

# A Review of the Impacts of Reverse Logistics on Retailers of Fast Moving Consumer Goods

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**Abstract** – Companies worked hard to stay ahead of the competition in the market by providing high quality products and services to satisfied customers. This goal was met with the development of Supply Chain Management (SCM) strategies, which improved business coordination between the supply and demand sides of operations. Reverse Logistics (RL) is the process by which damaged goods from the forward flow of products from suppliers of Fast-Moving Consumer Goods (FMCGs) to end-customers are amassed and returned to suppliers. The purpose of this research was to identify the effects of RL on the top FMCGs merchants in South Africa. The study's theoretical underpinnings were the notions of sustainability and competitive advantage, and it used a qualitative studies technique based on the constructionist research methodology. Thirteen people were questioned through a non-probabilistic sampling technique. Atlas ti.8 was used for the transcription, translation, coding, and analysis of the interviews. The research found that retailers benefited from RL because damaged items were replaced, competitiveness and sustainability were enhanced because of continual value recovery, and waste reduction contributed to a cleaner environment. Recovering damaged goods via the RL process boosted business competitiveness by providing value-added resources that increased profits. Continuous processing with few byproducts guaranteed.

**Keywords** – Supply Chain Management (SCM), Fast Moving Consumer Goods (FMCGs), Reverse Logistics (RL).

## I. INTRODUCTION

Despite the country's socioeconomic challenges, South Africa's retail sector has shown continued growth. There are five major chains that control the majority of the retail market in the country. Together, they operate tens of thousands of stores serving local communities and tourists. In South Africa, small retailers are known as "spaza" shops, and they are served by a small but significant number of independent wholesalers. Woolworths, Shoprite, Pick 'n Pay, Spar, and Massmart (Walmart) make up the top five retail conglomerates in South Africa. FMCGs, which include resold products that have been recycled, remanufactured, or repositioned, saw a 0.9% increase in trade sales in 2016. These items developed from defective stock that was sent back to vendors for replacement (i.e., Reverse Logistics (RL)). As a result, this research centered on how RL affected the industry's most successful stores.

The term "Reverse Logistics" refers to the practice of transporting finished goods back upstream to the supplier for the purpose of recycling, reselling, repurposing, salvaging, or otherwise recovering value from the product. The returned goods are consolidated at the Distribution Centers (DCs) owned by the major retailers before being sent back to the suppliers. Transportation, receiving, testing, inspecting, and sorting for appropriate action like repair, refurbishment, or resale are all facets of the processing performed by distribution centers or a third-party logistics provider. RL is the practice of transporting items back from where they were originally intended to be forwarded in order to reclaim some of the value they originally carried. Products that have been returned can come in a wide range of sizes, shapes, and conditions, making them cumbersome and expensive to process.

More and more shoppers are drawn to the idea of buying "green" or eco-friendly products, which only increases the stiff competition between stores. More and more South African consumers are willing to shell out extra cash for eco-friendly goods, despite the fact that many are still hesitant to do so. In light of the fact that they are legally and morally obligated to ensure the safe and effective recycling and disposal of unwanted goods, retailers have begun implementing RL practices to combat environmental, social, and economic factors. Interest in RL was sparked by the fact that most supermarkets were having trouble dealing with rising rates of unsold inventory, damaged goods, and returns. The "Consumer Protection Act" 68/2008 in South Africa educated buyers about their legal recourse for defective goods. In an effort to do their part in

safeguarding the earth and asserting their rights, customers are increasingly shopping at environmentally conscious businesses. By adhering to these guidelines, businesses may put up a reliable returns procedure to handle issues like product recalls, repairs, and exchanges. Retailers are putting more effort into controlling returns since doing so may save costs and boost sales performance and profit margins.

Customers have been drawn to the green supply chain strategies that are a component of RL because of the lower costs and greater efficiency that result from using them. Enterprises are switching to green supply chains from traditional ones as they strive to be more competitive and sustainable in the markets they serve. Companies using GSCM are highly efficient and adaptable; they make extensive use of technology; and they adhere to the "triple bottom line" strategy. Among the economic, social, and environmental aspects of a company that must be taken into consideration by the triple-bottom-line framework is RL. The most successful stores in South Africa all follow this pattern of adaptation. In this context, the research analyzed the impact of RL on the most successful retailers of FMCG in South Africa.

This paper examines the effect that reverse logistics has had on South African retailers who specialize in procuring FMCG (fast-moving consumer goods). With that regard, this paper has been organized as follows: Section II presents a theoretical framework employed in the research. In the section, the theories of sustainable development and competitive advantage have been discussed. Section III reviews the relevant literatures concerning logistics management and Supply Chain Management (SCM). Section IV presents a brief overview of the case study for this research, which is the South African retail sector of FMCG. Section V further elaborates the concept of reverse logistics in the context of the research. In Section VI, the research problem and objectives have been presented, which a research methodology is defined in Section VII. Section VIII presents the results and discussion of this research focusing firstly on the empirical objectives. Section IX draws final remarks to the research as well as future research directions.

## II. THEORETICAL FRAMEWORK

Theories of sustainability and theory of comparative advantage served as theoretical anchors for the research. Sustainable development theory provides empirical evidence for green activities in RL techniques and advantages derived through waste reduction for ecological sustainability. Value generation from returned and reconditioned items is a key benefit of RL, and it is supported by the notion of competitive advantage. Because of this increase in profitability, the company is now more competitive and sustainable.

### *Theory of Sustainable Development*

The term "sustainable development" was first used publicly in 1987, at a conference hosted by the United Nations World Commission on Environment and Development (WCED). This concept is described as "development which satisfies the requirements of the present generations without compromising the capacity of future generations to satisfy their own needs". Even with the 2020 revision, the definition's essential meaning remains the same. The theory emphasizes the importance of firms using their resources sparingly in order to establish and maintain a sustainable business. Reusing the repaired goods generates value and contributes to sustainability by ensuring the company's longevity and minimizing environmental impact. Enterprise RL practices advance these aims by reusing and recycling materials from defective goods that have been sent back to manufacturers. Sustainable Development Goal 12 of the United Nations emphasizes "sustainable consumption and production," which includes the prudent use of scarce resources.

### *Theory of Competitive Advantage*

In the notion of competitive advantage, Porter's "5 Forces Model" places a focus on cost leadership and differentiation. Marketing, product development, manufacturing, and distribution are all examples of customer-supported value creation that are outlined in the theory. Among the "Five competitive factors" (buyer bargaining power), RL was used sparingly to help businesses compete with one another. Although Porter developed these factors back in 1985, they continue to play an important role today. The money saved by purchasing a used product may help a company stand out from the competition by providing cost leadership and a point of uniqueness. This success also aids in limiting the influence of other competing pressures, such as sellers' bargaining power, new entrants' rivalry, and consumers' access to product/service substitutes. For supply networks to become more competitive, "value co-creation inside the value chains is the key," as stated by Paché [1]. Businesses were able to increase their longevity because to cost-cutting measures including becoming green, using logistics outsourcing services, restocking products quickly, and other innovations in SCM.

## III. LITERATURE REVIEW

Most of the research and writing on the topic of SCM in South Africa centered on the forward and RL of the country's largest supermarket chains and discount department stores. RL' effects on retailers are discussed, along with the associated topics of supply chain, logistics, RL management, supply chain management, distribution centers, and environmental consequences.

According to Lerman et. al. [2], the term "Supply Chain Management" (SCM) refers to the network of enterprises that spans from the "supply side" (raw materials suppliers) to the "demand side" (end-customers), all the way "up the chain". "SCM comprises planning and managing all elements involved in sourcing and procurement, conversions, and all logistical operations," as stated in the definition of supply chain. The term "supply chain" refers to the group of businesses that

collaborate to make and ship products to customers. Planning, sourcing, manufacturing, delivering, and returning are the five major pillars upon which the concept of SCM rests. Supply chain processes may be broken down into five distinct phases: planning, sourcing, making, delivering, and returning. Planning entails getting the necessary resources together to launch a supply chain process, while sourcing refers to acquiring those resources. On the supply side, wholesalers and retailers make up the most of the demand, while retailers and consumers make up the bulk of the returns to manufacturers. By remaking, recycling, and reselling returned goods, we can save resources and prevent further environmental damage.

According to Grytsenko, Savchenko, and Kryshstal [3], logistics management is a broad term that encompasses many different facets of planning and carrying out a venture. To meet both the needs of your company and those of your customers, you need to have a well-defined procedure in place. Materials, tools, and supplies are just a few examples of the kind of resources that fall within the purview of logistics management. In doing so, logistics management integrates the processes of materials handling, production packing, inventories, transportation, storage, and even security. This difficult logistical conundrum is typically modeled, analyzed, visualized, and optimized with the use of specialized simulation tools. A logistician is an expert in the movement of goods and materials.

According to Pourya and Oh Kyoung [4], the discipline of logistics management is a branch of the wider discipline of supply chain management. The term "supply chain management" refers to the practice of organizing the production, distribution, and consumption stages of a product's life cycle. The motivation behind this is to provide what the buyers need. In business, logistics management is applicable to any sector. The end goal is to control the completion of projects, their supply chains, and the resulting efficiency. Business logisticians have developed into supply chain logisticians as companies have become more complicated and have entered global markets. When it comes to managing a company's logistics, there are two main areas of concentration: inbound logistics, which deals with the internal operations of the firm, and outbound logistics, which deals with the external flow of goods and services from their point of origin to their final destination. Logisticians are concerned with the ordering, storing, moving, consulting, and planning of goods and services.

According to Semeriahina and Hryhorak [5], logistics management, a subset of SCM, ensures a smooth and efficient movement of resources and data from point of origin to final consumer. The goal is to provide better and more economical service delivery to clients by connecting the market with the distribution system, the production system, and the purchasing procedure. Logistics management focuses on the shipping and storage stages of a company's supply chain to improve efficiency and save costs in order to gain a market advantage. Another definition of logistics management is "the component of SCM that manages the planning and execution of the forward and reverse movement of products and associated information between locations in the supply chain to fulfill customer needs".

#### IV. CASE STUDY: THE RETAIL SECTOR IN SOUTH AFRICA

As the primary method of delivering manufactured goods to consumers and serving as a link in the supply chain between producers and buyers, the retail industry has been, and continues to be, one of the fastest growing in the global economy. The term "retail" refers to the business of selling goods and services directly to consumers through a storefront. In 2019, the service sector, which includes retail, contributed 62.1% to South Africa's GDP. In order to keep up with consumer demand and stay competitive, the supply chains of top retailers face obstacles like environmental policies. In this context, it's crucial for stores to have RL policies in place, so that defective goods can be sent back to manufacturers and less waste is produced in the supply chain.

##### *Fast Moving Consumer Goods (FMCGs) and Suppliers in South Africa*

Due to their great demand, regular purchasing, speedy consumption, cheap price, and huge volume of sales, Fast Moving Consumer Goods (FMCGs) have a short shelf life. Furthermore, more than half of all consumer spending is on these products despite their poor profit margins. The FMCGs industry in South Africa is expanding rapidly and is widely recognized as a key contributor to the country's economic growth. When it comes to market size, the FMCGs industry is among the top players. Business sales, meat manager, baker, perishable trader, and a wide variety of other jobs are available in this industry.

Customers in the fast-moving consumer goods (FMCG) sector are famously intolerant of even the tiniest product problems due to fierce rivalry, the implementation of new rules, and quick technical improvements. Because of this, RL has become increasingly crucial. According to Martins et al. [6], the term "reverse logistics" (RL) is used to describe the process of overseeing the discharge and collection of waste, among other activities, in order to maximize the long-term earnings of a company. The origins of RL can be traced back to FL, and since then, it has developed into an extremely important part of modern SC. Manufacturers at first didn't plan for products to be sent back to them if they broke, so everything was made to move forward. If there is an issue with the goods, however, RL is almost guaranteed due to product recalls.

A product recall is initiated by a company when there is a problem with the product's safety, packaging, or quality at any given point in the SC (including but not limited to the raw material stage, the manufacturing stage, the packaging stage, the shipping stage, the warehousing stage, or the retail stage). Many FMCGs have been recalled and returned in South Africa for various reasons. The South African Minister of Health, for example, confirmed in March 2018 that a listeriosis epidemic had occurred in 2017. Enterprise polony and Viennese sausages were traced back to the incident, thus the business had to issue a recall and take them back. The cost of recalling these items was 415 million Rand, since they posed a risk to the lives of many people (as they had been sold to other nations). South African consumers were warned to throw out their cans of fish in February of 2020. Hutton and Gresse [7] revealed a flaw in the canning process that might impair consumer safety,

prompting a nationwide recall of pilchards in pasta sauce and sardines in chili sauce. Furthermore, three customers in 2020 reported finding "small fragments of glass" in their cans of Liqui Fruit Red Grape Still 330 mL. Due to a "extremely limited quantity" of faulty cans provided by a manufacturing supplier, a recall was issued in 2021 for both KOO and Hugo's canned vegetable products.

Because of the nature of RL (products being damaged in transportation, recalled, reverted because of dissatisfied customers, transformed into scrap material, or having defects), businesses must find ways to recoup as much worth as possible from the products that are returned to them (through, for example, repair, rebrand, reprocessing, recycle, reselling, or repurposing). Furthermore, RL becomes obligatory in cases when an organization may see a product as trash due to a lack of residual value, the product's obsolescence, the inability to recover the product's residual value, or the product's harmful use. Due to the high value of RL in the FMCG industry, businesses must take into account relevant legislation, regulations, and environmental factors when disposing of items. This is due to the fact that some Fast-Moving Consumer Goods (FMCG) cannot be reused, recycled, or reprocessed and should be thrown away. If the product is still usable but has no commercial value, it can be given away for free to charities, social service agencies, or local communities.

RL has been the focus of numerous studies and real-world applications recently. RL has been the subject of studies by many scholars such as Makaleng and Hove-Sibanda [8]. "The need to decrease costs has caused many food SCs to relocate to offshore manufacturing operations, rendering the logistics of recall operations more problematic and costly for SCs," according to views by Akbari, Valizadeh, and Hafezalkotob [9]. The administration of a company's Strategic RL networks, however, may have a significant effect on the business as a whole. Therefore, several objectives may be accomplished by an organization with an efficient RL management system, including enhancing the total value of the brand, cutting operating expenses, complying with environmental norms, and improving customer satisfaction. In support of this claim, Maheswari, Yudoko, Adhiutama, and Agustina [10] argue that RL enables businesses to better manage waste and become more competitive as a result of their increased environmental efficiency. Bajar, Kamat, Shanker, and Barve [11] found that RL may help businesses in a number of ways, including attracting new clients, cutting expenses, enhancing operations, and boosting public perception.

While a limited number of major companies dominate South Africa's food and beverage manufacturing sector, their supply chains are complex due to extensive forward and backward connections. Due to the potential for temperature fluctuations to cause infestation, quality decline, and shifts in demand and price, food supply chains are very susceptible to environmental factors such as weather. Suppliers in the FMCGs industry have to cope with a number of issues, including a diverse product range, rising customer demand, stringent regulations, and the rise of technology.

The five-stage model of FMCG value generation that was developed shortly after WWII is still widely used today. The following are the five steps that the firms took to execute the strategy:

- Perfect brand development and innovation for the mass market, resulting in a 25% profit margin over unbranded competitors.
- Developed favorable connections with supermarkets and other large-scale merchants to get access to shoppers. In order to do this, they aligned their supply chain, which improved distribution as their partners (retailers) expanded.
- Built their business models with dependable performance and low overhead in mind. The execution was facilitated by centralization, which allowed for reduced costs; as a result, general and administrative expenses amounted to just 4%-6% of income.
- They jumped into emerging markets before their competition did, and then developed their categories as customers in those countries became richer. In the last decade, the effort increased earnings by 75%.
- Added new brands and categories to their portfolios, and then used effective marketing and sales strategies to expand those new additions.

## V. REVERSE LOGISTICS

The term "reverse logistics," sometimes known as the "reverse supply chain," refers to the procedures involved in transporting items from the consumer back to the manufacturer for reuse, refurbishment, recycling, or disposal. According to the guidelines set out by the retail outlet, RL procedures must include product collection, inspection, segregation, recovery, and disposal without depreciating the item in any way. The first thing to do when a product is returned is to notify the company and find out why the product is being sent back. After shipment, the product is examined at the inspection site and is graded according to its perceived quality. Forward logistics is proactive in that it occurs before products are supplied, whereas RL occurs afterward. In most cases, customers or other downstream channels initiate RL rather than it being planned as an outcome of a retailer's planning and decisions. Backward product redistribution might happen on the original network or via third-party logistics providers, therefore both forward and reverse flows need careful design. Creating an effective replenishment program allows for the coordination and integration of both forward and reverse flows.

### *Reverse Logistics Activities*

Reverse Logistics (RL) entails the processes a firm employs to gather used, damaged, undesirable (stock balancing returns), or obsolete products from the end-user or the distributor, along with the shipping and packaging materials. Upon receiving a returned product, a business may choose from a variety of disposal strategies. In cases where the product can be brought back to the manufacturer for a complete refund, the company may opt for this solution first. A product that has not been

utilized may be sold back to a new buyer or sold at a discount outlet. If it doesn't meet quality standards for either of those channels, it might be sold to a salvage firm that will ship it overseas.

Reconditioning, renovating, or reprocessing may be performed prior to sale if the commodity cannot be sold "as is" or if it will substantially increase the selling price for the company. If the company doesn't have this capability in-house, it may hire another company to do it, or it may sell the product to another company that does. Following these steps, the product can be sold as refurbished or remanufactured, but not as new. If the product is in poor enough condition, has too many legal ramifications, or is subject to too many environmental restrictions for the company to recondition it, the company will try to get rid of it as cheaply as possible. Before anything is sent to a landfill, it is thoroughly sorted to recover any valuable materials and remove any recyclables.

In most cases, a company will recycle or repurpose any returned packaging. Totes and pallets designed for multiple uses are clearly the most cost-effective option. Damaged containers and pallet trucks are often repairable and can be reused after refurbishment. Repackaging and fixing damaged pallets can be done in-house, but there are also businesses that specialize in this. Once the transit packaging has been damaged beyond repair, it cannot be reused and must be thrown away. All usable components will be reclaimed, nevertheless, before the trash is taken to the landfill. Companies in Europe are legally obligated to collect and recycle their customers' discarded product shipping containers. In order to cut costs, businesses typically attempt to repurpose these materials multiple times before reclaiming them.

#### *Interest in RL*

The importance of logistics as a discipline is becoming increasingly recognized. A lot of people are also starting to pay attention to RL now. Even businesses that had previously paid little attention to RL management and education have started to take notice. These businesses are comparing their return processes to those of the industry's top performers. The return procedures at some companies are so streamlined that they are seeking ISO certification. The need for the assistance of third parties that focus on returns has increased significantly. The strategic benefit of implementing an RL management system to preserve the viability of products in retail and warehouse settings is not lost on forward-thinking businesses. Romania's recovery management is restricted to just three sectors: 1) the recovery of electronic parts as well as electronics products; 2) the recovery of old automobiles (typically older than 10 years); and 3) the recovering of plastic wastes.

The first product category is supported by the "crock" program, a well-known financial initiative that allows for fixed costs associated with cars to be recovered from the public budget. All aspects of reverse management are handled by private companies, and there are a few recovery centers. The second type of product is the sort that gets picked up on a regular basis from the curb outside the home of the consumer. The local Public Administrative Authority is responsible for identifying suitable sites for the rehabilitation facilities. Each county and city in Romania with more than 100,000 residents is required to have a recovery center for electronics and electronic equipment in accordance with Government Resolution no.448/ 2005. There should be at least six such centers in Bucharest, one serving each of the city's six administrative districts. All expenses associated with reverse management are borne by the manufacturers and retailers. There are no other initiatives for materials that still have utilization value other these product kinds for the recovery. Furthermore, there is no planning mechanism to set aside land on the borders of the new metropolitan districts for the function of the rehabilitation center communities.

#### *Return Percentages*

Whether the reverse movement is primarily composed of products or predominantly of packaging dictates which broad categories of the RL process are applicable. Customers account for a sizable share of product returns. It is estimated that returns from customers account for around 6% of sales revenue for all stores combined. The Various businesses determined the respective return percentages in each case. Creating a reverse logistics procedure for a business or product is challenging because there is often no predetermined distribution strategy in place. Also, many products make it to the reseller and buyer without any good or service or provider identifying information being included. The time and money required to track down these items and return them to the manufacturer is substantial. Poor packaging, incorrect labeling, or delivery methods leading to improper modification and contamination are just some of the reasons a company may decide to pull a product from shelves. The gravity risk is the most significant determinant of the withdrawal's priority.

According to how deeply the product has permeated the system, there are three distinct stages. It is still the manufacturer, its bonded warehouses, or the primary distributor that has custody of the product at this stage. A logistics expert is needed at this stage for the relatively straightforward task of replenishing stock after a product has been lost and found. The product must be tracked down and withdrawn from the retailers and wholesalers at the second tier of the distribution chain. Withdrawal is made marginally more challenging in this scenario. By the third tier, the product has reached the final destination: the buyer.

#### *Reverse Logistics In Retail Outlets*

Reverse Logistics (RL) is the management and eventual disposal of customer returns in the retail industry. Most instances of RL can be attributed to customers changing their minds, product quality falling short of expectations, products being returned in a damaged state, unsold stock, or products having reached the end of their shelf life and being returned to the manufacturer. Customer satisfaction, societal and economic benefits, and increased profits can all be guaranteed through careful planning and execution of RL. The necessity of maintaining positive connections with both channel partners and consumers, as well as the high expense of storing unwanted items, make RL a top priority for retail managers. In recent

years, RL has emerged as a crucial part of retailers' business models due to the increased importance retailers place on economic and environmental concerns, marketing, competitiveness, and the strategic and operational ramifications of these problems.

#### *Green Reverse Logistics*

With more attention being paid to environmental preservation, a new field known as "green reverse logistics" has developed. "When RL concentrated on beneficial influence on the environment via actions such as reusing, recycling materials and goods, or repairing old items," according to Shayannejad, Alinaghian, and Shirouyehzad [12]. Reducing wasteful products and packaging materials via process and product development is another way in which "green RL" may be experienced. Shirouyehzad, Shayannejad, and Alinaghian [13] argue that "green reverse logistics produces sustainability." A company's sustainability is measured by its capacity to continue operating successfully over time. This is environmentally friendly since it helps the company save money by cutting down on unnecessary expenses and waste.

#### *Distribution Centres*

In order to restock their shelves with new products quickly, FMCGs goods merchants often possess distribution centers (DCs), which are similar to warehouses. Economies of scale and improved customer service are two benefits of streamlined distribution operations that may be realized by streamlining the supply chain as a whole. Supply chain capabilities provided by distribution operations include reduced product handling, facility consolidation, and inventory management costs. By concentrating on the rapid turnover of FMCGs, this research sought to reduce the amount of product handling performed on each individual item. In order to streamline stocks and make order picking and delivery more efficient, facilities were consolidated and equipment was assembled at a single distribution center. High forward product flow turnover, however, also results in a substantial volume of damaged or otherwise nonconforming returns.

#### *Environmental and Sustainability Initiatives*

Understanding and familiarity with green goods for environmental preservation is crucial for anyone concerned about the environment. Material recycling and reuse fall under this category. Moreover, businesses report on environmental concerns, detailing how their operations have an effect on the ecosystems of the neighborhoods on the perimeter of their operations and acknowledging the connection between people, planet, and profit. Corporate Social Responsibility (CSR) is grounded in the organizational strategy of the triple bottom-line, which includes economic, social, and environmental elements. CSR arose out of concerns about labor abuses, human rights, and societal problems. Because of these issues, an increasing number of individuals have become what are called "green customers," sometimes known as "ecologically aware consumers".

The logistics function in SCM has direct effects on the natural world in the areas of sourcing, transit, and storage. Logistics evolves into "green logistics" when suppliers that employ renewable raw materials, ethical labor standards, and transportation with low carbon emissions are used to source goods. If a business adopts these procedures and abides by related government rules and regulations, it will be able to operate indefinitely without damaging the environment. Perseverance, resilience, and endurance are all characteristics of sustainable systems. "Sustainability," sometimes known as the "green" component of a firm, is the company's ability to endure and thrive in the face of adversity.

## VI. RESEARCH PROBLEM AND OBJECTIVES

#### *Problem*

SCM has improved efficiency by making it easier for goods and information to reach consumers. Despite these good trends, the negative effects of RL on businesses are often highlighted, while the beneficial outcomes of this process are seldom discussed. As such, it was crucial to investigate the positive and negative effects of RL on South Africa's largest FMCG merchants.

#### *Objectives*

The fundamental, conceptual, and empirical goals of the research were determining forward and backward flow in supply chains for quickly moving consumer items that move in large volumes via both retail and wholesale networks.

#### *Primary Objectives*

The main goal was to examine how RL affected the top retailers of FMCGs consumer products in South Africa.

#### *Theoretical Objectives*

The following was covered under the theoretical goal: i) Research into the literature on the distribution networks of retailers for FMCG. ii) Researching the literature on sustainable SCM strategies and RL in merchants of FMCGs, and iii) Researching the literature on how RL affects the environment.

#### *Empirical Objectives*

The research sought to demonstrate three empirical findings: i) RL added value for the top retailers of FMCGs. ii) RL improved the sustainability and competitiveness of the top retailers of FMCGs consumer products, and iii) RL decreased environmental waste.

## VII. RESEARCH METHODOLOGY

The impact of RL on South Africa's top FMCGs retailers was investigated using a qualitative research approach and the constructivism research approach. Research data are gathered by in-depth interviews with the participants, as in the constructivism paradigm and qualitative research. The research design is the blueprint for the study that yields data for testing the hypotheses. Theories of sustainable development and theory of comparative advantage served as theoretical anchors for the research. Value recovery via RL was backed by theories of competitive advantage and sustainable development, which both emphasize efficient resource use and waste reduction. Using a non-probabilistic sampling method, the participants were recruited from the distribution centers of major retailers and independent distributors of FMCGs consumer products. Though 18 subjects were initially counted, after adding the 13th subject, data saturation was reached. As proposed in Kumar, we informed the participants about the research and guaranteed their anonymity and confidentiality. They were warned that the interview would last for 30-45 minutes and that their responses would be recorded on a digital recording device. Transcription, interpretation, coding, analysis using Atlas ti.8, and content analysis were all used to confirm the accuracy of the recorded interviews. The study's conclusion was determined based on the participants' emergent perspectives, which were articulated as overarching themes and subsidiary topics.

## VIII. RESULTS AND DISCUSSION

Transcript data analysis uncovered six overarching themes and several supplementary themes that corroborated the study's findings. The primary ideas were on things like warranty/service returns, product reuse, product reimbursement, waste reduction, recovery/distribution returns, and return benefits. The recurring ideas were consistent with what the participants had said and with the study's main and empirical goals. **Table 1** summarizes the text's main ideas as well as a few of its subthemes.

**Table 1.** Main Themes And Sub-Themes Considered In The Research

Major themes	Sub-themes
Warranty return	Return management, policies
Reimbursement product	Repackaging, reusable products
Reusable product	Refurbishing, remanufacture, recycle, reprocessing, stock adjustments
Waste reduction	Environmental safety, reduced dumping
Distribution (recovery return)	Customer returns, waste reclaimer, and landfill
Return benefits	Repackaging, product recall

### *Empirical Objectives and Results*

All three of the study's empirical goals were accomplished:

#### *Empirical Objective 1*

RL added value for the largest sellers of FMCGs, thereby achieving the first empirical goal. Grocery stores can salvage some of their investment in damaged goods by employing RL. Refurbished goods contributed to less garbage being sent to landfills as a result of the recycling process. Thus, FMCGs grocery stores can reap the benefits of RL in the form of value recovery and waste reduction without negatively impacting the environment. The increased profitability from the recovered value boosted the retailers' ability to compete and last in the market for FMCGs. Since participant 7 put it, "We profit from the returned goods as we obtain reimbursement from the suppliers that lower our prices." This was echoed by all the participants. When possible, we also repurpose materials so that less of them end up in landfills. When we renew our business license, we notify the relevant authorities that one of our environmental policies is to engage in RL because of the positive impact it has on the natural world.

#### *Empirical Objective 2*

The major FMCGs merchants' competitiveness and sustainability improved as a result of RL. FMCGs merchants benefit from RL' value recovery since the resale of recovered, reused, and recycled items increased profits, boosted the company's competitiveness, and ensured the continuation of its operations (sustainable practices). Since most stores ran on razor-thin margins, the money made via RL was essential. As one participant put it, "We operate at extremely low margins that need volume sales to break even and compete," so any money made from selling returned goods is a bonus for the company. Before implementing the supply chain strategy, we never had effective procedures on product returns; now we see the value in recycling and reusing materials.

#### *Empirical Objective 3*

The objective fulfilled is that "RL decreased environmental waste." Unmanaged, the tons of waste from the supermarket industry's high turnover rate of items and packaging materials might pose a threat to the natural world. Only a small percentage of these items actually ended up in landfills due to careful RL sorting and return to suppliers for recycling, remanufacturing, and replacement. As part of their efforts to promote a green or circular economy, waste reclaimers gathered used bottles and packaging and sold it to recycling companies for a nominal price. Recovery of lost value from damaged goods and the capacity to lessen environmental waste were both strongly approved by all respondents. Respondent 13 summed up the advantage by saying, "Products return via RL dramatically minimize garbage transferred to the landfills, creating a cleaner environment." This is our little way of helping the climate change movement and making the world a better place.

#### *FMCG in South Africa*

The FMCGs industry has been the subject of research, but not RL specifically. In his research, Kumar, Vohra, and Dangi [14] found that "FMCG firms represent the connection between suppliers and consumers and are thus in a position to play a vital role in advancing green SC efforts in the overall SC." In order to develop a record of sustainable green practices, businesses, particularly those in the localized FMCG sector, must be encouraged to do such study on a systematic basis. According to Ding, Benyoucef, and Xie [15], "multi-sourcing and strategic inventory are two of the key redundant design tactics utilized by San FMCG grocery producers." Companies may use these methods to keep their operations running smoothly. Businesses often use a mixed distribution approach, which gives them options should an incident strike one of their sites. According to Mathu [16], "in South Africa's FMCG industry, buyer organizations increasingly incorporate environmental efforts as a critical criterion in their supplier evaluation criteria, whereas, buyer and supplier relations are established on high levels of trust or quality." The author goes on to advise using quantitative study in future research to get people to feel more comfortable talking about their bad experiences.

There are three broad categories of shops that stock Fast-Moving Consumer Goods (FMCG): supermarkets and general merchandise stores; establishments that offer food, drinks, and tobacco; pharmacies and health food stores; and department stores and discount outlets. Across the country's official and informal distribution channels, consumers with vastly different levels of purchasing power purchase commodities that are both made domestically and imported.

Supermarkets, which have robust distribution networks, are the primary sales points for fast moving consumer goods. Direct sales, online and mobile commerce, and specialty marketplaces for arts and crafts and gourmet foods are some more examples of alternative sales platforms. Johnson & Johnson, Colgate-Palmolive, Estee Lauder, British American Tobacco, Henkel, and Nestle are just a few of the many multinational Fast-Moving Consumer Goods (FMCG) corporations that compete in each of these markets. Pick & Pay, Woolworths, Spar, Shoprite, RCL Foods, and Tiger Brands are only some of the major local supermarkets, food producers, and wholesalers that are publicly traded here. Other major businesses include the pharmacy networks Dis-chem and Clicks and the drugstore chain Woolworths. There is a wealth of locally owned, independently operated small enterprises, such as cosmetics maker and store Africology and shoe boutique Sally Williams (a confectionery retailer and manufacturer).

The freeze that went into effect on 27<sup>th</sup> March, 2020, made already challenging trade scenarios much more so for the for another 4 years. Almost 3 months of selling were lost because supply chains were disrupted and most FMCG were classified as non-essential within the first few quarters of the lockdown. Markets for cigarettes and alcohol were hit the most by sales restrictions, but demand was very high for medicines and fresh produce. Because of widespread panic shopping, essentials like wheat, yeast, soap, and hygiene goods were difficult to come by. It's safe to say that internet sales spiked due to the lockdown. Even before the outbreak of the coronavirus, stores had been seeking to shift the burden of rising operational expenses onto suppliers and other intermediaries. Consumers that are price conscious drive healthy pricing rivalry among stores. Fragmented marketplaces include fierce competition due to the large number of rivals operating in the informal sector and the large number of small enterprises. The four biggest grocery chains control the majority of the market, leading to excessive concentration in the mainstream retail industry.

Competition is generally being somewhat pressed upon by market forces. Despite having less money to spend, price-conscious consumers are the driving force. Pharmacies, distributors, and makers of face masks, sanitizers, and other sanitizing items were found guilty and penalized for arbitrary price spikes during the lockdown, while the Competition Commission is investigating supermarkets for unfair rising prices of some commodities. As a result of its investigation into the grocery store industry, the Commission suggested new regulations meant to weaken the market share of the largest supermarket chains. It's possible that rules will be issued to ensure the suggestions are followed if this doesn't happen.

#### *RL Strategies*

Reverse logistics (RL) refers to the practice of redistributing previously used products (such as customer returns, overstock, and perishable food that has passed its expiration date) in accordance with predetermined rules for the collection and management of such items. Recyclable materials (RL) are the byproducts of consumer production that can be used to start a new economic cycle after being consumed, discarded, or packaged. Some additional processing steps are assumed in RL, such as receiving from consumers, sorting, loading, and unloading, and paying for them based on a predetermined fee schedule and a set of circuits. Logistics experts, in their quest to develop an all-encompassing distribution system, have often begun with the producer and the flow of products from the manufacturer to the customer. During times of rapid economic

expansion, as emerging economies are well aware, urban centers expand outward, resulting in massive new subdivisions. Over time (and in an irregular setting), these are taking on new commercial, academic, and social operations. In some cases, they are established at the same time as the building of homes. Examples of this trend in property development can be seen in the recent expansion of Bucharest's suburban areas.

The goals and objectives of various businesses necessitate the use of distinct RL approaches. The RL approaches used in this investigation were found by reviewing the relevant literature, which comprises the works. China's iron and steel sector served as the basis for studies by Kim, Chung-Ang University, Yan, and Chung-Ang University [17]. To examine how different decision-making elements interact with one another and with one another through feedback, they adopted a multi-criteria decision-making strategy in their study. The authors provide three methods for constructing RL out of numerous possible ones: joint-venture, outsourcing, self-operation. These RL methods were built after extensive discussions with steel industry professionals and a reading of relevant literature. Based on their analysis of the present state of affairs in China's iron and steel sector and the other RL options they discuss, they conclude that the self-operation approach is the most appropriate technique for building RL.

Research conducted by Kyaw et al. [18] looked on methods used to mitigate the impact of perturbations on the SC of beverages and food. This was due to the great difficulties faced by SC executives in the sector of food and beverages when attempting to implement efficient RL methods for minimizing SC interruptions, costs, and hazards. The author suggests that SC administrators in the industry of food and beverages utilize strategies such as communication, inspections, and standard costing to lessen their vulnerability to RL threats. It was also suggested that SC leaders make use of the findings to put into motion an effective inspection strategy to reduce damaged goods, enhance communication with both external and internal stakeholders, and better distribute expenses when returning products to producers due to expiration or damages.

According to Williams and Kistler [19] curtain walls or window façades may attain circularity with the implementation of RL methods such as redistribution, refurbishment, maintenance, energy recuperation, repair, reuse and recycling. The authors realized there was a lack of a structure for developing RL tactics with the help of relevant stakeholders to generate knowledge. In order to assist the RL process, an examination of the current literature and conditions related to curtain walls and windows façade structures was undertaken, and from there, the suggested RL solutions were developed.

Key information gaps regarding the environmental effect of RL techniques from a construction SC viewpoint were addressed by Zhang and He [20]. In order to reduce their social and environmental costs, they used RL strategies such recycling, repurposing, landfilling, and reprocessing, similar to those proposed by Yan and Yu [21]. Their research led them to believe that "reusability" is the most environmentally friendly RL strategy, followed by "reprocessing," which has the least effect of the four options, "recycling," that has the second-highest effect, and "landfilling," that has the greatest impact. Although comparable to the approaches outlined in [22], the RL tactics presented in [23] are distinct from those discussed in [24]. These RL techniques may help FMCGs companies maintain an edge and boost sales in a cutthroat industry. Cho and Ahn [25] argue that a company may distinguish itself from the competition by giving more value to its clients than its rivals. This might be in the form of higher-quality services, cheaper costs, or other advantages that could justify charging a higher price.

### *RL and Firm Competitiveness*

As Pålshaugen [26] points out in their exploration of the development of the concept of competitive advantage, it is important to recall that the concept of competition stems from these early notions. According to Miller [27], "China was by far the greatest performance among the BRICS in 2019, ahead of the Russian Federation, ahead of South Africa by 32 places to the 60th spot, and ahead of India by some 40 places to the 68th spot, and ahead of Brazil by some 50 places to the 100th spot" (71st). Although South Africa did not improve in its global competitiveness ranking in 2015, it did move up to second position among Sub-Saharan African countries. The sector and the economy as a whole might gain from increased SC competitiveness, and this could be the result of increased business competitiveness. While most companies state that they want to be at the forefront of their industry, few actually understand what it takes to achieve and keep a competitive advantage. The literature review that yielded these results included sources like.

Previous work by Khanalizadeh and Ranjandish [28] examined the connection between innovation and competitiveness, with a focus on competitive intelligence as a means of maximizing data utilization in South Africa. According to the Global Competitiveness Index, out of a total of 102 countries, South Africa's ranks a dismal 41st. Knowledge and the application of that knowledge were also found to have a significant impact in the expansion of the global economy. Because of this, South Africa has an opportunity to improve its economy and ascend in the global rankings. Specifically, Edwards and Schoer [29] study analyzed South Africa's competitive performance in the wine market. These authors went on to detail how issues like inefficient government bureaucracy, a lack of necessary infrastructure, a poorly educated labor force, rampant thievery, and a lack of flexible working hours contributed to South Africa's fall from grace. They also found that people generally disapproved of government handouts.

Alarcón et al. [30] investigated the sustainability of RL techniques to give SMEs a long-term advantage (SMEs). Their findings suggest that small and medium-sized enterprises (SMEs) can gain an advantage through the strategic application of RL. Matarirano, Chiloane-Tsoka, and Makina [31] dug deeper into the subject of competition in the South African construction industry. The authors argue that factors such as political instability, leadership style, trade union issues, prolonged negotiating periods, and corruption can have a major impact on an organization's strategy and, by extension, its

performance. Wibowo et al. [32] quantified the impact of RL performance indicators on the long-term success of FMCG companies. Cost, recycling effectiveness, time, quality, and trash were some of the metrics considered. It was determined that RL performance indicators have the potential to greatly enhance environmental performance. Recyclability and quality also benefit the economy. As a final result, they discovered that efficient recycling contributed to societal productivity.

## IX. CONCLUSION AND FUTURE RESEARCH

This research used a constructivist research approach and qualitative methods of inquiry to explore how Reverse Logistics (RL) has affected the leading FMCGs businesses in South Africa. The research relied heavily on the concepts of environmental sustainability and competitive advantage. The main South African retailers and wholesalers of FMCG were investigated in this literature study to determine the impact of RL on their businesses. The research spanned the retail industry in South Africa and the logistics behind FMCGs' rapid turnover, as well as the logistics and RL that are integral to Supply Chain Management (SCM), as well as green RL and other eco-friendly, sustainable plans. Examining the potential benefits and drawbacks of RL for stores was the focus of this investigation. Empirical objectives explored how RL added value for FMCGs businesses, improved competitiveness and sustainability, and cut down on environmental waste, therefore all three levels of goals were met.

Thirteen people were interviewed in retail wholesale and distribution centers. Transcribing, coding, and thematically analyzing the recorded interview using Atlas ti.8 software, and then checking the results with content analysis, yielded the study's final findings. Six overarching themes and several subsidiary topics emerged from the data analysis, all of which pertain to the three empirical goals of the research. Logistics, RL, and environmentally conscious RL were all essential tenets of the management team's supply chain strategy. RL, often known as the management of the backward flow of products, sought to simplify the complicated managerial process by recycling defective goods into usable materials. This included overseeing the collection, sorting, and recycling of used materials as well as the repair and return of refurbished products. Environmental management's ability to rein in waste disposal was bolstered by the philosophy of sustainable development. Management of cost leadership and product/service differentiation are two areas where the consequences of competitive advantage theory may be seen.

Businesses should be required, rather than encouraged, to pursue 'green initiatives' like resource efficiency, waste reduction, cost governance and differentiation, and concentrated technology application in order to remain competitive and sustainable. Green SCM is the ideal state of affairs, representing a transition from traditional supply chain practices. The biggest retailers in South Africa should conduct quantitative research in the future to determine the real advantages received by RL management. As a result, the company's upper echelons would gain insight and begin emphasizing RL as a primary driver of value.

### Data Availability

No data were used to support this study.

### Conflicts of Interest

The author(s) declare(s) that they have no conflicts of interest

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### Competing Interests

There are no competing interests.

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