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ABSTRACT

Reverse logistics is an area of growing academic concern, as reflected in the increase in related literature from scholars around the globe. The main objective of this study was to find out the effects of reverse logistics practices on the performance of FMCG firms in Kenya. Specifically the study was to identify the effect of as Product Recalls, Manufacturing Returns, Reuse, Recycling, Repackaging and the influence of Salvage and scrap disposal on the performance of FMCG firms in Kenya. The research design employed in this study was descriptive. This study relied heavily on secondary data as is the case with most desktop research study. The study reviewed journal articles, unpublished papers and conference papers on reverse logistics. The paper employed a desktop approach to provide answers to the research objectives. Specifically, the paper used a descriptive approach to gather information from peer reviewed publications such as, journal articles, environmental organizations reports and books. The study found that reverse logistics practices have a direct and significant effect on organizational performance of FMCG Companies. The study recommended that management of FMCG Companies need to adopt reverse logistics practices such as recycling, reuse, remanufacture, repackaging, recall and waste disposal strategies. It also recommended that within the FMCG supply chains, firms should embrace recycling as an investment for improved performance, thereby moving towards sustainable growth which is one of the foundations of Kenyan Vision 2030.

Key Words: *Product Recalls, Manufacturing Returns, Recycling, Repackaging, Salvage*

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INTRODUCTION

Climate change is a key suspect in the deterioration of life on Earth. It's unrelenting and devastating footprint on livestock, wildlife, coral reefs, tropical forests and the arctic ecosystems is indisputable,(Panya,2021). The University of Reading, estimates that by 2050, 150 million people or more could be displaced as a result of extreme weather, rising sea levels, desertification, flooding and conflicts over scarce resources. It asserts that in 2019, United Kingdom(UK) experienced three heat waves that led to 892 deaths. Throughout 2020, there were recorded 16 tropical nights in UK. Siberia, Australia, Western Europe, France, Northern parts of Europe joins the long list of countries that experienced unusually high temperatures in the year 2020.

Climate change and environmental degradation are key issues on the lips of governments around the world today. Supply chains are undergoing radical transformations due to the mega-competition taking place among firms on a global scale. Firms are finding that they must deal with high levels of uncertainties, (Owie, 2019). Government institutions, United Nations agencies and Non-governmental organizations try to implement new regulations and limits to reduce the environmental degradation burden of the industries around the globe, (Panya, 2021). Increased global warming and environmental degradation, has caused concern for governments, societies and business organizations even in Kenya. Kenya's, manufacturing industry is one of the main contributors to economic growth. Unfortunately, it has also caused environmental deterioration, (Mwaura, Letting, Ithinji &Bula, 2015).

Human activities like burning of fossil fuels and biomass for electricity and industrial processes, transportation, agricultural activities, deforestation, commerce, changes in land use, building and constructions and other indirect energy use are the largest contributors to environmental degradation, (Panya, Ochiri, Gakure &Achuora, 2021). Effective solid waste management is crucial in the mitigation

of the effects of climate change. It involves influencing the method of production, storage, collection, transfer, transportation, processing, and disposal of solid waste.

Logistics is an integrated part of supply chain management. Logistics management plays an important role in manufacturing firms, as it involves the optimal use of man, machine and material. Reverse logistics on the other hand plays a key role in protecting the environment through reduction in waste associated with recycling as well as reduction in energy consumption through reusing. Reverse logistics deals with the handling of the goods that are being returned to the manufacturer by the customer. It covers all the activities that determine the fate of these returned goods, (Salim, 2016). Remanufacturing, recycling, return and refurbishing are terms associated with reverse logistics.” (Zhang, Tianshan, Faheem, 2018).

The reverse logistics paradigm plays an important role in improving the environmental, social and economic performance of most firms contributing to cost savings by and consequently lessens the impact of supply chain activities on the environment,(Panya *et al*,2021). Waste reduction strategies can be adopted by firms to minimize resource and energy use during production. Waste reductions usually require knowledge of the production process and detailed knowledge of the composition of the waste. Incorporating reverse logistics as a measure to control wastes is a critical subject matter for competitive manufacturing and service industry.

Fast Moving Consumer Goods (FMCG) industry is one of the largest industries worldwide. It comprises of companies that supply low-cost products that are in constant high demand. FMCG Companies are divided into either local, National, Regional or multinationals like Coca-cola, SABMiller, Diageo, Heineken, and Castel. These companies are owned by different individuals but closely knit together and independent in their functions, (Montana & Charnov, 1993). The food companies, beverage companies, personal care product

manufacturers, Home care product manufacturers are part of a larger system of FMCG industry that is tasked to the provision of these daily products, brand information, to establish brand loyalty and setup the supply chains to ensure the product are adequately priced while still generating a commercially viable profit, (Payan & McFarland, 2005).

According to KPMG, (2016), Fast-Moving Consumer Goods (FMCG) are generally cheap products that have a short shelf life, and are purchased by consumers on a regular basis. The FMCG sector comprises a large variety of products mainly foodstuffs, beverages, personal care products, and homecare products. Due to environmental complexity, globalization, competition, influence of technology and changing consumer need and wants, FMCG firms have been necessitated to adopt appropriate strategies for effective position, targeting and segmenting markets, Ogunlala, (2018).

According to Graham and Frankenberger (2015), FMCG firms have been encountering numerous sustainability challenges during the past two decades, including competition, recessions and image problems. The FMCG sector in Africa has a significant scope to expand. Poverty levels in especially Sub-Saharan Africa (SSA) are still quite high, with food and other necessities dominating consumer budgets. For this reason, the food sub-sector of FMCG has a very large market to cater for, while penetration rates in the other categories still have significant room to expand, (KPMG, 2014). FMCG retailers generally operate in a low-margin environment. As a result, the existence of a large market is crucial to the success of these companies. In Ghana informal markets dominate food retail at present. This should slowly start to change as the number of shopping malls rise, and consumers increasingly prefer the convenience that is offered by one-stop shopping at supermarkets,(KPMG,2014). The latter trend is partly being driven by the growing expatriate population especially Accra.

Egypt's Carbon emissions represent almost 0.6% of the total global emissions, of which transportation has the largest share, (Ahmed, 2015; Akkucuk2017). Egypt should improve on its initiative to reduce emissions arising from its transport systems and packaging. In South Africa, Shoprite Holdings Ltd is the leading retail outlets in SSCM Practices, (Pillay & Mbhele, 2015) Shoprite is leading in waste management, sustainable packaging, water and energy efficiencies, and food losses and waste sustainable practices. They have invested heavily in comprehensive IT systems that provide integrated, real-time data. Their supply chain model is based on international best practice, encompassing an efficient fleet of trucks and trailers, sophisticated cold chain technology and world-class distribution centers. The Company reduced their water usage intensity by 8.7% by improving efficiency, reducing wasteful practices and piloting water harvesting and storage systems at certain stores. In Green Distribution, it adopted a design-for-sustainability approach to packaging based on life-cycle thinking and innovation. (Mafini & Okoumba, 2018)

Kenya's food retail sector is well developed in an African context. Foreign retailers are yet to break into the market with two local players – Tuskeys, and Naivas – dominating the retail market scene, (KPMG, 2016). Many African countries are less resilient to climate change due to extensive poverty, frequent droughts, inequality in land and natural resource distribution and heavy reliance on rainfall for agricultural purposes,(Niehaus, 2016). As a result of global warming, most organizations around the globe have been improving their supply chain activities and environmental performance in terms of reducing their carbon emissions, minimizing waste generated from the industry, conserving natural resources, and reducing energy consumption, (Elbarkouky & Abdelazeem, 2013; Akkucuk, 2017; Elfeki & Tkadlec, 2015).

East African Breweries Ltd is still the dominant producer of beer in Kenya; it has seen competition intensify in recent years from small local brewers and imports of international brands such as

Heineken and SABMiller. In the oral care market, Unilever (Close Up) faces competition from Colgate-Palmolive East Africa (Colgate) and Glaxo SmithKline Kenya Limited (Aquafresh), (KPMG, 2014). Despite the efforts of increasing the volume of sales by FMCG firms, challenges like competition, influence of technology, change of customer needs and wants and globalization has necessitated FMCG firms to change their communication strategies to survive in the turbulent business environment, (KPMG, 2016).

Statement of the Problem

Fast-moving consumer goods (FMCG) sector represents one of the largest industries worldwide. It is mainly characterized by companies that supply low-cost products that are in constant high demand, Ogunlela, (2018). These products usually have a short shelf life and are non-durable including food, beverages, personal hygiene and household cleaning utensils. A recent report by Oxford Business Group placed Kenya's retail market as the continent's second most developed, trailing behind South Africa, and the fastest growing sector within the continent (Joyce, Willy, Kimani, & Flora, 2017; Kimotho, 2017). Kenya's business environment has been described as the most dynamic in the region (Chesula & Iravo, 2016). Whereas the sector has reported growth there are some unfortunate events which signal that the sector is experiencing challenges, (Kimotho, 2017).

The reason why companies must incorporate SSCM Practices is to ensure compliance with international laws and regulations and to adhere to and support international principles for sustainable business conduct, (Dube, Gawande, & Kunal, 2016, Panya *et al*, 2021). In the USA for example Nike Inc. is among the leading companies that have a well-established reverse logistics system, (Mugo, 2017; Pourhejazy & Kwon, 2016). As the largest producer of athletic footwear in the world, Nike Inc. has a huge impact on people and resources around the globe. Nike has created a strategic alliance with an Eco-non-profit organization "National Recycling Coalition" (NRC) in order to collect used tennis shoes, as part of Nike's Reuse a Shoe Program,

(Mugo, 2017; Panya *et al*, 2021). Further they have a policy on factory emissions to minimize global warming by burning most of their wastes in an incinerator (Nike, 2018).

A closer look at the recent trends characterizing Kenya's retail sector reveals mixed fortunes. The turmoil in the retail sector has been a reality check after a decade of heavy investment in the sector that analysts had warned was heading to a glut, (Kimotho, 2017). Many retail sector analysts in Kenya concur that a combination of factors including gross mismanagement, lack of environmental awareness, poor strategic decisions, tax issues and massive internal losses perpetrated by some wayward employees and suppliers are the main reasons behind the turmoil's and slow death of giant retail chain stores in Kenya, (Mithamo, Marwa, & Letting, 2015; Some, 2017, Chesula & Nkobe, 2018).

According to Graham and Frankenberger (2015), FMCG firms have been encountering numerous sustainability challenges during the past two decades, including competition, recessions and image problems. Many FMCG companies are facing financial and operational difficulties like Kenya Airways, Mumias Sugar Company, Sony sugar company, Chase Bank, Imperial Bank, many Public and Private Universities. However, things have been extremely difficult in the retail sector where major retail chain stores and supermarkets have struggled to stay afloat, (Letting & Muthoni, 2013, Chesula & Nkobe, 2018).

Due to environmental complexity, globalization, competition, influence of technology and changing consumer need and wants, FMCG firms have been necessitated to adopt appropriate strategies for effective position, targeting and segmenting markets, Ogunlala, (2014). According to the Vision 2030 plan, the retail sector is among the six priority sectors projected to make up the largest part of Kenya's Gross Domestic Product (GDP) and to create approximately 50 per cent of total formal employment. Indeed, the sector's potential fits squarely under the economic pillar of Vision 2030

that seeks to improve the prosperity of all Kenyans by achieving a 10 per cent GDP growth rate, (Chesula & Nkobe, 2018). Organizations need to find ways of dealing with environmental challenges through the adoption and implementation of Sustainable Supply Chain Practices to remain competitive, Uribe, Sarache & Elena, (2019).

A comprehensive literature review on the effects of Reverse logistic practices on organizational performance by (Ogunlela, 2018; Joyce *et al*,2017; Kimotho, 2017; Dube *et al*, 2016, Panya *et al*, 2021; Mugo, 2017; Pourhejazy & Kwon, 2016; Kaynak *et al*,2014,Burnard & Tarzes,2015, Akabane *et al*,2018, Katowice, 2017,Pinto *et al* 2009,Kiilu,2018, Mwaura *et al*, 2015, Yu *et al*, 2018,Salim,2015 Somuyiwa *et al*, 2014, Mao & Yang ,2014), shows that most of the research has focused on the role of reverse logistics on environmental sustainabilities, leaving out the effects of reverse logistics on the performance of organizations. There is minimal research on the Reverse logistic practices on organizational performance. The existing research had not provided clear evidence on the link between reverse logistics and firm performance. This leaves a research gap for this study to fill.

Objectives Of the study

The general objective of this study was to find out the effects of reverse logistics on the performance of fast moving consumer goods companies in Kenya. The study was guided by the following specific objectives;

- To determine the effects of Product Recalls to the performance of fast moving consumer goods in Kenya.
- To establish the influence of Manufacturing Returns to the performance of fast moving consumer goods in Kenya.
- To determine the influence of Recycling on the performance of fast moving consumer goods in Kenya.
- To establish the influence of Repackaging on the performance of fast moving consumer goods in Kenya

- To establish the influence of Salvage and scrap disposal on the performance of fast moving consumer goods in Kenya

LITERATURE AND EMPIRICAL REVIEW

Logistic firms manage activities such as inbound and outbound transportation, warehousing, materials handling, order fulfillment, logistics network design, inventory management, and supply/demand planning. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service, Panya, (2021). Reverse logistics involve all operations related to the reuse of products and materials. It is "the process of moving goods from their typical final destination for the purpose of recycling, reuse, capturing value, or proper disposal, (Yu, Tianshan, and Muhammad, 2018). Business managers have increasingly begun to realize the need to be environmentally accountable for their activities, (Mwaura *et al*, 2016). Reverse Logistics concerns activities associated with the handling and management of equipment, products, components, materials or even entire technical systems to be recovered, (Mwaura *et al*, 2015).

Reverse Logistics, according to (Yu *et al*, 2018), is understood as the process of planning, implementing and controlling, including raw materials and discarded products, in which the final destination is the pursuit of return to business cycle. Reverse logistics plans, operates and controls the logistics flow of post-sale and post-consumer products to the business cycle, promoting economic, ecological and legal values (Leite, 2009, Yu *et al*, 2018). The best example for understanding reverse logistics concept is beverage firms such as Coca Cola or PEPSI, they distribute their beverages to distributors or retailers and after couple of days, firms again distribute new filled bottles of beverages and collect empty bottles for refilling. Usually firms give incentive to consumers for "returning empty bottles" and also give some percentage to retailers for their efforts to motivate consumers to return empty bottles,(

Kaynak *et al*,2014). The primary goal of reverse logistics is to reduce harmful effects on environmental sustainability and also increase efficiency of supply chain with reduction of costs, (Yu *et al*, 2018)

The empirical literature reviewed demonstrated that, although a number of studies have been conducted on reverse logistics, there was very little study done on the effects of reverse logistics practices on organizational performance, furthermore the studies done on reverse logistics practices were incomprehensive and did not address constructs such as Product Recalls, Manufacturing Returns, Reuse, Recycling ,Repackaging and the influence of Salvage and scrap disposal on the performance of firms. This research study generated constructs which formed the conceptual framework on which the study was anchored. The study intends to cover wide aspect of reverse logistics practices ranging from economic, social to environmental effects which is lacking in the empirical study reviewed. A number of empirical studies reviewed here concentrated on the individual elements of the reverse logistic Practices, for instance, Kaynak *et al*, (2014) looked at the Role of Reverse Logistics in the Concept of Logistics Centers.

The study found that consolidation of reverse logistics functions under the organized structure of logistic centres would provide a wide range of opportunities and benefits for the organizations. Burnard & Tarzes, (2015) looked at the role of reverse logistics in recycling of wood products. The study found that Recycling, up cycling, and end-of-life disposal options need to be integrated in a fully developed industrial ecology. The study concluded that intelligent material reuse and up cycling concepts could reduce the amount of waste destined for landfills or down cycling. Akabane *et al*, (2018) looked at the Reverse Logistics Issues in the Recall Process as an Improvement Factor in the Automotive Segment. The study found that Reverse logistics had a decisive and important role in the

recall process where procedures and flows are designed exclusively to meet this specific demand.

In addition, the reviewed literature indicated that studies by (Ogunlela, 2018; Joyce *et al*,2017; Kimotho, 2017; Dube *et al*, 2016, Panya *et al*, 2021; Mugo, 2017; Pourhejazy & Kwon, 2016; Kaynak *et al*,2014,Burnard & Tarzes,2015, Akabane *et al*,2018, Katowice, 2017,Pinto *et al* 2009,Kiilu,2018, Mwaura *et al*, 2015, Zhang 2018,Salim,2015 Somuyiwa *et al*, 2014, Mao & Yang ,2014), demonstrated that most of the research had focused on the concept of reverse logistics itself leaving out crucial issues of the performance. The key constructs of reverse logistics were not adequately explored as most of the studies focused on reverse logistics as a single variable. This has left a pertinent research gap that this study sought to address by comprehensively assessing the sub-constructs of reverse logistics practices on performance of firms. There was minimal research on the Reverse logistic practices on organizational performance. The existing research had not provided clear evidence on the link between reverse logistics and firm performance. This leaves a research gap for this study to fill.

METHODOLOGY

Research design refers to the method used to carry out research. This research problem was studied through the use of a descriptive research design. According to Cooper and Schindler, (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. Kombo and Tromp (2006) say that descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. Descriptive studies are not only restricted to fact findings, but may often result in the formulation of important principles of knowledge and solution to significant problems (Mugenda & Mugenda, 2003), which was the basic purpose of the study.

This article was built upon an earlier article that was published on LinkedIn titled “*Mitigating the Impact*

of *Climate Change through Effective Waste Management Strategies*". To identify the key effects of reverse logistics on the performance of fast moving consumer goods companies in Kenya, the authors reviewed the empirical literature on models that had demonstrated benefits to the fight against climate change. The review included studies from recent journals that use rigorous methodologies to demonstrate a positive link between effective environmental management and reduced effects on climate change. Specifically, each study included in the review either employed an experimental or quasi-experimental comparison group, or used appropriate statistical modeling and hypothesis testing to estimate the effect of sustainable logistic practices on organizational performance, with controls for context variables and FMCGC characteristics. All studies included in the review appeared in peer-reviewed journals, or represent rigorous, large-scale research studies submitted to various universities and subject to review. This Article also relied heavily on other secondary data as is the case with most desktop study where existing information is used for analysis and to draw vital conclusions. Some of the specific sources of data for the study include books, journal articles, unpublished papers, and government reports, organizational and private WebPages. This type of research approach is employed when a substantial amount of work has been done on a research topic and when the intention of the study is to answer specific questions based on previous works. It is for these reasons that the present paper utilized this approach to examine what different researchers have said on the effects of reverse logics on the performance of firms.

RESULTS

Products Recall

A product recall is a request to return a product after the discovery of safety issues or product defects that might endanger the consumer or put the maker/seller at risk of legal action, (Gencer & Akkucuk, 2016). Individuals involved in bringing a new product to market strive to do whatever they

can to insure that the product performs its intended function efficiently, effectively, and safely, (Mwaura *et al*, 2016). In recent years, product recalls, have increasingly impacted international business. Consumers in the USA are faced with product recalls in the areas of consumer products, pharmaceuticals, medical devices and food, (Driftschröer & Chaudhri, 2015). When such an incident occurs, the firm has to move quickly and effectively to remedy the situation, since defective products can ruin a brand or even an entire company. Product recalls are the method by which companies get defective products back from customers so that they may be replaced or repaired, (Gencer & Akkucuk, 2016).

According to (Sharma *et al*, 2014), Rush through designs is found to be the most important factor in product recall and accounts to be 22.8%. It gives an impression that in order to attract the customer and to come up with competitive products in a shortest time possible; compromise on design cycle without validation of results of actual testing may result in product recalls. Other factors include lack of safety analysis, Vendor quality, Lack of coordination between design and other departments, particularly market research, reliability engineering and production, resulting in the production of inadequate specifications, Insufficient training, Inadequate specifications for the testing of materials or components, Demand management and Lack of coordination of production feasibility before release for production.

Products are returned or discarded because they either do not function properly or because they or their function are no longer needed. A company may recover products to get a good (environmental) image with the customer or getting a better relation with the customer, (Gencer & Akkucuk, 2016). A good example is a tyre producing company who also offers customers rethreading options in order to reduce customer's costs. Having a green line of products can be as well part of a customer relationship strategy, especially due to the increase of environmental consciousness by

society as a whole,(Yu *et al*,2018).In the USA and Canada, the number of product recalls for both food products and nonfood products has steadily increased. In 2014, several major car producers launched recalls of millions of cars world-wide. For instance, General Motors recalled more than 29 million cars and trucks in North America due to various defects, such as power steering problems, being partially responsible for crashes, injuries and fatalities. As a result, the reputation of GM has suffered heavily among consumers (Bennett, 2014).

According to (Attia, 2015), a product may be returned because it does not fit the customer need, or a part of a product, such as cans, can be returned to be recycled. Managers are often unaware of the impact returns management can have on their customers, resources or bottom line. Improving reverse logistics can help companies increase revenue up to 5% of total sales, (Mwaura *et al*, 2016). Companies often view returns as a cost of doing business and ignore the potential revenue opportunity. In the electronics industry, the average return rate on sales is 8%, but the return rate within subcategories can range from 4% to 15% . Years of testing returned consumer electronics have established that the non-defective rate for consumer electronics remains at approximately 65% of total goods returned, meaning that only 35% of goods are actually defective (Schulze *et al.*, 2014). A study by (Attia, 2015), on The Impact of Returned Product Disposition Strategies on

Organizational Performance found that product return strategies and repair strategy have a direct and significant effect on organizational performance.

According to (Gencer & Akkucuk, 2016), Product recall is an effort to limit liability for corporate negligence which can cause significant legal costs due to releasing to the consumer a product that could endanger life and the economic loss resulting from unwanted publicity. The recall process gives the firm the opportunity to act strategically on whether and when to cooperate with the regulatory agent to issue (or agree to issue) a recall.

Product Recycling

Recycling is referred to as the removal of materials from a disposed product or package so that they can be utilized as raw materials for a new product or package, (Salim, 2016). According to (Wong, 2010, Salim, 2016), recycling is the breaking down of a used product into its component parts and reprocessing it into new or original forms. Examples of recyclable materials are plastic items, paper, glass, batteries, bulbs and metal materials. The process of recycling begins from bin collection where bins containing recyclable materials are taken. The bins are then transported to the firm. The materials are sorted, cleaned and then processed. The sorting process depends on the materials to be recycled. For example, steel cans are sorted using a magnet separation process, (Mwaura, Letting, Gichuru & Bula, 2015).

According to (Salim, 2016), There is a link between recycling and operational performance. Recycling saves firms the cost of transportation of materials to be disposed and the cost of land acquisition. For instance, in New Zealand, the setup costs for a landfill vary between \$2m to \$30m with annual capacities between 10,000 tonnes to 500,000 tonnes (Denne, Irvine, Atreya & Robinson, 2007). According to (Sharma *et al*, 2014), recycling saves the firm energy consumption and promotes material recovery. Value would accrue to such residual “product” only as a potential raw material input for a new product. A major concern is that the entire product and/or package will be sent to a landfill, if no recycling is involved. In order for recyclables to have value as a potential new raw material, both supply and demand for the material have to be developed. This is where the idea of reverse logistics is of paramount importance.

In particular, because the value of an empty soda bottle or used newspaper is frequently not obvious to either consumers or manufacturers, the incentive to recycle may be quite low. The material usage per unit of output is reduced and therefore yield improved eco-efficiency (World Business Council for Sustainable Development, 2000).

Recycling promotes environmental conservation. According to NEMA (2007), over 2,000,000 plastic bags are generated in Nairobi. This shows a growing concern for the need to recycle. When a firm recycles for the sake of being more environmentally responsible, consumers would find it more legitimate therefore they would be more willing to buy the firm's products. (Salim, 2016). A study by Ochiri *et al*, (2015) on Effects of Recycling Strategy on Firm Performance found that recycling strategy had influence on firm performance. It recommended that entrepreneurs need to adopt recycling strategy and set up intermediary businesses, capitalizing on wastes and returns from the mainstream publishing firms. It also recommended that within the publishing supply chains, the publishing firms should embrace recycling as an investment for improved

performance, thereby moving towards sustainable growth which is one of the foundations of Kenyan Vision 2030.

Stages in Product Life cycle

- Extraction of natural resources
- Processing of resources
- Design of products and selection of inputs
- Production of goods and services
- Distribution
- Consumption
- Reuse of wastes from production or consumption
- Recycling of wastes from consumption or production
- Disposal of residual wastes

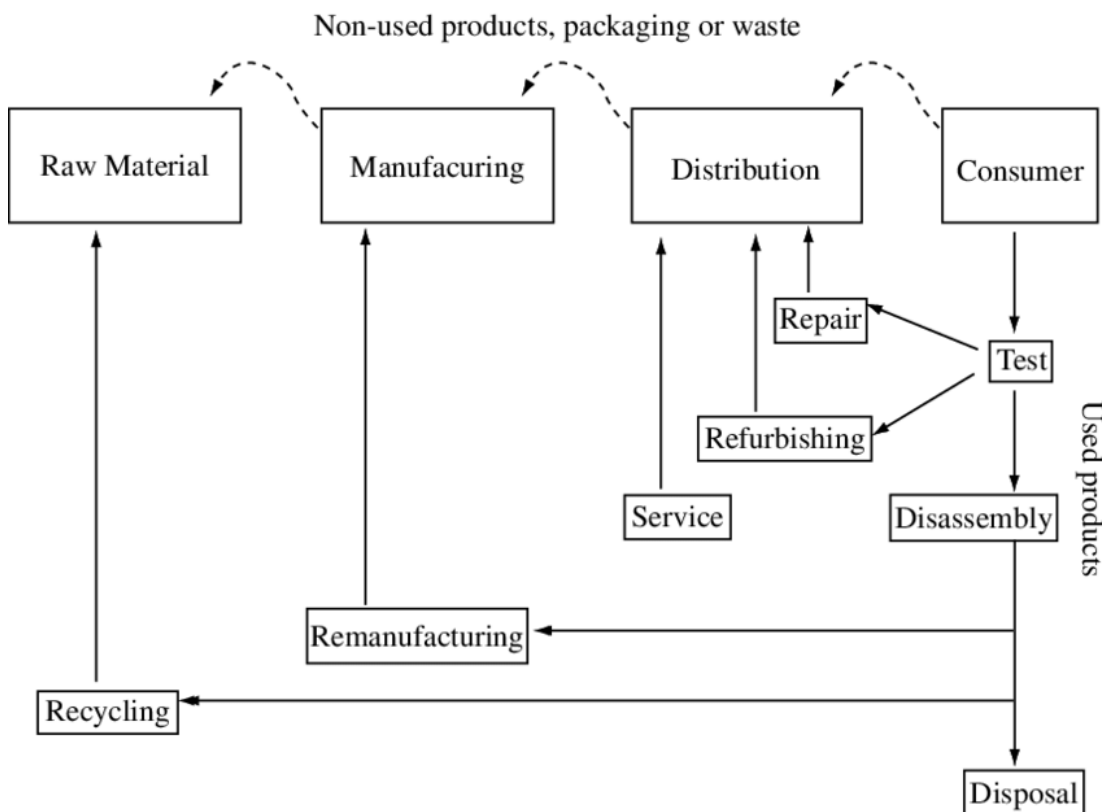


Figure 1: Products Life Cycle
Source: Krumwiede and Sheu (2002)

Reuse

Reusing should not be mistaken with re manufacturing or recycling. Reusing is the process

by which unused or slightly used products are distributed back to the market without any processing being involved. This means that reusing

saves the energy that would be required from recycling or re manufacturing. However, the value of the product is reduced since no manufacturing is done to improve performance or restore it to a new-like state (Eltayeb et al., 2011). The process of reusing generally involves inspection and sorting of the products, conducting repairs without the need for processing, cleaning of the products in preparation for reuse and finally distributing the products to the customers. (Salim, 2016)

Reusing contributes to operational performance in many ways. Firstly, reusing saves energy because there's no processing involved. This promotes cost savings. Secondly, reusing means that products can swiftly be taken back to the market so dependability and speed of delivery is improved (Salim, 2016).

Repackaging

Repackaging is the process of providing physical protection, containment, handling, transportation and marketing of goods again from raw materials to finished products (European Federation of Corrugated Board Manufacturers, 2000). Repackaging involves three levels: primary, secondary and tertiary repackaging. Primary repackaging is the type of packaging in direct contact with the product such as the tube storing toothpaste. Secondary repackaging is the type of repackaging intended to advertise and market the product in the market such as the box of toothpaste showing the brand, features and functionality while tertiary repackaging is meant for distribution and warehousing such as the use of a pallet or a container (Long, 1982).

Reusable packaging systems require a closed-loop logistics system. Examples include reusable pallets; tote boxes such as Euro containers, Reusable bottles for milk, soda, and beer, compressed gas cylinders, beer kegs and others. Refusal of the products in the cash on delivery: In case of e-commerce business, many websites offer the flexibility of cash on delivery (COD) to their customers, (Gencer & Akkucuk, 2016). Sometimes customers refuse the product at the time of

delivery, as there is no commitment to take the product. Then the logistics service provider follows the process of reverse logistics on the refused cargo. It is also known as Return to Origin (RTO). In this process, the e-commerce company adds the refused cargo to its inventory stock again, after proper quality checks as per the company's rules, (Gencer & Akkucuk, 2016).

Repackaging plays a key role in promoting the company's brand therefore reducing marketing costs. Information sharing across the reverse chain would reduce information costs and improve flexibility of information distribution, (Koste and Malhotra, 1999). Aside from cost reductions, reverse logistics contributes to dependability. Through tracking of reverse flows, returned products will reach the firm faster and customer complaints will be resolved more quickly hence increasing customers' confidence in the firm, (Salim, 2016). In case of the demonstration of products to the client as part of Pre-Sales process, the demonstration equipment is sent to the Customer and has to be returned to maintain Revolving Inventory, (Gencer & Akkucuk, 2016).

Repackaging has an impact on operational performance of a firm. For one, repackaging is more economically feasible compared to recycling and remanufacturing (Hazen, Hall & Hanna, 2012). Secondly, repackaging improves flexibility of operations through packaging of materials in different sizes so customers have an option of choosing what package size they require. Thirdly, repackaged materials take up less storage space than unpackaged materials. When there is more free space in a warehouse, movement of people and materials is made easier thus improving productivity, (Mwaura *et al*, 2016).

Eco- Packaging solutions present an opportunity to tackle environmental problems by reducing the negative environmental impacts caused by unethical packaging practices. Companies should encourage eco-packaging since it has lots of safety and health benefits to the consumer and the environment. Eco-packaging ensures materials used

for packaging are lean, the overall packaging of products is downsized, and use of biodegradable material in packaging, packaging material is recyclable and that it maximizes the use of clean production technologies and best practices. (Panya, 2021)

Salvage and scrap disposal

An area of increasing concern, both locally and globally, is the potential negative environmental consequences of waste disposal. Improper waste disposal may result in environmental damage, as well as other unintended consequences, (Yu1 *et al*, 2018). Manufacturing firms are perceived to play an important role in the implementation of sustainable options. These requires a comprehensive means to reduce pollution through identification and eliminating the sources of pollution at every stage of the product life cycle that include raw material extraction, transportation, manufacturing, product use, recycling, and disposal (Matos & Hall, 2007). In order to take up environmental responsibility, organizations are increasingly being urged to reuse, remanufacture and recycle products so as to reduce harmful effects on the environment (Chung & Wee, 2010).

In a competitive environment, when a company accepts product returns it creates an edge over its competitors. Reverse logistics can be defined as the return of products by customers to the original company with the purpose of recovering and potentially generating value from any unused products or components. Murphy (2012) defines it as the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal.

Rogers and Tibben-Lembke (2008) define reverse logistics as the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose

of recapturing value or proper disposal. Reverse logistics can be used to enhance the organization's customer service capabilities by communicating and convincing the market place concerning the capabilities of the organization to create and preserve value for their products (Kariuki & Waiganjo, 2014).

Reverse logistics "closes the loop" of a typical forward supply chain and includes reuse, re-manufacturing, and/or recycling of materials into new materials or other products with value in the marketplace. The idea is to eliminate or minimize waste such as energy, emissions, chemical or hazardous and solid wastes (Ashby *et al.*, 2012). When suppliers are encouraged to take back packaging materials it is a form of reverse logistics that is capable of greening the supply chain (Hasan, 2013) and this reduces the amount of packaging materials that enters into the waste system. Reverse logistics is the process of retrieving the product from the end consumer for the purposes of capturing value or proper disposal. Activities include collection, combined inspection/ selection/ sorting, re-processing/ direct recovery, redistribution, and disposal. Management of wastes in the outbound function such as reverse logistics and waste exchange can lead to cost savings and enhanced competitiveness.

Increased globalization has greatly increased competition and this has brought about growing demand flexibility and cost efficient systems by companies. Through the management of wastes in reverse logistics and waste exchange, companies can enhance their competitiveness as their environmental efficiency is enhanced, (Ashby *et al.* 2012).

Remanufacturing

Remanufacturing is the process of restoring a product taken back from the market in order to return it to a new-like state or improve its performance through refurbishing, repair or replacement of defective parts (Eltayeb, Zailani & Ramayah, 2010, Salim, 2016). Remanufacturing is applied to a variety of products such as tyres,

furniture, motor vehicles, cameras, mobile phones, automatic teller machines, vending machines, automobile parts and electronic devices. The main steps of re-manufacturing typically include dismantling, cleaning of parts, inspection and sorting, repair, refurbishment or replacement of faulty parts and lastly, assembly and testing (Steinhilper, 2001).

Remanufacturing is beneficial in improving operational performance. For one, it can help firms recapture the value that would have been lost if the product is not returned. It is estimated that 85% or more of the original energy and materials are preserved in re-manufacturing (Statham, 2006). This saves the cost of acquiring materials as well as other costs associated with energy such as electricity costs. Secondly, re-manufacturing allows firm to do an analysis on the product to improve design and functionality therefore improving the product quality as a whole. Thirdly, it's easier for a firm to remanufacture compared to producing from scratch so the time taken for the product to reach the customer will be shorter, (Salim, 2016). To improve their own environmental supply chain performance, organizations need to interact with the government, suppliers, customers, and even competitors. Cooperation with suppliers and customers has become extremely important for organizations' to close the supply chain loop, (Zhu et al., 2008).

FINDINGS AND DISCUSSION

Reverse logistics practices at the fast moving consumer goods companies in Kenya are in the infant phase in the Kenyan business environment. There are several reasons such as the lack of knowledge about RL practices at the store level, less support from the manufacturer, supplier side, and lack of government intervention in adopting RL practices at the store level and another stakeholder level. Some of the retailers are getting guidelines from their corporate office to perform the RL process but still the process is not in a full swing. There are reputed international fast moving consumer goods companies in Kenya brands in

every sector who are continuously engaged in recycling and re-manufacturing their used products. However, fast moving consumer goods companies' main motive is to sell a maximum product and that may be the reason they do not have a very aggressive approach towards RL practices. From the empirical review, it was found that Recycling and repackaging has the highest performance score, it was found that fast moving consumer goods companies that runs a renowned apparel store throughout the country and has a strong supportive infrastructure for RL practices.

CONCLUSION AND RECOMMENDATION

Reverse logistics activities differ from those of traditional logistics. A study by (Amemba *et al.*, 2013), concludes that reverse logistics networks have some generic characteristics related to the coordination requirement of two markets, supply uncertainty, returns disposition decisions, postponement and speculation. Reverse logistics practices vary from one industry to another. Industries where returns form a larger portion of operational cost tend to have better reverse logistics systems and processes in place, (Hawks, 2006). Today return flows are becoming the norm rather than the exception. Growing environmental concern and population emphasizes the reuse of products and materials. Some of the countries have gone to extent of charging manufacturer for the entire life cycle of their product. In near future the world is going to witness explosive growth of product recovery activities and at the same time companies are recognizing opportunity to access this new market segment combining with environmental stewardship (Pollack, 2015, Kiilu, 2018).

Some of the widely recognized benefits of reverse logistics practices include; Improved customer contentment and retention, Reduction in the acquisition of parts and sub-assemblies, enhanced revenue and profitability of organization through increased availability of product/service, improved efficiency and effectiveness of the organization, which lead to significant improvement in the

efficiency of the organization (Kannan, Shaligram & Kumar, 2009). Other benefits include; improved time bound sensitivity towards listening to the voice of the customers; it results in anticipation of needs and wants of the customer much ahead before actually they could actually realize it. It also leads to the development of intellectual and emotional bonding with the customers which led to a belief that they made right choice in selecting the firm (Pinna & Carrus, 2012).

Reverse logistics also enable the firm to develop interactive partnership with the customer rather than a proactive or reactive partnership. According

to reverse logistics authorities, some of the recalled products have no defects, but because of the wrong policies of sales and customer service departments in companies, they are taken into account as defected products, which bring an important unnecessary cost burden on companies. Apart from these, the core characteristics of the products; or strategy and standards of the corporations also affect the decision of a reverse flow of the goods. This decision may not be only up to the originators of the products, but the supply chain actors such as wholesalers or retailers, and also third parties such as legal authorities or charities may rule the reverse flow of sold products.

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