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INFLUENCE OF REVERSE LOGISTICS ON ORGANIZATIONAL PERFORMANCE OF TEXTILE AND APPAREL FIRMS IN NAIROBI COUNTY

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ABSTRACT

This study found out the influence of reverse logistics towards organizational performance of textile and apparel firms in Nairobi County, Kenya. The study utilized natural resource based view theory. A descriptive research design was used in this research. The target population of this study was 92 textile and apparel industries in Nairobi County. The respondents were one procurement manager and one finance manager making a total of 184 respondents. The sampling frame for the target population in this research was the list of all 92 textile and apparel industries in Nairobi County. This study however conducted a census on all the 92 textile and apparel industries in Nairobi County without adopting a sampling technique. Because the sample size for sampling was insufficient, the census approach was used. The questionnaire items comprised of both closed ended and open- ended questions. This study pilot tested 10% of the target population size, which represent 9 procurement and finance managers in textile and apparel firms in Kiambu County. The research utilized descriptive statistical tools called SPSS version 26 to analyses data. In order to summarize feedback for further analyzing and enhance comparison, tables and figures were used. The study revealed a strong and statistically significant positive relationship between reverse logistics and the organizational performance of textile and apparel firms in Nairobi County. Based on these findings, it was recommended that reverse logistics should be considered a vital factor for all manufacturing firms in the twenty-first century. Additionally, the study proposed that the Kenyan Government, through NEMA, should establish rules and regulations mandating all manufacturing firms to adopt environmentally friendly practices throughout their entire supply chain.

Key Words: *Reverse Logistics, Green Technology, Supply Chain*

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INTRODUCTION

The concept of Green Supply Chain Management (GSCM) can be interpreted from various perspectives, with scholars presenting diverse definitions of this practice. GSCM involves integrating environmental considerations into supply chain management, starting from initial production processes and extending to the delivery of finished goods to consumers (Suryanto, Haseeb & Hartani, 2018). Implementing green supply chain management practices is essential for enhancing the performance of manufacturing sectors (Çankaya & Sezen, 2019).

In developing countries, particularly in Africa, some countries give importance to green procurement, including South Africa, Egypt, Algeria, Morocco, Nigeria, and Ghana. For example, South Africa has a longstanding commitment to sustainable supply chain management, with overall implementation responsibility lying with the Ministry of Infrastructure and the Environment, a federal body, supported by other state bodies responsible for implementation at regional and local government levels.

Measuring sustainable supply chain performance aims to address the environmental, social, and economic aspects of the supply chain. Numerous organizations in Kenya have realized the significance of making substantial efforts to establish successful green supply chain management strategies (John, 2018; Mbaabu, 2016). These efforts encompass environmental action plans in both inbound and outbound logistics, including production, green purchasing, eco-design, and reverse logistics. These programs involve all relevant stakeholders, such as end users, service contractors, vendors, materials suppliers, and distributors collaborating to minimize negative environmental impacts (Mutisya & Kinoti, 2017).

Kenyan organizations adopt green supply chain practices for various reasons, ranging from energy conservation to reducing annual expenses (Mugo, 2017). Prominent companies like Standard Chartered Bank Kenya's Head Office in Nairobi have embraced environmentally friendly buildings with energy-efficient designs. Another sustainability-driven Kenyan company is Safaricom, which publishes an annual sustainability report since 2012 to raise awareness about its social, economic, and environmental impacts (Safaricom, 2018).

Over time, the importance of green supply chain management (GSCM) has grown, leading most businesses to engage in GSCM activities to enhance efficiency and bolster their overall brand reputation (Mugo, 2017). According to Zhu, Feng, and Choi (2017), GSCM initiatives encompass internal environmental management, green procurement, reverse logistics, investment recovery, customer cooperation on environmental initiatives, eco-design, adoption of environmental management systems such as ISO 14001, green manufacturing, green marketing and packaging, green suppliers, energy conservation, and environmental participation.

Typically, in strategic orientation studies, these performance indicators are analyzed separately. These metrics are selected because they align with different aspects of performance under various classification criteria, including adaptability, effectiveness, financial versus operational, long-term and short-term versus medium-term (González-Benito et al., 2013). According to Scur and Barbosa (2017), the first method for assessing performance is to compare financial and operational measurements. Financial measures such as profitability, sales, and market share growth are observable accounting indicators, while operational measures like customer satisfaction, firm image/reputation, and new product success are intermediate results that should lead to economic success (Zaid, Jaaron & Bon, 2018).

Kenya is currently experiencing significant transformations in its textile and garment manufacturing, commerce, and consumption. The traditional domestic textile manufacturing, which was once the foundation of post-independence industrial policies, ceased in 2014. However, there has been remarkable growth in export apparel

production, driven by changes in the international regulatory environment, including trade agreements with the European Union (EUCC) and the United States (African Growth and Opportunity Act - AGOA) (cited in Omai, Ngugi & Kiarie, 2018). Additionally, the increased importation of used clothes, which was previously prohibited until around 2017, has also influenced the productivity, business, and apparel consumption in Kenya.

Statement of the Problem

Balasubramanian and Shukla (2017) assert that environmental sustainability is a crucial concern in corporate activities. In addition to global warming and air pollution, waste and emissions from supply chain production are major environmental challenges. However, in Kenya, the current green supply chain management approach lacks efficiency in ensuring environmental performance. Practices such as Green manufacturing technology, green procurement, green distribution, and reverse logistics are not adequately considered. Studies by John (2018) and Onyinkwa and Ochiri (2016) reveal that most Kenyan companies lack a dedicated environmental unit to manage emissions, and government regulations are not stringent enough, leading to a lack of attention to environmental performance and resulting in serious waste issues affecting the nearby environment.

Various studies have explored the impact of green supply chain management, with a focus on issues like the implementation of green delivery chains. Mutisya and Kinoti (2017) identified several challenges in implementing GSC, including a lack of standards, awareness, organizational sustainability, implementation programs, and communication planning within organizations. Human activities have been identified as significant contributors to global warming (Mugo, 2017), and the widespread adoption of capitalism within organizations has been linked to the exploitation of environmental resources. Odock (2016) argues that capitalist marketing practices in firms to supplement modernized routines have harmed the environment through resource exploitation.

Despite these studies, there remains a knowledge gap regarding the role of reverse logistics, green procurement, green manufacturing technology, and green distribution in the organizational performance of Textile and Apparel firms in Nairobi County. Therefore, this study investigated the influence of reverse logistics on the organizational performance of textile and apparel firms in Nairobi County, Kenya, considering the backdrop of environmental sustainability concerns.

Research Objective

The study sought to investigate the influence of reverse logistics towards organizational performance of Textile and Apparel firms in Nairobi County, Kenya.

The study tested the following hypothesis:

- H_0: Reverse Logistics has no significant role towards organizational performance of Textile and Apparel firms in Nairobi County.

LITERATURE REVIEW

Theoretical Review

Natural Resource Based View Theory

Scientists in the field of management have long recognized that having the upper hand depends on the alignment of certain internal (hierarchical) capabilities with changing external (natural) conditions (Mandoza-Fong & Cortes-Robles, 2012). According to Hart (1995), referenced in Liu and Zhu (2016), a genuine theory, referred as the resource-based view of the business, did not emerge until the 1950s, describing the linkages between firm resources, capacities, and competitive edge. According to Porter (1989), the alignment of internal and external contexts results in cost leadership and quality differentiation, resulting in competitive advantage.

Regarding that, it was pointed out that "competing for the future" is a critical indicator of competitive advantage. Hamel and Prahalad (1994) stated that, company must strategize not only for current/short-term profitability and competitive advantage, as well as for long-term profitability and competitive

advantage. The asset-based perspective establishes that the upper hand may be managed, just as the abilities that enable it are supported by assets that are not successfully imitated by rivals (Hart, 1995).

Recent global environmental problems have prompted an examination of human economic activity, particularly manufacturing. Population growth is expected to increase over the next 40 years, leading to an increased production. This expansion, according to Gore (1992), may not be environmentally sustainable. Such output will put undue strain on the planet's natural systems (Commoner, 1992). As a result, economic activity must shift or the planet's essential natural systems will suffer irreversible damage. This theory also forms the basis for the eco-design variable as the natural environment is a key success factor especially in the Textile and Apparel industry.

Empirical Review

Reverse Logistics

More than just recycling containers and packing materials are involved in reverse logistics (Sathish & Jayaprakash, 2017). Recycling waste items, tracking logistical returns, and proper garbage disposal are all part of reverse logistics. Redesigning packaging to utilize less material or lowering transportation-related energy and pollution are significant actions, but they may be secondary to the true relevance of reverse logistics as a whole. Reverse logistics is a radically confusing since it involves the client returning the commodity to the manufacturer (Prajapati, Kant & Shankar, 2019).

Reverse logistics might be caused by a consumer complaint, a damaged product, or even poor after-sales support, among other things (Bazan, Jaber & Zanoni, 2016). When it comes to environmental challenges, remanufacturing and recycling are inextricably related. From their opinion, Srivastava's article on the topic is the most effective. Recycling is a critical role in reverse logistics since it gets involved in the stage of raw - materials recovery so that it can be recycled in the manufacturing process (Morgan & Autry, 2007). (2016).

Economic and regulatory issues, according to Srivastava, are the primary drivers of recycling (Hammes & Herazo, 2020). This is especially true in the car industry, which is involved in recycling for economic reasons, but the electronic industry is more concerned with recycling for regulatory reasons. There is discussion of re-manufacturing when it comes to environmental manufacturing that relies on recycling. Recycling is a tough problem to solve, especially because it is hard to forecast the rate of interest with any precision. Some few nations attempted this effort, like certain Nordic Nations (Morgan & Autry, 2016).

Nations like Egypt, Africa's largest consumer of electronic garbage, are enthusiastic about this strategy but lack the requisite legislation and financial resources to implement it fully (Hammes & Herazo, 2020). Reverse logistics, as per Sathish and Jayaprakash (2017), is a mechanism in which a producer accepts formerly supplied goods from the point of consumption. It's the process of recovering commodities from the end user in order to capture value or dispose of it properly. Assortment, combined item checking, distribution, and disposal are all activities (Sangwan, 2017).

According to Mahadevan (2019), green logistics pertains to any endeavor to examine and mitigate the influence of logistics activities on employee productivity. Between the production point to the consumption point, all operations involving movements of services, knowledge, and commodity are involved. The objective is to increase the company's long-term worth by ensuring environmental sustainability. Green logistics began in the mid-1980s as a concept to classify logistics systems and practices using sophisticated technology in order to reduce environmental destruction during operations (Sangwan, 2017).

In recent years, reverse logistics has become a major worry for scholarships and corporations (Mahadevan, 2019). Reverse logistics, according to Bazan et al. (2016), is a procedure in which a producer collects previously sent merchandise from a customer for usage and remanufacturing. It's a

process of gathering items from a tipper in order to capture the price or properly dispose of them. A variety of functions are done, including assortment, distribution, integrated inspection, distribution, disposal, and reprocessing (Bazan, et al., 2016).

Reverse logistics gives businesses a competitive advantage while also improving their financial performance (Morgan & Autry, 2016). They discovered that enterprises who used reverse logistics in the Philippines had a completely different image of their products, providing them a competitive edge. Their research focused mostly on the financial consequences of structure performance.

In Kenya, the Reverse Provision Initiatives are very important, and they are very essential for any firms to confront the increasing ambiguity in such tasks (Rachih, & Chiheb, 2019). As a result, the demand for data distribution flexibility will rise in such case, since it aids in the reduction of uncertainty (Swafford, 2003). Reverse logistics enables a company to improve the accessibility of options, lowering uncertainty and increasing decision-making (Mahadevan, 2019). Reverse logistics initiatives are utilized to improve systems and performing maintenance that help firms construct greater selections, reduce reaction times, and increase data dissemination liability (Rachih & Chiheb, 2019).

Organizational Performance

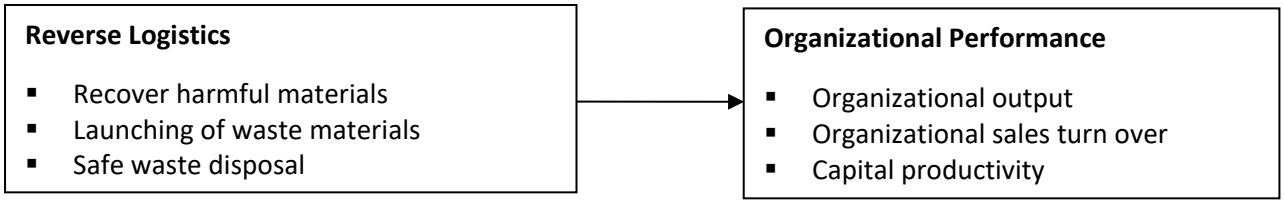
The idea of quantifying the performance of a given given course of action and then adjusting the process or procedure to enhance outcome, enhance productivity, or enhance the performance of the process or system is known as organizational performance. Among the most prevalent organizational issues, according to John (2018), is determining how to evaluate performance outcomes of the firm. Different firms utilize different indicators, however the most prevalent ones are qualitative factors including employee satisfaction or quantitative factors includes profitability, operational expenses, and revenue growth.

Singh and Kumar (2020) highlighted that organizational performance is how well a firm attains its market-oriented targets along with its financial goals. Performance is a determinant in providing competitive advantage to organizations in stiff competition in the market and hence the firm takes advantage of its competitors and performs better in the business. Cost of logistics is one of the most discussed factors of firm performance.

Fang and Zhang (2018) considered cost performance as a major part of the firm performance. The part of logistics of the total costs may vary significantly but it is appropriately 10% of sales in industrialized nations, though dependent on the source and measurement methods used. Various measures of service performance are also considered to be an important part of the firm performance along with the most discussed cost performance.

The measures of output performance according to Mafini and Muposhi (2017) include fill rate, on-time deliveries, stock out and consumer response period, manufacturing lead time, shipping errors and consumer complaints. Similar types of measures are included by Fang and Zhang (2018) as part of the operational level performance in source and deliver initiatives. According to Jaaffar and Kaman (2020) asset utilization in some form or another is usually mentioned among the critical performance metrics to the organization together with service performance.

Conceptual Framework



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework
Source: Author (2022)

METHODOLOGY

A descriptive research design was employed in this study, which aims to report what is happening or has happened to the variables under study in the current situation. The target population consisted of 92 textile and apparel industries in Nairobi County (Kenya Association of Manufacturers [KAM], 2018). For this research, the sampling frame for the target population was the list of all 92 textile and apparel industries in Nairobi County. This study opted for a census approach, encompassing all 92 Textile and Apparel industries in Nairobi County without using a sampling technique. The study employed questionnaires as the primary data collection instrument. To facilitate grouping the feedback into different categories, the collected data were coded. The data collected were of a quantitative nature, and for analysis, descriptive methods were employed.

RESULTS

Descriptive Analysis

Descriptive research entails using statistical procedures to characterize the population under investigation. The responses to each of the items of the means, as well as the standard deviation of the items, were included in this segment.

Reverse Logistics Towards Organizational Performance

The study sought to examine the influence of reverse logistics towards organizational performance of Textile and Apparel firms in Nairobi County. Results are show in figure 1 below.

Table 1: Reverse logistics towards organizational performance

Opinion	SD	D	N	A	SA
Reverse logistics enable us to recovers materials that are harmful to environment	9 (6.3%)	1 (0.7%)	0%	34 (23.6%)	100 (69.4%)
Reverse logistics ensures launching of recycle system in our organization	0%	0%	0%	27 (18.8%)	117 (81.3%)
Recycling of waste products improves the cost of our products	0%	0%	0%	65 (45.1%)	79 (54.9%)
Recycling of waste products improves our product quality hence recouping maximum value	0%	0%	0%	108 (75.0%)	36 (25.0%)
Disposal of waste products enhances user satisfaction through safe disposal	0%	0%	24 (16.7%)	62 (43.1%)	58 (40.3%)
Reverse logistics ensures use of packaging materials that can be reused for other purposes in our organization	0%	0%	11 (7.6%)	35 (24.3%)	98 (68.1%)
Disposal of waste products enhances reduced costs through safe disposal and compliance	0%	0%	20 (13.9%)	109 (75.7%)	15 (10.4%)

Source: Author (2022)

Based on the study findings presented in Table 1, a significant majority of the respondents (93.0%) agreed that reverse logistics enables the recovery of materials harmful to the environment. Only 7.0% of the respondents disagreed with this opinion. Furthermore, all of the respondents (100.0%) agreed that reverse logistics facilitates the implementation of a recycling system in their organization, with none expressing disagreement or remaining neutral on the statement.

Similarly, all of the respondents (100.0%) agreed that recycling waste products leads to an improvement in the cost of their products, and again, none of the respondents were neutral or disagreed with this opinion. Likewise, all of the respondents (100.0%) agreed that recycling waste products enhances product quality and helps recoup maximum value, with no neutral or disagreeing responses.

Regarding the disposal of waste products, 83.4% of the respondents agreed that it enhances user satisfaction through safe disposal, while only 16.6% remained neutral on this opinion. Additionally, most of the respondents (92.4%) agreed that reverse logistics ensures the use of packaging materials that can be reused for other purposes in their organization, and 7.6% were neutral to this statement. Finally, most of the respondents (86.1%) agreed with the opinion that disposal of waste products enhances cost reduction through safe disposal and compliance, while 13.9% were neutral to this statement.

Organizational performance of Textile and Apparel firms

The study sought to find out the organizational performance of Textile and Apparel firms in Nairobi County. The results are as shown in table 2 below.

Table 2: Organizational performance of Textile and Apparel firms

Opinion	SD	D	N	A	A
Green supply chain management leads to improved organizational output	3 (2.1%)	0%	18 (12.8%)	51 (35.4%)	72 (50.0%)
Green supply chain management leads to organizational sales turn over	24 (16.7%)	0%	28 (19.4%)	35 (24.3%)	57 (39.6%)
Green supply chain management leads to quality of products	4 (2.8%)	0%	17 (11.8%)	70 (48.6%)	33 (22.9%)
Green supply chain management leads to effective waste control	0%	3 (2.0%)	0%	117 (81.3%)	24 (16.7%)
Green supply chain management leads to compliance with environmental regulations	7 (4.9)	4 (2.8%)	21 (14.6%)	56 (38.9%)	56 (38.9%)

Source: Author (2022)

Based on the study findings presented in Table 2, a significant majority of the respondents (83.4%) agreed with the opinion that green supply chain management leads to improved organizational output. Only 12.8% of the respondents were neutral on this statement, while merely 2.1% strongly disagreed with the opinion. Furthermore, 63.9% of the respondents agreed that green supply chain management contributes to organizational sales turnover, with 19.4% remaining neutral and 16.4% disagreeing with this opinion. Moreover, 71.5% of the respondents agreed that green supply chain management leads to improved product quality, while 11.8% were neutral and only 2.8% strongly disagreed with this opinion. Additionally, a significant majority of the respondents (98.0%) agreed that green supply chain management is effective in waste control, with only 2.0% strongly disagreeing with this opinion. Lastly, most of the respondents (77.8%) agreed that green supply chain management ensures compliance with environmental regulations, while 14.6% were neutral and only 4.9% disagreed with this opinion.

Hypotheses Testing

H_0: Reverse Logistics has no significant role towards organizational performance of Textile and Apparel firms in Nairobi County.

The primary aim of this study was to assess the impact of reverse logistics on the organizational performance of Textile and Apparel firms in Nairobi County. According to the findings, a robust and statistically significant positive relationship was found between reverse logistics and organizational performance of Textile and Apparel firms in Nairobi County. As a result, the hypothesis, which proposed that reverse logistics does not significantly influence the organizational performance of Textile and Apparel firms in Nairobi County, was rejected, and the alternative hypothesis, which stated that reverse logistics has a significant influence on organizational performance, was accepted.

CONCLUSION AND RECOMMENDATION

Regarding the impact of reverse logistics on the organizational performance of textile and apparel firms in Nairobi County, the study identified a robust and statistically significant positive relationship. This implied that when Textile and Apparel firms adopt reverse logistics, they are likely to experience improvements in their performance.

The study confirmed that it enables the recovery of materials harmful to the environment and facilitates the launch of a recycling system within the organization. Recycling waste products not only improves product cost but also enhances product quality, allowing for maximum value recovery. Disposal of waste products is executed safely, leading to increased user satisfaction. The adoption of reverse logistics also involves the use of reusable packaging materials within the organization.

Based on the study's findings, it is advisable to consider reverse logistics as a fundamental aspect for all manufacturing firms in the twenty-first century. The study recommended that Textile and Apparel firms in Kenya should implement reverse logistics throughout their operations due to the economic advantages associated with such practices. Additionally, the study suggested that the Kenyan Government, through NEMA (National Environmental Management Authority), should establish rules and regulations making it mandatory for all manufacturing firms to adopt environmentally friendly practices across the entire supply chain.

Implication for Further Study

The findings indicated that not all Textile and Apparel firms in Nairobi County Kenya has adopted reverse logistics. A study should be conducted to find out reasons why some of Textile and Apparel firms in Nairobi County have not implemented the practices. A similar study should be conducted out in other sectors including the service industry.

REFERENCES

Balasubramanian, S., & Shukla, V. (2017). Green supply chain management: an empirical investigation on the construction sector. *Supply Chain Management: An International Journal*.

Bazan, E., Jaber, M. Y., & Zanoni, S. (2016). A review of mathematical inventory models for reverse logistics and the future of its modeling: An environmental perspective. *Applied Mathematical Modelling*, *40*(5-6), 4151-4178.

Bon, A. T., Zaid, A. A., & Jaaron, A. (2018, March). Green human resource management, Green supply chain management practices and Sustainable performance. In *8th International Conference on Industrial Engineering and Operations Management (IEOM),(Bandung, Indonesia) March* (pp. 6-8).

Bor, J. K. M. (2021). *Green Supply Chain Management Practices and Performance of Food and Beverage Processing Sector in Kenya* (Doctoral dissertation, JKUAT-COHRED).

Çankaya, S. Y., & Sezen, B. (2019). Effects of green supply chain management practices on sustainability performance. *Journal of Manufacturing Technology Management*.

Fang, C., & Zhang, J. (2018). Performance of green supply chain management: A systematic review and meta-analysis. *Journal of Cleaner Production*, *183*, 1064-1081.

Feng, M., & Xiao, Z. (2018). Green supply chain management and financial performance: The mediating roles of operational and environmental performance. *Business strategy and the Environment*, *27*(7), 811-824.

Foo, P. Y., Lee, V. & Ooi, K. B. (2018). A gateway to realising sustainability performance via green supply chain management practices: A PLS–ANN approach. *Expert Systems with Applications*, *107*, 1-14.

Geng, R., Mansouri, S. A., & Aktas, E. (2017). The relationship between green supply chain management and performance: A meta-analysis of empirical evidences in Asian emerging economies. *International Journal of Production Economics*, *183*, 245-258.

Green, K. W., Inman, R. A., Sower, V. E., & Zelbst, P. J. (2019). Impact of JIT, TQM and green supply chain practices on environmental sustainability. *Journal of Manufacturing Technology Management*.

Habib, M. A., & Bao, Y. (2019). Impact of knowledge management capability and green supply chain management practices on firm performance. *International Journal of Research in Business and Social Science*, *8*(6), 240-255.

Habib, M. A., Bao, Y., & Ilmudeen, A. (2020). The impact of green entrepreneurial orientation, market orientation and green supply chain management practices on sustainable firm performance. *Cogent Business & Management*, *7*(1), 1743616.

Hammes, G., & Herazo, J. C. M. (2020). Evaluation of the reverse logistics performance in civil construction. *Journal of Cleaner Production*, *248*, 119212.

Jaaffar, A. H., & Kaman, Z. K. (2020). Green supply chain management practices and environmental performance: A study of employee's practices in Malaysia Chemical Related Industry. *Journal of Environmental Treatment Techniques*, *8*(1), 125-131.

John, A. (2018). Effect of Green Supply Chain Management Practices on the performance of manufacturing firms in Kenya. *GSJ*, *6*(8), 669.

Khan, S. A. R., & Khan, S. S. (2017). The impact of green supply chain on enterprise performance: In the perspective of China. *Journal of Advanced Manufacturing Systems*, *16*(03), 263-273.

Khan, S. A. R., & Qianli, D. (2017). Impact of green supply chain management practices on firms' performance: an empirical study from the perspective of Pakistan. *Environmental Science and Pollution Research*, *24*(20), 16829-16844.

Laari, S., Töyli, J., & Ojala, L. (2017). Supply chain perspective on competitive strategies and green supply chain management strategies. *Journal of Cleaner Production*, *141*, 1303-1315.

Longoni, A., Luzzini, D., & Guerci, M. (2018). Deploying environmental management across functions: the relationship between green human resource management and green supply chain management. *Journal of Business Ethics*, *151*(4), 1081-1095.

Mafini, C., & Muposhi, A. (2017). The impact of green supply chain management in small to medium enterprises: Cross-sectional evidence. *Journal of Transport and Supply Chain Management*, *11*(1), 1-11.

Mahadevan, K. (2019). Collaboration in reverse: a conceptual framework for reverse logistics operations. *International Journal of Productivity and Performance Management*.

Mbaabu, D. K. (2016). A Concept Paper of Green Supply Chain Management Practices in Kenya. *DBA Africa Management Review*, *6*(3).

Morgan, T. R., & Autry, C. W. (2016). Developing a reverse logistics competency: The influence of collaboration and information technology. *International Journal of Physical Distribution & Logistics Management*.

Mugo, B. N. (2017). *Effect of Green Supply Chain Management Practices on Performance of Tea Factories in Central Region Kenya* (Doctoral dissertation, Kca University).

Mutisya, F. M., & Kinoti, J. (2017). Effect of Green Supply Chain Practices On Performance of Large Chemical Manufacturing Firms in Nairobi County Kenya. *International Journal of Supply Chain Management*, *2*(2), 1-21.

Odock, S. O. (2016). *Green supply chain management practices and performance of ISO 14001 certified manufacturing firms in East Africa* (Doctoral dissertation, University of Nairobi).

Omai, K. M., Ngugi, P. K., & Kiarie, D. M. (2018). Effect of supply chain practices on sustainable supply chain performance in Kenyan textile and apparel industry.

Onyinkwa, C., & Ochiri, G. (2016). Effects of Green Supply Chain Management Practices on Competitiveness of Firms in the Food and Beverage Sector in Kanya. *European Journal of Business and Management*, *8*(14), 15-21.

Prajapati, H., Kant, R., & Shankar, R. (2019). Bequeath life to death: State-of-art review on reverse logistics. *Journal of cleaner production*, *211*, 503-520.

Rachih, H., & Chiheb, R. (2019). Meta-heuristics for reverse logistics: A literature review and perspectives. *Computers & Industrial Engineering*, *127*, 45-62.

Sangwan, K. S. (2017). Key activities, decision variables and performance indicators of reverse logistics. *Procedia Cirp*, *61*, 257-262.

Sathish, T., & Jayaprakash, J. (2017). Optimizing supply chain in reverse logistics. *International Journal of Mechanical and Production Engineering Research and Development*, *7*(6), 551-560.

Scur, G., & Barbosa, M. E. (2017). Green supply chain management practices: Multiple case studies in the Brazilian home appliance industry. *Journal of cleaner production*, *141*, 1293-1302.

Singh, A., & Trivedi, A. (2016). Sustainable green supply chain management: trends and current practices. *Competitiveness Review*.

Singh, N. K., Pandey, P. M., Singh, K. K., & Sharma, M. K. (2016). Steps towards green manufacturing through EDM process: a review. *Cogent Engineering*, *3*(1), 1272662.

Suryanto, T., Haseeb, M., & Hartani, N. H. (2018). The correlates of developing green supply chain management practices: Firms level analysis in Malaysia. *International Journal of Supply Chain Management*, *7*(5), 316.

Wang, W., & Yu, H. (2020). Global, regional, and national estimates of target population sizes for covid-19 vaccination: descriptive study. *bmj*, *371*.

Wang, Z., Wang, Q., Zhang, S., & Zhao, X. (2018). Effects of customer and cost drivers on green supply chain management practices and environmental performance. *Journal of Cleaner Production*, *189*, 673-682.

Zaid, A. A., Jaaron, A. A., & Bon, A. T. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. *Journal of cleaner production*, *204*, 965-979.

Zhu, Q., Feng, Y., & Choi, S. B. (2017). The role of customer relational governance in environmental and economic performance improvement through green supply chain management. *Journal of Cleaner Production*, *155*, 46-53.

Zhu, Q., Qu, Y., Geng, Y., & Fujita, T. (2017). A comparison of regulatory awareness and green supply chain management practices among Chinese and Japanese manufacturers. *Business Strategy and the Environment*, *26*(1), 18-30.