

REVERSE LOGISTICS PRACTICES AND SALES GROWTH OF STARLINE NIGERIA LIMITED, ABIA STATE

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ABSTRACT

The study focused on the effect of reverse logistics practices on sales growth of Starline Nigeria Limited, Abia State. The population of the study was made up of the customers as well as the marketing staff and distributors of Starline Nigeria Limited, Abia State. Both random and purposive sampling was used in the study because of the nature of the study population. The data generated in the study were analysed with simple regression model. The findings of the study revealed that remanufacturing as a reverse logistics practice has a positive and significant effect on sales growth of Starline Nigeria Limited, Abia State. Also, repackaging as a reverse logistics practice was found to positively and significantly affect sales growth of Starline Nigeria Limited, Abia State. The study recommended that Starline Nigeria Limited should invest in appropriate information technology like blockchain that will assist the firm to establish effective data collection system to improve the effectiveness of its reverse logistics processes. The firm can communicate and share information with its supply chain members regarding the collection and handling of customers' product returns.

Keywords: Reverse Logistics, Remanufacturing, Repackaging, Sales growth

INTRODUCTION

Ordinarily, every organization always concentrates on improving their forward logistics operations. Most have failed to give equal attention that has been given to forward logistics to the reverse logistics process (Guta, 2016). In directing much attention to forward logistics most manufacturing organizations overlook the importance of reverse logistics operations and its potential of improving the performance of the organization and that of its supply chain (Azevendo, *et al.*, 2011). For most organizations, reverse logistics is viewed as a disturbance, a cost center and an area of potential customer satisfaction (Stock, Speh & Shear, 2006).

Reverse logistics which is sometimes referred to as “product take-back” is one of the concepts in the wider concept of Supply Chain Management (SCM). Reverse logistics is a process where a manufacturer accepts previously shipped products from the point of consumption for possible recycling and recovery (Fortes, 2009). It involves retrieving the product from the final consumer for the purposes of capturing value or proper disposal. Reverse logistics has gained popularity in recent past due to the perceived benefits attached to it. Such benefits include; enhanced economic performance, reduced environmental degradation, improved social performance and improved operational performance. As far as products are being manufactured and sold, there will always be issues of product returns (Stock, Speh & Shear, 2006), and how organizations handle the product return (reverse logistics) process has a great impact on organizational performance.

Reverse logistics is increasingly becoming an area of organizational competitive advantage, making the pursuit of this function a strategic decision. Despite these benefits, the concept seems not to be imbibed and adopted by manufacturing organizations in Nigeria. Starline Nigeria Limited is an indigenous cosmetics manufacturing organization that engages in some aspects of reverse logistics in order to capture value through the creation of customer value. In the course of its product distribution processes, customers and distributors return products with defects as a result of leakages, damages or breakages in transit. Some other products are returned for repackaging or remanufacturing as the case may be.

These product returns are carried out through the organization's middle men (distributors, dealers and sales force) who finally bring the products to the organization for necessary value recapturing actions. It is worthy of investigation to discover how such reverse logistics practices of Starline Nigeria Limited impact on their sales growth. In addition, there is also a lack of research and studies on reverse logistics practices in Nigeria and its role in sales growth. Therefore, this study looked at the effect of reverse logistics practices on sales growth of Starline Nigeria Limited in Abia State.

Reverse logistics can cause significant cost but also provides numerous opportunities and can therefore be regarded as a key element and part of the supply chain, even though it is often hidden (Horowitz, 2010). There are many organizations that do not consider reverse logistics a productive supply chain practice to venture into. Also, many barriers or conditions stand on the way of many organizations like Starline Nigeria Limited in engaging in reverse logistics practices (Zheng, et al., 2005). Some other organizations regard the practice as being a disturbance. The reason for such problem is lack of top management awareness and commitment to reverse logistics and their failure to identify the benefits that are associated with such supply chain practice (Azevedo, *et al.*, 2011). This neglect by organizations may have negative effects on their marketing performances as a result of low customer patronage and inability to satisfy customers.

Empirically, studies have tried to link the adoption of reverse logistics practices to organizational performance. Rao and Holt (2005) showed that there exists a positive relationship between reverse logistics practices and organizational performance. De Giovanni and Vinzi (2012) established that the existing relationship was not significant, while Azevedo *et al.* (2011) found a combination of positive relationship as well as other relationships.

In the Nigerian context, very few studies have been conducted on reverse logistics practice. Some of these studies however focused on the nexus between reverse logistics and economic performance (Somuyiwa & Adebayo, 2014), environmental sustainability (Oko & Nkamnebe, 2013) and waste management (Bilqis, Sulaimon & Kayode, 2018). None of these studies linked reverse logistics to sales growth of manufacturing companies. It was therefore evident that there

existed knowledge gap that needs to be filled through research. This study sought to help bridge this gap by determining the effect of reverse logistics practices on sales growth of Starline Nigeria Limited in Abia State.

Consequently, the purpose of the study was to examine the effect of reverse logistics practices on sales growth of Starline Nigeria Limited in Abia State

The specific objectives are to;

- i. examine the effect of remanufacturing on sales growth of Starline Nigeria Limited in Abia State;
- ii. examine the effect of repackaging on sales growth of Starline Nigeria Limited in Abia State

The following research questions were explored in order to provide answers to the issues raised in the study;

- i. What is the effect of remanufacturing on sales growth of Starline Nigeria Limited in Abia State?
- ii. Does repackaging as a reverse logistics practice affect sales growth of Starline Nigeria Limited in Abia State?

The following null hypotheses were tested in this study;

HO₁: Remanufacturing does not have any significant effect on sales growth of Starline Nigeria Limited in Abia State

HO₂: There is no significant effect of repackaging on sales growth of Starline Nigeria Limited in Abia State.

REVIEW OF LITERATURE

Theoretical Review

This study was anchored on the Resource based view (RBV). Resource-based view was developed by Barney (1986) for analyzing firm's behaviour and competitive strategy. The RBV contends that the resources and capabilities of firms are the key sources of sustained competitive advantage (Lynch, Keller & Ozment 2000). This premise appears to be supported by logistics and SCM

research (Lynch et al., 2000). According to Barney (1986) resources can be classified into organizational capital resources, physical capital resources and human capital resources. Capabilities can be defined as the skills a firm needs to take full advantage of its assets. Capabilities are complex bundles of individual skills, assets and accumulated knowledge exercised through organizational processes that enable firms to co-ordinate activities and make use of their resources (Olavarrieta & Ellinger, 1997). Thus, an organization may choose to focus on implementing reverse logistics practices to expose the negative environmental performance of its competitors. In this way, the organization can cut a niche for its products. Developing and implementing reverse logistics practices can only be achieved through creating environmentally responsible policies and investing in the necessary equipment and training. Creating a competitive advantage through implementing reverse logistics practices would lead to increased sales and consequently higher profit margins (Fortes, 2009).

Conceptual Review

The Concept of Reverse Logistics

There have been many attempts made on defining the concept of reverse logistics. Despite an apparent lack of interest in and awareness of it, reverse logistics is one of the fastest developing fields in business logistics, which results in constant changes in scope and significance (Vogt, Pienaar & De Wit, 2002). Reverse logistics is essentially the opposite of logistics. The Council of Supply Chain Management Professionals (CSCMP, 2010) defined logistics as the “process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including service, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements”. According to Steven (2004), reverse logistics comprises all activities involved in managing, processing, reducing and disposing of hazardous or nonhazardous waste from the production, packaging and use of products, including the process of redistribution. Reverse logistics is the physical movement of goods formed by repairing and returning substandard goods as well as turnover containers returned to supply side from demand side. This involves the item entities' reverse flow process such as reclaiming pallets and containers used to transport, receiving the customer returns, collecting containers, raw materials, scrap and spare parts processing defects in the product sales (Zhang, 2010).

Reverse Logistics Practices

There are several reverse logistics practices in the logistics and supply chain literature. However, this study considered two which are commonly practiced by cosmetics manufacturing firms.

Remanufacturing Reverse Logistics Practice:

Remanufacturing employs industrial processes to restore defective or returned products to usefulness (Wainaina, 2014). Product returns are often associated with wrong customer orders, products defects, customer dissatisfaction, etc. when these issues occur, most firms make attempts to collect the items. These items are sorted based on their condition for further action (Jayaraman, 2006). As a way of recovering value, an appropriate option for manufacturing firms may be to remanufacture such products for resale (Olariu, 2013). In most instances, new products have to be produced from the scratch and used to replace the defective or returned ones. In remanufacturing, it is necessary to plan both: customer demand, which is always changing, and the availability of products to be replaced, which increases costs (Jayaraman *et al.*, 1999; Tibben-Lembke & Rogers, 2002). Yet, some general trends could be observed. When big sales of an item are expected to be followed by large volumes of returns, the relocation and reutilisation of materials returned could be anticipated and organised. On the other hand, the replaced product may have additional value for some customers due to ecological reasons. This results in cost saving (Mollenkopf & Wheathersby, 2004). Thus, depending on the management of replacement activities, companies may or may not generate excessive costs (Meyer, 1999).

Repackaging Reverse Logistics Practice:

Packaging has always been a strong marketing tool. Product packaging plays a vital role in reverse logistics system. It has the capacity of changing consumers' perception about a company and its products and can as well add unique value to the firm's products. Most times, consumers and firms' distributors return products for repackaging when original packages damage in transit during deliveries and become unattractive to customers (Wainaina, 2014). In the cosmetics industry, it is a common thing to see product packages that get damaged during deliveries to the market. This this occurs, the affected products

are oftentimes recalled for replacements or repackaging. Also, wrongly labelled or poorly packaged products can also be returned by consumers or channel members along the supply chain for repackaging (Guide & Van Wassenhove, 2011). A number of reasons exist why manufacturing firms engage in repackaging of returned products instead of outright remanufacturing. For instance, where the returned product quality is still intact and only the package is affected, repackaging may be adopted (Wainaina, 2014). This option is very economical to a firm than that of remanufacturing from the scratch (Hazen, *et al.*, 2012). Also, firms strive to attract good image and reputation in the market place, repackaging of returned products by customers can be a way that such ways can gain customers' loyalty and increased sales and profits.

Sales growth

Sales growth in business firms is of widespread interest in economics and business research, but the drivers of such growth remain a source of debate (Short, *et al.*, 2009). Sales growth targets play a major role in the perceptions of top managers (Brush, Bromiley & Hendrickx, 2000). Sales growth according to Amoako-Gyampah and Acquah (2008) is the increase in sales in money value. Sales growth is an important indicator of a firm's health and ability to sustain its business. An emphasis on sales growth also provides a useful and visible benchmark to motivate managers. Kaplan and Norton (1996) argued that firms must use a wide variety of goals, including sales growth, to effectively reach their financial objectives.

Sales growth as a key element of business growth is important; hence selling of products/services is one of the two ways to increase firm profits (Narver & Slater, 1990). Sales growth enables one to know the general health of the business; it aids in identifying if one is meeting ones target. With sales growth it will be evident to investors that the business is successful. Factors that influence sales growth range from; promotion, internal motivation, retaining of talented employees, implicit opportunities for investments in new technologies, and equipment in the production process (Mohd, Mohd, & Yasuo, 2013). They further said sales growth ought to be measured within the context of industry conditions and trends as well as local, regional and national economies.

Empirical Review

David and Shalle, (2014) Assessed the Effects of Reverse Logistics Adoption on Supply Chain Performance in the Manufacturing Sector in Kenya: A Case of Hewlett- Packard Kenya. The study used both primary (collected using questionnaires) and secondary data. Content analysis and descriptive statistics has been used to analyze the data, also the inferential statistics such as correlation models, and ANOVA have been used. Data was analyzed using statistical package for social scientists (SPSS) Version 21. Generally the research established that reverse logistics adoption has a significant impact of the supply chain performance in the manufacturing industry; the reverse logistics variables had a statistically significant impact on supply chain performance both independently and as a result of their interaction, three variables; product returns, End of Life (EOL) Management and product repairs were highly correlated and therefore had the most significant influence on supply chain performance both independently and as a result of their interaction. The respective organizations should therefore carry on and continually assess their reverse logistics approaches periodically and make the necessary corrective measures to ensure that they reap the maximum benefits of its adoption.

Somuyiwa and Adebayo (2014) conducted an empirical study of the effect of reverse logistics objectives on economic performance of food and beverages companies in Nigeria. The study targeted an aspect of reverse logistics management in the food and beverages companies carrying on business in Lagos State of Nigeria. With data collected from both primary and secondary sources of data on food and beverages companies, analysis was done using inferential statistical analysis. The results showed that the companies have been effective in using reverse logistics to reduce total logistic cost, improve customer satisfaction, enhance competitive advantage and in minimizing the environmental impact of returns as well as recovery of materials for re-use. Based on the findings of the study it was recommended that for reverse logistics systems to be successful, top management must guide and support the implementation and also recognize the fact that, reverse logistics cannot be managed in isolation.

Bilqis et. al. (2019) explores reverse logistics activities such as product return, reuse of materials, and waste disposal impacts on the management of waste products in the Nigerian manufacturing companies. It was with a view of examining the awareness of reverse logistics to the management of waste products in Nigeria and determining the importance of reverse logistics activities and processes in the management of

waste products of Nigerian manufacturing firms. Using a cross-sectional survey research design, 300 staff of selected manufacturing firms that deal with waste product were selected in Lagos and a well-structured and validated questionnaire was administered. From this, 250 copies were returned, while 246 were valid for the purpose of analysis. Data generated were analysed using descriptive statistics, analysis of variance test of significance and Friedman rank test. Their findings revealed that reverse logistics activities arising from return of goods may be very important in the development of efficient and effective management of waste products in Nigeria manufacturing firms. The results also indicated that reverse logistics is highly significant in achieving organizational goals, company's future success, the functioning of a manufacturing company and strategically positioning of the company. The study therefore recommended the need for a growing focus on various sections of reverse logistics processes in waste products' management of manufacturing companies in order to for them to achieve organizational goal and enhance sustainable business performance.

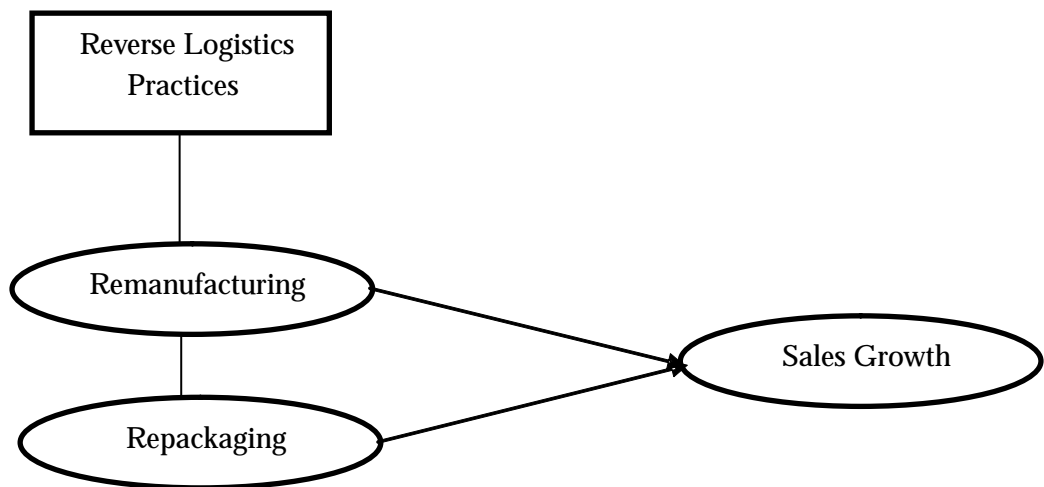


Figure 1: Operational Framework showing the relationship between reverse logistics practices and sales growth

Source: Researchers' concept, 2019

RESEARCH METHODOLOGY

The study adopted survey design research. Data were obtained from both the primary and secondary sources of data. Primary data were sourced through survey. The survey method involved the use of the questionnaire. Two sets of questionnaire were design for

the consumers and distributors of the firm who were purposively selected and for the staff of the firm selected through random sampling. The questionnaire contained relevant questions posed to elicit response from the respondents. Secondary data for the study involved publications such as textbooks, newspapers, journals, brochures, dictionary, internet materials, and unpublished works such as class lecture notes, seminar/workshop papers, theses and dissertations.

The population for the study consisted of customers as well as the marketing staff and distributors of Starline Nigeria Limited, Abia State. Self-administered questionnaire was the data collection instrument. Before the instrument was used for actual study, it was pilot tested. Five (5) academics were used for the pilot testing. The test re-test was conducted to establish the initial reliability of the instrument. A further reliability test was conducted in the study using the Cronbach's Alpha. The reliability of the instrument was upheld when the reliability coefficient (r) exceeded 0.7 according to Nunnally (1978). Cronbach's alpha seeks to measure how closely test items are related to one another and thus measuring the same construct. The result of the reliability test was as follows;

Table 1: Reliability Analysis of the Variables

S/N	Items	No of Items	Cronbach's Alpha
1.	Remanufacturing	5	.852
2.	Repackaging	5	.804
3.	Sales Growth	5	.922

Source: SPSS Output, 2019

The data generated in the study were first presented in tables using frequencies and percentages. After which, they were analyzed with simple regression model. All analyses were done through the use of the Statistical Package for the Social Sciences (SPSS) version 20.0.

RESULTS AND ANALYSIS OF DATA

This section is for the presentation and analysis of data collected during the field work. The analysis is based on the responses from the completed questionnaire. A total number of one hundred and forty-one (141) copies of questionnaire were distributed to customers, marketing staff and distributors of Starline Nigeria Limited, Abia State. Out of this number, one hundred and twenty-eight (128) copies were correctly completed, while thirteen (13) copies were incorrectly filled. Data analyses were thus made based on the correctly filled copies of the distributed questionnaire.

Reasons for product returns in Starline Nigeria Limited

Table 2: Descriptive statistics showing responses on the reasons for product returns in Starline Nigeria Limited

Reasons	V.H	H	M	L	V.L	MEAN	REMARK
Packaging Problems	59 46%	39 30%	19 15%	11 9%	- -	4.57	Accepted
Product leakages and breakages	40 35%	43 25%	21 22%	17 13%	7 5%	4.38	Accepted
Product expiration	11 9%	17 13%	30 24%	44 34%	26 20%	4.11	Accepted
Quality inconsistency	15 12%	22 17%	28 22%	36 28%	27 21%	4.23	Accepted
Wrong product delivery	49 38%	32 25%	12 10%	16 13%	19 14%	3.98	Accepted

Source: Field Data, 2019

The result in Table 2 showed the frequency, percentages, and mean scores on the reasons for product returns in Starline Nigeria Limited. The weighted mean score of the responses on the barriers were 4.57, 4.38, 4.11, 4.23 and 3.98 respectively. This means that the factors outlined were the main reasons for product returns in Starline Nigeria Limited with their mean scores greater than the mean criterion (3.0). Additionally, this revealed that packaging problems,

product leakages/breakages and wrong products delivery respectively ranked high on product returns in the studied organization. These factors are the basis of reverse logistics management in the organization.

Product recovery processes in Starline Nigeria Limited

Table 3: Descriptive statistics showing responses on product recovery processes in Starline Nigeria Limited

Recovery Process	V.H	H	M	L	V.L	MEAN	REMARK
Resale	-	2	-	4	7	3.13	Accepted
	-	15%	-	31%	54%		
Repackaging	6	5	2	-	-	3.65	Accepted
	46%	39%	15%	-	-		
Remanufacture	7	5	1	-	-	5.26	Accepted
	54%	39%	7%	-	-		
Recycling	4	3	1	4	1	4.81	Accepted
	31%	24%	7%	31%	7%		

Source: Field Data, 2019

The result in Table 3 showed the frequency, percentages, and mean scores on product recovery process in Starline Nigeria Limited. The weighted mean score of the responses were 2.66, 3.65, 5.26 and 4.81 respectively. This shows that three (3) recovery processes were used in the studied organization with their mean scores greater than the mean criterion (3.0). Thus, repackaging, remanufacture and recycling were used to recover returned products in Starline Nigeria Limited.

Analysis of Data

Effect of remanufacturing on sales growth of Starline Nigeria Limited. Abia State

Table 4: Simple regression table below presents the effect of remanufacturing on sales growth of Starline Nigeria Limited, Abia State

Variables	Coefficient	Std. Error	t-value
Constant	4.890	1.612	
	3.021**		
Remanufacturing	5.604	2.042	2.744**
R ²	0.509		
Adjusted R ²	0.491		
F-statistic	14.994		
N	93		

Note: **= Significant at 5% level

Source: Field data, 2019

The regression result in Table 4 shows that remanufacturing as a reverse logistics practice was positive and a significant factor that affects sales growth of Starline Nigeria Limited, Abia State. Remanufacturing was significant at 5% probability level and positively related to sales growth of Starline Nigeria Limited, Abia State. This implies that sales growth in Starline Nigeria Limited is greatly dependent on how it engages in remanufacturing as a reverse logistics practice. As the practice of remanufacturing increases, sales of Starline Nigeria Limited also increases.

The F-statistic in the regression above was 14.994 and significant at the 5% probability level indicating that the model specification was correct. The estimated regression equation shows that sales growth of Starline Nigeria Limited is a linear function of the explanatory variable (remanufacturing). The r^2 value of 0.509 indicates that 51% of the variation in sales growth of Starline Nigeria Limited, Abia State is explained by remanufacturing. This assertion is at the 95% confidence level.

Effect of repackaging on sales growth of Starline Nigeria Limited, Abia State

Table 5: Simple regression table below presents the effect of repackaging on sales growth of Starline Nigeria Limited, Abia State

Variables	Coefficient	Std. Error	t-value
Constant	8.406	2.842	1.736**
Repackaging	0.297	0.080	3.700***
R ²	0.603		
Adjusted R ²	0.489		
F-statistic	16.168		
N	93		

Note: *** = Significant at 1% level; ** = Significant at 5% level

Source: Field data, 2019

The regression result in Table 5 shows that repackaging was positive and a significant factor affecting sales growth of Starline Nigeria Limited, Abia State. Repackaging was significant at 1% probability level and positively related to sales growth of Starline Nigeria Limited, Abia State. This indicates that sales growth in Starline Nigeria Limited is greatly dependent on repackaging as a practice of reverse logistics. Thus, as repackaging increases, sales of Starline Nigeria Limited also increases.

The F-statistic in the regression above was 16.168 and significant at the 1% probability level indicating that the model specification was correct. The estimated regression equation shows that sales growth of Starline Nigeria Limited is a linear function of repackaging. The r^2 value of 0.603 indicates that 60% of the variation in sales growth of Starline Nigeria Limited, Abia State is explained by reverse logistics repackaging. This assertion is at the 99% confidence level.

DISCUSSION OF FINDINGS

The study examined reverse logistics practices and sales growth of Starline Nigeria Limited, Abia State. Descriptive analysis result has revealed that packaging problems, product leakages/breakages, product expiration, quality inconsistency and wrong products delivery were factors that initiate reverse logistics in Starline Nigeria Limited, Abia State as customers who are faced with these challenges return affected products to the company. When these products are returned, what does the company do to recover value? Repackaging, remanufacturing and recycling were found to be processes used by the studied firm to recover value from returned products from customers. Recycling has been found to contribute to cost savings thereby leading to sales growth and waste reduction (Mwaura, *et. al.*, 2015). What then is the effect of these reverse logistics practices of the studied firm on its sales growth?

Regression result showed that remanufacturing as a reverse logistics practice was positive and a significant factor that affects sales growth of Starline Nigeria Limited in Abia State of Nigeria. This finding is in agreement with previous findings. For instance, Jayaraman and Luo, (2007) opined that effective remanufacturing practice could potentially increase sales volume via reduced material requirements and an improved market share via an environmental image. According to Amemba (2013), remanufacturing strategy is one of reverse logistics practices that are believed to contribute most to sales growth. Equally, Larson (2017) found a positive correlation between reverse supply chain and organizational sales performance. Hung Lau and Wang (2009) also contend that firms that are located in developing countries that integrate reverse logistics into their operations help in reducing waste and increase their sales performance via the adoption of value replacement.

The study result also showed that repackaging was positive and a significant factor affecting sales growth of Starline Nigeria Limited in Abia State. This is consistent with the findings of Lumpkin and Dess, (1996) and Wainaina (2014). Many benefits can be associated directly with effective repackaging reverse logistics management to include sales growth, market share, and profitability (Lumpkin & Dess, 1996). Similarly, the study by Wainaina (2014) showed that repackaging as a reverse logistics practice has positive influence on firms' performance (profitability and sales performance). In further agreement to this finding, Siew (2015) found that repackaging as reverse logistics practice contributed to firms' performance via boosting sales growth and profitability.

CONCLUSION AND RECOMMENDATIONS

In line with the above findings, it can be concluded that manufacturing firms like Starline Nigeria Limited that adopt reverse logistics practices into their supply chain can reduce new raw materials usage, produce value-added products, and reduce total manufacturing cost which will translate to a significant and positive effect on their sales performance and competitive advantage. While many companies have yet to recognize the strategic potential of efficient reverse logistics, it is clear that the tide is beginning to turn. There is more interest in reverse logistics now than ever before. As customers' returns are increase daily, firms are beginning to make serious investments in their reverse logistics systems and organizations. Although many view this strategic process as being a disturbance and distraction, but the neglect of this aspect of the firm's logistics process may have some negative effect like loss of customers' goodwill and patronage, and subsequently, loss of sales and profits. Definitely, reverse logistics will be one way that manufacturing organizations in Nigeria can reduce costs of materials and manufacturing, increase sales revenues, profits and customer service levels and help to obtain competitive advantage. To accomplish this task, metrics like blockchain that can enhance and measure various aspects of the reverse logistics process must be developed and implemented. Thus the study recommends as follows:

1. As the findings show that the adoption of the reverse logistics practices impacts on organizational sales performance, Starline Nigeria Limited should include reverse logistics in their strategic planning and create clear policies for it. Management of Starline Nigeria Limited should look at reverse logistics practice as a strategic method that can be used to boost marketing performance.
2. Starline Nigeria Limited should invest in appropriate information technology like the modern blockchain technology. This will assist the firm to establish effective data collection system to improve the effectiveness of its reverse logistics processes. The firm can communicate and share information with its supply chain members regarding the collection and handling of customers' product returns.
3. Starline Nigeria Limited should consider outsourcing their reverse logistics function to a third-party logistics (3PL) organization, if it lacks the necessary expertise or knowledge on reverse logistics management.

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