

REVERSE LOGISTICS MANAGEMENT AND PERFORMANCE OF BUILDING AND CONSTRUCTION MANUFACTURING FIRMS IN KENYA

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Abstract: The aim of this paper is to establish the influence of reverse logistics on performance of building and construction manufacturing firms in Kenya. The study also sought to establish the moderating effect of firm characteristics on the relationship between reverse logistics and performance of building and construction manufacturing firms in Kenya. To achieve this, the study was anchored on technology acceptance theory and the economic theory of firm characteristics. This study adopted a descriptive research design approach. This method is preferred because it allows an in-depth study of the subject. The study population was 54 building and construction manufacturing firms in Kenya. The sample size was 270 respondents which was determined through purposive sampling targeting key departments in the 54 companies. Primary data was collected using a structured questionnaire. Qualitative data was analyzed through content analysis whereas quantitative data was analyzed through descriptive statistics and inferential statistics. The findings were presented in tables, pie-charts and bar-graphs. The results revealed that green logistics through reverse logistics significantly influenced the performance of the building and construction manufacturing firms in Kenya. The study concluded that through embrace of reverse logistics, performance of the manufacturing firms was obtained. It is recommended that the management of the building and construction manufacturing firms embraces reverse logistics through which they can save on costs, enhance sustainability and promote performance.

Keywords: Green Logistics, Reverse Logistics, Firm Characteristics, Firm Performance, Building and Construction Manufacturing Firms.

1. INTRODUCTION

1.1 Background of the Study

Green logistics and other sustainable organizational practices are getting acceptance in the modern era as economies and countries are turning from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs). One of fundamental aspects of green logistics is reverse logistics. According to Olorunniwo and Li (2016), reverse logistics is the process of ensuring that the movement of goods from suppliers to the firm and from the firm to the end users is done in a manner that observes green energy in a bid to prevent the environment pollution as well as saving on costs so as to enhance firm performance and effectiveness. Adopting reverse logistics is one of the green logistics management strategies that help to reduce the environmental and energy footprint of freight distribution, which focuses on material

handling, waste management, packaging and transport (Meysam, 2013). It is part of the aspects of green logistics that consists of all activities related to the eco-efficient management of the forward and reverse flows of products and information between the point of origin and the point of consumption whose purpose is to meet or exceed customer demand (Muraguri & Musyimi, 2015).

Keller and Keller (2014) define reverse logistics, also known as sustainable packaging, is the use of materials and manufacturing methods for the packaging of goods that has a low impact on both energy consumption and on the environment. Sustainable packaging is created in an environmentally aware manner, using biodegradable and recyclable materials, and is energy efficient (Vamshidhar, 2013).

Azizi and Tarhandeh (2014) contend that returns management is the supply chain management process by which activities associated with returns, green packaging, gatekeeping, and avoidance are managed within the firm and across key members of the supply chain (Tozay, 2012). The correct implementation of this process enables management not only to manage the reverse product flow efficiently, but to identify opportunities to reduce unwanted returns and to control reusable assets such as containers.

Recycle management is the way toward changing over waste materials into new materials and items. It is an option in contrast to regular waste transfer that can spare material and help lower ozone depleting substance emanations (Przychodzen, 2013). Reusing can counteract the misuse of conceivably valuable materials and decrease the utilization of crisp crude materials, consequently lessening: vitality use, air contamination from burning and water contamination (Mickoleit, 2010). Reusing is a key segment of current waste decrease and is the third segment of the - diminish, reuse and reuse squander pecking order. Along these lines reusing goes for natural manageability by substituting crude material contributions to and diverting waste yields out of the monetary system (McKinnon, 2012).

The Kenya Association of Manufacturers (2019) classifies companies that deal with the manufacture and production of building and construction materials under building and construction manufacturing companies. The companies deal with products such as cement manufacturing, manufacture of steel and iron, manufacture of paints and assembling of building materials among other products. Regulation of building construction in Kenya is done through a statutory authority known as the National Construction Authority (NCA), whose function is to establish and oversee the building and construction manufacturing firms and coordinate its development. The performance of the building and construction manufacturing firms is integral to the continued success of the country's economy by supporting other critical sectors such as the infrastructural development.

1.2 Statement of the Problem

Building and construction manufacturing firms in Kenya have been known to be critical economic pillar with immense contribution to the GDP and the overall job creation (GOK, 2018). With the current government goals (Big-Four agenda), the building and construction manufacturing sector stands at the core of meeting these goals through provision of housing materials as well as contribution to manufacturing sector which are among the four (4) agendas by the Kenyan Government (GOK, 2018). However, despite the merit surrounding the building and construction manufacturing firms in Kenya, the firms have continually recorded a surge decline in performance over the past five years (KAM, 2017). According to KAM report (2017), most of the manufacturing companies in building and construction sector recorded over 15% decline in their annual turnover while the sector lost over 2.8% of its market share between 2013 and 2017. This is despite the continued growth of urban centres and demand for housing and related infrastructure in the country. Kaungeria (2020) notes that the growth in the building and construction manufacturing firms may not replicate the performance of construction manufacturing companies, since the clients and the companies that manufacture the construction materials are two distinct parties.

Green logistics through reverse logistics has been considered as a major approach in promoting sustainability of the supply chain management through which organizational performance is enhanced as well as meeting the environment conditions of the modern day World (UNEP, 2018). Empirical studies have revealed mixed results on the relationship between green logistics and firm performance. Vermeulen (2015) and Qureshi, Rasli and Zaman (2016) found that green logistics is an aspect of green supply chain that has a significant influence on the firm performance through cost-saving and enhancing efficiency and effectiveness. In the contrary, Gopal and Thakkar (2015) and Jaafar and Tajuddin (2016) found that green logistics had no significance influence on the firm performance but instead increased the operational costs hence minimizing the profit margins.

From the review herein therefore, it is clear that the performance of building and construction manufacturing firms in Kenya is crucial but still remains an untapped area as far as research is concerned. The evidence shows that little has been done to establish the relationship between green logistics through reverse logistics and performance of the sector while the available literature shows conflicting results. It is on this merit that the study seeks to establish the influence of reverse logistics as one of the aspects of green logistics on performance of building and construction manufacturing companies in Kenya.

1.3 Objectives of the Study

- i. To establish the effect of reverse logistics on performance of building and construction manufacturing firms in Kenya
- ii. To examine the moderating effect of firm characteristics on the relationship between reverse logistics and performance of building and construction manufacturing firms in Kenya.

1.4 Research Hypotheses

The study was guided by the following alternative hypotheses:

1. H_{A1} : Reverse logistics has a significant effect on the performance of building and construction manufacturing firms in Kenya
2. H_{A2} : Firm characteristics has a moderating effect between reverse logistics and performance of building and construction manufacturing firms in Kenya

2. LITERATURE REVIEW

2.1 Reverse Logistics and Firm Performance

A study by McKinnon and Whiteing (2010) on green logistics: improving the environmental sustainability of logistics, described the overlap between green logistics and green packaging. Specifically, the end-of-life product disposition activities that provide environmental-friendly outcomes such as recycling, a total of one hundred and thirty eight (138) papers both from sustainability and green Logistics literature published over a period of ten (10) years (2005-2014) were selected, shortlisted, categorized and analysed. The study found out that there had been a consistent increase in the number of publications in green logistics management in the past decade, due to increased awareness and concern among companies and various stakeholders for the environmental protection and sustainability.

In a study by Saman, Seman, Zakuan, Jusoh, Shoki and Arif (2012) on impact of reverse logistics on hierarchical execution, there was proof that organizations that attention on manageability issues beat their partners in the long haul both in the securities exchange and bookkeeping execution. Saman *et al.*, (2016) in their investigation, gives a portion of the green logistics the executives rehearses that organizations may actualize to improve their presentation. These green logistics the board measurements and things have been founded on past writing that tended to different parts of green logistics the executives. A depiction of the green logistics the board practices and execution develops is given beneath: There is understanding inside the writing that natural administration rehearses in the association are a key to improve endeavor execution.

Gimenez and Tachizawa (2012) found that twenty five (25) percent of providers accomplished cost investment funds connected to the reusing and renovation programs which is one of the activities of green logistics. By driving out wasteful aspects from business procedures is great business practice and it decreases costs. For example, in the assembling area, presenting review and returns arrangement projects lessens vitality utilization and emanations related with generation, and builds efficiency meaning diminished expenses.

In an examination led in UK by Mentzer and Cook (2015), it was discovered that clients discovered items from organizations which grasped switch logistics to be all the more engaging them. Eighty two (82) percent of the clients liked to purchase items from these organizations regardless of whether this alternative was increasingly costly. This implies by clients purchasing more it meant expanded deals for these organizations which affected on their bottom line directly.

2.2 Firm Characteristics

The firm characteristic anomaly is connected with firm size, often measured as market value of equity, board composition and age of the firm. This anomaly is often referred to as the small firm effect and it is the discussion emerged from empirical observations concerning small firms generating a higher expected return than what is expected by the capital

asset pricing model. Chia, Hui and McAleer (2013) studied the moderating effect of firm characteristics on the relationship between firm strategy implementation and performance. The empirical findings confirm that there have been important changes in the volatility size effects for firm performance, regardless of firm size and estimation period. Furthermore, the risk premium reveals insignificant estimates in both time periods, while asymmetric effects are found to exist only for large firms after the policy reform.

Shafana, Fathima and Jariya (2013) carried out a study on the relationship between stock returns and firm size, and book-to-market equity: Empirical evidence from selected companies listed on Milanka Price Index in Colombo Stock Exchange from 2005-2014. Using CAPM model book to market equity only has significant negative role in behaviour of stock returns of financial companies as well as non-financial companies while firm size does not have significant relation with stock returns of financial and non-financial companies and selected two firm specific factors highly explain the behaviour of stock returns of financial companies than non-financial companies.

Clayton, Dempsey and Madhu (2006) examined the inter-relationships between firm size, liquidity, idiosyncratic volatility and their relation to a stock's beta and return performance for Australian equities. They found no relationship between beta, firm size, liquidity or idiosyncratic volatility and stock returns for large stocks. However, the smallest capitalized stocks markedly outperform the largest capitalized stocks, and for such small capitalized stocks those with greater idiosyncratic volatility have markedly superior returns.

Banafa (2016) analyzed the effect of leverage, liquidity, and firm size on financial performance of listed non-financial firms in Kenya during the period 2009-2013. The relationship with financial performance (ROA) and ROE was established to be negative relationship. Gu (2015) investigated Size and Book-to-Market Factors in Returns found that firm size and the book-to-market of equity explain a large portion of the average excess returns on common stocks.

2.3 Theoretical Review

Theory of Technology Acceptance Model (TAM)

The Theory of Technology Acceptance Model (TAM) helped in determining the influence of reverse logistics on performance of the building and construction manufacturing firms In Kenya. The TAM, firstly proposed by (Davis, 1986). The theory posits that an individual considers the ramifications of his/her activity before choosing whether to take part in certain conduct. It additionally sets that the primary determinant of person's conduct is goal. The reason of TAM is that individuals conduct expectation to acknowledge and really utilize a specific innovation dictated by two builds in particular; saw handiness and saw usability (Davis, 1989). User's frame of mind and conviction as proposed by TAM is seen to be an (Yu & Ramanathan, 2015) where Procurement Information Systems is a business-to-business (B2B) purchasing practice that utilizes electronic procurement to identify potential sources of supply, to purchase goods and services, to transfer payment, and to interact with suppliers (Toke, Gupta & Dandekar, 2012).

Economic Theory of Firm Characteristics

The economic theory explains that increasing firm size allows for incremental advantages because the size of the firm enables it to raise the barriers of entry to potential entrants as well as gain leverage on the economies of scale to attain higher profitability. As contended by Steven, Glenn and Bruce (2008), larger firms have diverse capabilities, the abilities to exploit economies of scale and scope and the formalization of procedures which therefore put them at a better position to be more competitive and attract higher rate of stock-buyers. These characteristics, by making the implementation of operations more effective, allow larger firms to generate superior performance relative to smaller firms (Amato and Wilder, 1990). Moreover, the size of a firm is correlated with market power, and along with market power inefficiencies are developed, leading to relatively inferior performance.

Arguably, assets pricing in larger firms in terms of assets base and customer base, is likely to attract more investors who may feel that the larger firms have lesser risks as compared to the smaller firms. According to Rajab and Handley-Schachler (2009), the motive surrounding any investor is to have his or her capital put in a place where higher returns are expected and this according to the economic theory is the essence part that bigger organizations holds a upper hand than the smaller ones. The theory is therefore fit to describe and patronage the fifth objective of the study which is to determine the moderating effect of firm characteristics on the relationship between reverse logistics and performance of building and construction manufacturing firms in Kenya.

2.4 Conceptual Framework

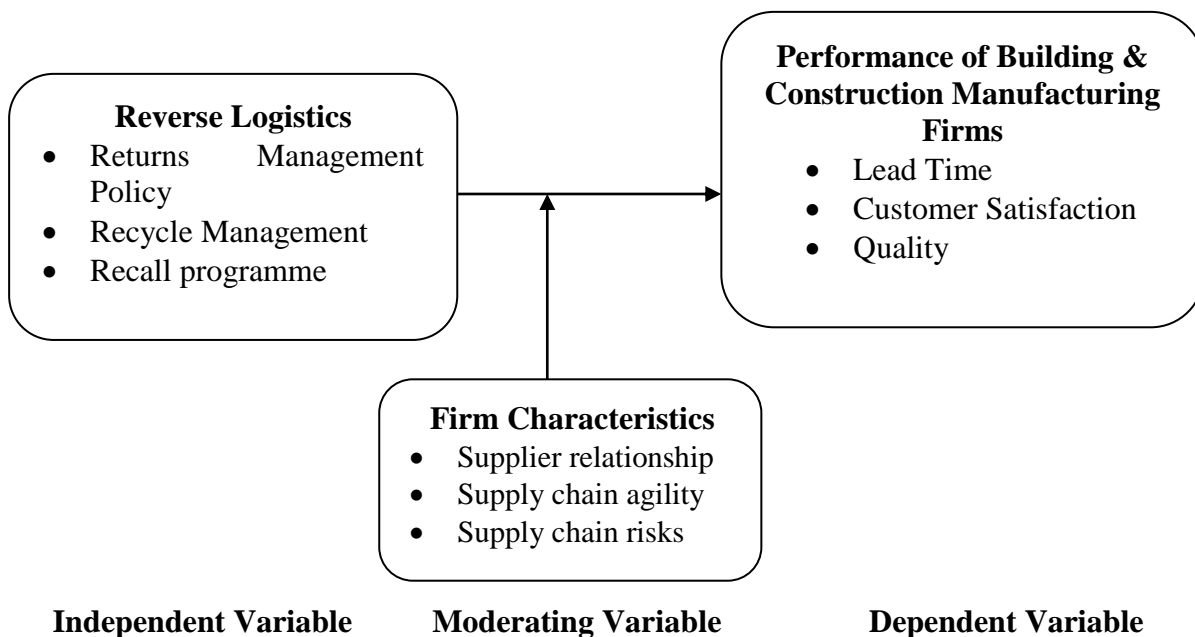


Figure 1: Conceptual Framework

3. RESEARCH METHODOLOGY

3.1 Research Design

This study used a descriptive research design. Creswell (2013) argue that a study design is descriptive when it is concerned with why and how a variable produces change in another; and cross-sectional if it is done only at one point in time or over a short period, collecting data pertaining to the variable in a population or sample. Descriptive research survey design is used when the study wants to describe specific behaviour as it occurs in the environment.

3.2 Target Population

The target population for the study comprised of the building and construction manufacturing firms registered with under the Kenyan Association of Manufacturers. According to Roberta and Alison (2015), a population refers to the entire group of persons or elements that have at least one thing in common. As of December 2020, there were 54 building and construction manufacturing firms registered under KAM. The firms deal with manufacture of building and construction materials and accessories including cement, glassware, steel and iron materials, precast and ready-mix concrete, and quarry construction and building materials. The study focused on the employees from these companies as the unit of observation. Specifically, employees from key departments that deal with logistics processes and other related activities were surveyed. These departments include: production department, quality assurance department, procurement and supply chain department, transport and logistics department and administration department.

3.3 Sampling Technique and Sample Size

Sampling is the process that involves identifying an appropriate number of respondents from a population to be surveyed. The study used a census to identify the units of analysis. This is where all the 54 building and construction manufacturing companies were included in the study. Therefore, the study used a purposive sampling to identify the units of observation. In this study, the heads of the key departments involved the logistics processes and related activities were purposively selected. These departments include: production department, quality assurance department, procurement and supply chain department, transport and logistics department and administration department. This implies that in every firm, 5 respondents were drawn, making the sample size to be 270 respondents which is 30% of the target population.

3.4 Data Collection

This study used primary data which was collected using a structured questionnaire. Both open-ended questions and closed-ended questions were used in the questionnaire. The questionnaire was administered both manually (physically) and through online means. The researcher contracted field-work assistants who were responsible for dropping the questionnaires to the respondents and make follow-ups to pick them once the respondents had finished filling-up.

3.5 Data Analysis

The study mainly relied on both qualitative and quantitative data analysis. Qualitative approaches were used to gain a better understanding and possibly enable a better and more insightful interpretation of the results from the quantitative study. Descriptive statistics such as frequency distributions and percentages were used to summarize basic features of the data in the study. Inferential statistics were used to test for the hypotheses. A regression model was used as shown:

$$Y = \alpha + \beta_1 X_1 + \varepsilon \dots \dots \dots \text{Equation (i)}$$

Where:

Y = Performance of Building and construction manufacturing firms

A is the y-intercept or model coefficient;

β_1 = the coefficients of the independent variables;

X_1 = Reverse Logistics

$$Y = \beta_0 + \beta_1 X_1 * Z + \varepsilon \dots \dots \dots \text{Equation (ii)}$$

4. RESEARCH FINDINGS

4.1 Response Rate

Out of the 279 issued questionnaires, 228 were dully filled and returned back for analysis. This represented a response rate of 81.7%. The response of 81.67% was therefore concluded to be adequate in this study.

4.2 Descriptive Results Reverse Logistics

The study sought to assess the influence of reverse logistics on the performance of construction companies in Kenya. The study sought to assess how returns management policy, recycle management and recall programmes which are the key aspects of reverse logistics influenced the firm performance. Table 1 summarizes the findings. The findings imply that the aspects of reverse logistics have not been effectively upheld among the construction companies, and indication that cost saving, Eco friendliness and customer satisfaction may not be effectively attained by the companies.

Table 1: Descriptive Statistics on Reverse Logistics

Statements	Mean	Std. Dev.
The firm has a returns policy and does remanufacturing which has role in cost reduction	2.78	1.26
Our firm has recall programs and procedures which have a role in cost reduction	3.05	1.24
The organization practices recycling and refurbishment which has role in cost reduction	3.06	1.20
Our firm has a returns policy and does remanufacturing which has role in scope attainment	3.01	1.31
The firm has recall programs and procedures which have a role in scope attainment	2.96	1.06
Our firm practices recycling and refurbishment which has role in scope attainment	3.17	0.89
Our firm has a returns policy and does remanufacturing which has role in attaining timely deliveries	3.30	0.88
The organization has recall programs and procedures which have a role in attaining timely deliveries	3.11	1.03
The firm practices recycling and refurbishment which has role in attaining timely deliveries	2.54	1.08

4.3 Descriptive Results on Firm Characteristics

The study sought to assess the moderating effect of firm characteristics on the relationship between reverse logistics and performance of building and construction manufacturing companies in Kenya. The main firm characteristics focused on in the study included: market knowledge, firm reputation and board portfolio. Building and construction manufacturing firms as elaborated by Khan *et al.* (2017) has its own diversity, and the status, background and characteristics of the firm play an integral role in determining its market capabilities and competencies. The respondents were asked to indicate their level of agreement or disagreement with specific statements drawn from the main firm characteristics based on five-point Likert's scale. Table 2 summarizes the findings.

According to Vermeulen (2015), the board diversity and its composition has significant influence on the decisions made in an organizations, and how these decision enhance the success of the firm. The findings are also in line with those by Chrisostom and Monari (2018) who established that the ability of organization to adopt emerging trends such as green logistics is majorly determined by their internal and external characteristics such as market size, their internal management capacity and their reputation.

Table 2: Descriptive Statistics on Firm Characteristics

Statements	Mean	Std. Dev.
Our firm has adequate assets to carry out green logistics activities	2.75	1.42
The size of our firm provides a better ground for investment in green logistics to steer performance	3.51	1.09
The length of operation that our firm has served are enough to understand the market requirements in terms of green logistics procedures	2.72	1.18
We stand a better ground to steer green logistics than our peers	3.15	1.08
The board of management in our organization has divers members in terms of experience, background and educational level to enhance adoption of green logistics	3.53	1.06
The board in our firm has enough board members to effectively make critical decisions on green logistics	3.72	0.98
Our company deals with a wide range of products that could affect its green logistics efforts	3.50	1.11
Our company's market diversity has affected its efforts to adopt green logistics	3.65	0.93
The overall characteristics of our firm is streamlined towards enhancing the adoption of green logistics to steer performance	3.78	0.92

4.4 Descriptive Results on Firm Performance

The study sought to find out the opinions of the respondents regarding the performance of their respective organizations. They were asked to indicate their level of agreement or disagreement on specific statements on organizational performance based on a 5-points Likert's scale. The findings are as shown in Table 3. The findings revealed that most of the companies had not seen an increase in the sales revenue for the past five years and that there was a decline in the number of customer complaints with regard to the products. The results imply that the performance of the construction companies has not been effective, thus raising the need for green logistics to boast their cost saving, enhancement of quality and meeting customer satisfaction.

Table 3: Descriptive Statistics on Firm Performance

Statements	Mean	Std. Dev.
Our company has drastically reduced the rate of customer returns over the past five years	2.68	1.00
The cost of operations in our firm has reduced for the past five years	2.50	1.23
Our company has seen an increase in the sales revenue for the past five years	2.89	1.07
There are fewer customer complaints with regard to our products over the past five years	3.18	1.10

The study further sought to establish the performance of the building and construction manufacturing firms in terms of lead time and customer satisfaction. As the findings on Figure 2 reveal, lead time reduction was rated at 23.3% while customer satisfaction was rated at 30.8%. This implies that the firms have relatively low customer satisfaction and lead time reduction, despite the two aspects being essential for firm performance and competitiveness.

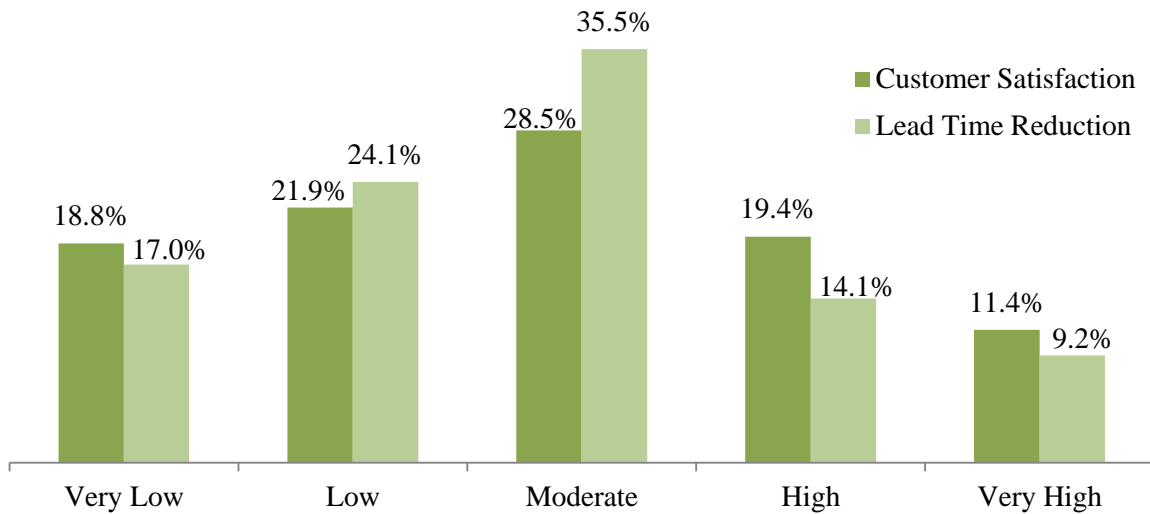


Figure 2: Lead-Time Reduction and Customer Satisfaction

4.5 Hypotheses Testing

H_{A1} : Reverse logistics has a significant effect on the performance of building and construction manufacturing firms in Kenya

The study sought to establish the effect of reverse logistics on the performance of building and construction manufacturing firms in Kenya. The model summary as shown in Table 4 revealed that the R-square (R^2) for the model was 0.415. This implies that 41.5% of the variation in firm performance will be as a result of reverse logistics.

Table 4: Model Summary on Reverse Logistics and Firm Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644 ^a	.415	.412	.42980

a. Predictors: (Constant), Reverse Logistics

The Analysis of Variance (ANOVA) test was carried out and the results are as shown in Table 5 revealed that the F-statistic for the variable was 160.185 at a significant level of $0.000 < 0.05$. The findings implied that the model was statistically significant and would predict the relationship between reverse logistics and performance of building and construction manufacturing firms in Kenya.

Table 5: ANOVA Test on Reverse Logistics and Firm Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.590	1	29.590	160.185	.000 ^b
	Residual	41.748	226	.185		
	Total	71.338	227			

a. Dependent Variable: Firm Performance

b. Predictors: (Constant), Reverse Logistics

The regression coefficients for the model are as shown in Table 6. As the results portray, the Beta coefficient for reverse logistics was 0.667 at a significant level of $0.000 < 0.05$. The findings imply that a unit change in reverse logistics would influence the performance of building and construction manufacturing firms by 0.667 units. The P-value being less than the standard p-value of 0.05 implies that there is a significant relationship between reverse logistics and performance, thus the alternative hypothesis is accepted, and a conclusion drawn that reverse logistics has a significant effect on the performance of building and construction manufacturing firms in Kenya.

Table 6: Regression Coefficients for Reverse Logistics

Model		Unstandardized Coefficients		Standardized Coefficients t	Sig.
		B	Std. Error	Beta	
1	(Constant)	1.056	.161	6.558	.000
	Reverse Logistics	.667	.053	.644	12.656

a. Dependent Variable: Firm Performance

H_{A2} : Firm characteristics has a moderating effect between reverse logistics and performance of building and construction manufacturing firms in Kenya

The study sought to establish the moderating effect of firm characteristics on the relationship between reverse logistics and performance of building and construction manufacturing firms in Kenya. The regression coefficients for the moderated model are as shown in Table 7. From the model, it is evident that the Beta coefficient for the moderation effect of reverse logistics and firm characteristics was 0.029, an indication that when moderated, reverse logistics would influence performance of the building and construction manufacturing firms by 0.029 units. The P-value is 0.034 < 0.05, an indication that there is a significant moderating effect of the relationship between reverse logistics and performance of the building and construction manufacturing firms in Kenya.

Table 7: Regression Coefficients for the Overall Moderated Model

Model		Unstandardized Coefficients		Standardized Coefficients t	Sig.
		B	Std. Error	Beta	
1	(Constant)	1.591	.054	29.495	.000
	Reverse Logistics*Firm Characteristics	.029	.014	.163	2.130

a. Dependent Variable: Firm Performance

5. CONCLUSION AND RECOMMENDATIONS

Conclusion

The study sought to assess the influence of reverse logistics on the performance of building and construction manufacturing firms in Kenya. The findings revealed that the reverse logistics were not embraced in most of the surveyed building and construction manufacturing firms, despite the ability of the practice to reduce the timeframes used in deliveries, promoting customer satisfaction, saving on operational costs and enhancing the quality of goods. The study concluded that reverse logistics had a significant effect on the performance of building and construction manufacturing firms in Kenya. Manufacturing of building and construction materials is a process that requires extensive and comprehensive use of materials, most of which may have varied impacts on the environment. When the firms establish that some of their products do not meet the required environmental friendly characteristics, having return policies and recalling some of the products would be essential in promoting sustainable logistics. The study concluded that the use of recall programmes and embrace of recycling are essential way which play a significant impact on the success of the reverse logistics, thus enhancing firm performance.

The characteristics of the firms were found to be essential in determining the ability of the reverse logistics to contribute to the performance of the building and construction manufacturing firms in Kenya. The study concluded that through the market knowledge that firms are able to acquire out of the longer period of operation, the reputation gained as well as the portfolio of their board were some of the characteristics that enhanced the effectiveness of reverse logistics towards enhancing the performance of the firms.

Recommendation

The study recommends the need for the management of building and construction manufacturing firms in Kenya to embrace green logistics through reverse logistics as a way of promoting sustainable practices and enhancing performance. The manufacturing of building and construction materials and products partakes vigorous processes most of which a times may led to some products not meeting the environmental friendliness, or not going as per the customer needs. As such, embracing return management policies and recall programmes for such products would play a significant role in promoting customer satisfaction while at the same time contributing to environmental conservation.

Embrace of green logistics among other sustainable business practices among the organizations in the country remains a blueprint for the government as one of the sustainable development goals. The government therefore ought to incorporate policing and governance framework that provide guidance to the manufacturing firms on how to embrace green logistics as one of the sustainable practices. The government through key arms such as the parliament should come up with policies that highlight the key green logistics practices to be adopted by the building and construction manufacturing firms. This will ensure that the firms have a clear and common direction towards incorporating reverse logistics to enhance performance.

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