental and financial outcomes, reinforcing the argument that such collaborations enhance overall performance. Additionally, Vijayvargy et al. (2017) observed that the implementation of green supply chain innovation alliances leads to improved operational performance across businesses of all sizes,

which aligns with the positive impact noted in the current study. Lastly, Al-Ghwayeen and Abdallah (2018) recognize a general consensus in the literature that green supply chain innovation alliances act as significant drivers of firm performance. Collectively, these studies support the assertion that green supply chain innovation alliances are correlated with enhanced performance in manufacturing firms, underscoring a robust and coherent understanding of their importance within the supply chain context.

Table 3: Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0.611	0.161		3.789	0.000
Green Supply Chain innovation alliance	0.858	0.059	0.717	14.533	0.000
Model Summary Statistics					
R	.717a				
R Square	0.514				
Adjusted R Square	0.511				
ANOVA statistic for model fitness					
F	211.209				
Sig.	.000b				

a Dependent Variable: firm performance

CONCLUSION AND RECOMMENDATIONS

In conclusion, based on the findings, green supply chain innovation alliances are key to improving firm performance. This conclusion highlights that a high level of partnership with suppliers, along with specialized expertise in green supply chain management, significantly contributes to the success of manufacturing firms. Additionally, collaboration with research institutions and universities to foster innovation in green supply chain practices is crucial, as it brings fresh perspectives and knowledge that can enhance environmental sustainability. The combined efforts of these alliances not only drive improvements in operational efficiency but also boost the overall competitive advantage of firms in the manufacturing sector.

Based on the findings, the study recommends that organizations actively enhance their green supply chain innovation alliances to improve firm performance. A practical approach involves establishing joint sustainability initiatives and regular forums for collaboration with suppliers to share best practices and innovative solutions. Policies should be developed to formalize these partnerships, emphasizing the importance of mutual accountability in achieving sustainability goals. By incentivizing suppliers to engage in green initiatives, firms can create a network of collaborative partners, which not only fosters innovation but also drives considerable improvements in operational efficiency.

Further Research

While this study has significantly enhanced our understanding of the influence of green supply chain innovation alliance on the performance of manufacturing firms in Nairobi County, several limitations highlight opportunities for future exploration. The research was limited to manufacturing firms within Nairobi County. Future studies should replicate this investigation

across different countries to enhance the generalizability of the findings and provide insights that are more reflective of diverse operational contexts. Third, given the predominant focus on the manufacturing sector, there is an opportunity for future research to examine other industries, such as banking or retail. This study primarily employed quantitative methodologies, which, while useful, may not fully capture the complexities of the relationship between green supply chain innovation alliance and firm performance. Future research could benefit from incorporating qualitative methods, such as interviews or case studies, to provide a more holistic understanding of the dynamics at play.

REFERENCES

- Al-Ghwayeen, W. S., & Abdallah, A. B. (2018). Green supply chain management and export performance: The mediating role of environmental performance. *Journal of Manufacturing Technology Management*.
- Anane, A., (2020). The Influence of Green supply chain innovation alliances Practice on Organizational Performance. 26. 43-63. 10.9734/JEMT/2020/v26i230227.
- Bataineh, A. Q. (2021). The moderating effect of supply chain eco-centricity between green supply chain management practices and firm performance. *International Journal of Procurement Management*, 14(3), 328-341.
- Bataineh, A. Q. (2021). The moderating effect of supply chain eco-centricity between green supply chain management practices and firm performance. *International Journal of Procurement Management*, 14(3), 328-341.
- Blau, P. M. (1964). Social exchange theory. Retrieved September, 3(2007), 62.
- Burki, U., & Dahlstrom, R. (2017). Mediating effects of green innovations on interfirm cooperation. *Australasian Marketing Journal (AMJ)*, 25(2), 149-156.
- Chao, C. M., Yu, C. T., Cheng, B. W., & Chuang, P. C. (2013). Trust and commitment in relationships among medical equipment suppliers: Transaction cost and social exchange theories. *Social Behavior and Personality: an international journal*, 41(7), 1057-1069.
- Chen, C. T., Lin, C. T., & Huang, S. F. (2006). A fuzzy approach for supplier evaluation and selection in supply chain management. *International journal of production economics*, 102(2), 289-301.
- Cheng, J. H., & Chen, M. C. (2016). Influence of institutional and moral orientations on relational risk management in supply chains. *Journal of Purchasing and Supply Management*, 22(2), 110-119.
- Cousins, J. J. (2021). Justice in nature-based solutions: Research and pathways. *Ecological Economics*, 180, 106874.
- Cousins, P. D., Lawson, B., Petersen, K. J., & Fugate, B. (2019). Investigating green supply chain management practices and performance: The moderating roles of supply chain ecocentricity and traceability. *International Journal of Operations & Production Management*
- Faizal, M. F. (2015). *Energy, heat transfer and economic analysis of flat-plate solar collector utilizing SiO₂ nanofluid/Mohd Faizal Fauzan* (Doctoral dissertation, University of Malaya).
- Goyal, A., & Kumar, A. (2018). Active monetary policy and the slowdown: Evidence from DSGE based Indian aggregate demand and supply. *The Journal of Economic Asymmetries*, 17, 21-40.
- Hammersley, M. (2013). *The myth of research-based policy and practice*. Sage.
- Huo, B., Flynn, B. B., & Zhao, X. (2017). Supply chain power configurations and their relationship with performance. *Journal of Supply Chain Management*, 53(2), 88-111.

- Jo, D.; Kwon, C. (2022), Structure of Green Supply Chain Management for Sustainability of Enterprises. *Sustainability*, 14, 50. <https://doi.org/10.3390/su14010050>
- Joo, H.Y. (2015) The Causal Relationship Between Environmental Collaboration and Export Performance. *Korea Trade Rev.* 2015, 40, 137–160
- Kirchoff, J. F., Tate, W. L., & Mollenkopf, D. A. (2016). The impact of strategic organizational orientations on green supply chain management and firm performance. *International Journal of Physical Distribution & Logistics Management*.
- Manimay G., (2018) "Determinants of green supply chain innovation alliances implementation and its impact on firm performance", *Journal of Manufacturing Technology Management*, <https://doi.org/10.1108/JMTM-06-2018-0168>
- Muigua, K. (2019). Reflections on Managing Natural Resources and Equitable Benefit Sharing in Kenya. *The Law Society of Kenya Journal*, 15(1), 1-42.
- Okdinawati, L., Simatupang, T. M., & Sunitiyoso, Y. (2017). Multi-agent reinforcement learning for value co-creation of collaborative transportation management (CTM). *International Journal of Information Systems and Supply Chain Management (IJISSCM)*, 10(3), 84-95.
- Pagell, M., & Wu, Z. (2009). Building a more complete theory of sustainable supply chain management using case studies of 10 exemplars. *Journal of supply chain management*, 45(2), 37-56.
- Sukati, I., Hamid, A. B., Baharun, R., & Yusoff, R. M. (2012). The study of supply chain management strategy and practices on supply chain performance. *Procedia-Social and Behavioral Sciences*, 40, 225-233.
- Syanda, K. K., & Getuno, P. (2019). INFLUENCE OF GREEN OPERATIONS STRATEGY ON PERFORMANCE OF TEA PROCESSING FIRMS IN KENYA. *Journal of Business and Strategic Management*, 4(1), 69-87.
- Thiell, M., & Hernandez, S. (2010). Logistics services in the 21st century: supply chain integration and service architecture. In *Service science and logistics informatics: Innovative perspectives* (pp. 359-378). IGI Global.
- Tseng, M. L., Tan, R. R., & Siriban-Manalang, A. B. (2013). Sustainable consumption and production for Asia: sustainability through green design and practice. *Journal of Cleaner Production*, 40, 1-5.
- Vijayvargy, L., Thakkar, J. and Agarwal, G. (2017), "Supply chain ecocentricity and performance", *Journal of Manufacturing Technology Management*, 28(3), pp. 299-323.
- Woo, C.; Kim, M.G.; Chung, Y.; Rho, J.J. (2016) Suppliers' communication capability and external green integration for green and financial performance in Korean construction industry. *J. Clean. Prod.*, 112, 483–493.
- Wu, T., Huang, S., Blackhurst, J., Zhang, X., & Wang, S. (2012). Supply chain risk management: an agent-based simulation to study the impact of retail stockouts. *IEEE Transactions on Engineering Management*, 60(4), 676-686.

- Zhang, X., Van Donk, D. P., & van der Vaart, T. (2016). The different impact of inter-organizational and intra-organizational ICT on supply chain performance. *International Journal of Operations & Production Management*.
- Zhu, Q.; Sarkis, J.; Lai, K.-H., (2013) Institutional-based antecedents and performance outcomes of internal and external supply chain ecocentricity. *J. Purch. Supply Manag*, 19, 106–11