ASSESSMENT OF REVERSE LOGISTICS PRACTICE AND CHALLENGE: THE CASE OF EAST AFRICAN LION BRANDS MANUFACTURING SC.

BY

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LOGISTICS AND SUPPLY CHAIN POST GRADUATE PROGRAM

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DECLARATION

I, the undersigned, declare that this thesis entitled: ASSESSMENT OF REVERSE LOGISTICS PRACTICE AND CHALLENGE: THE CASE OF EAST AFRICAN LION BRANDS MANUFACTURING SC. is my original work. I have carried out the study with the guidance and support of the research advisor, Matiwos Ensermu (Ass/prof). Any other research or academic sources used here in this study have not been submitted for the award of any degree or diploma program in this or any other institution. All sources of materials used have been acknowledged.

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CERTIFICATION

This is to certify that Gadissa Lemessa has carried out his research work on the topic entitled, ASSESSMENT OF REVERSE LOGISTICS PRACTICE AND CHALLENGE: THE CASE OF EAST AFRICAN LION BRANDS MANUFACTURING SC. The work is original in nature and is suitable for submission for the award of the degree of master Arts in Logistics & Supply Chain Management.

Advisor Name: Matiwos Ensermu(Ass.Prof)

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The Researcher

Abstract

Reverse logistics has a big role in contributing to waste and resource management. Most of manufacturing company's reverse logistics practices focused on expiry goods and food product with short shelf life, overstocked items, and disposal of unused and unwanted products. Moreover, inappropriate waste disposal leads to serious personal and environmental health hazards. The first target of this researc is to assess the reverse logistics practice, challenges, and its impact in sustainable supply chain performance: the case of East Africa lion brands manufacturing Share Company. The research design was descriptive and explanatory implemented by an organizational-based cross-sectional survey from a 40-sample in the company EALBMSC. Moreover, the relationship between reverse logistics practice and sustainable supply chain performance of EALBMSC computed by using correlation and multiple regression analysis. The finding showed that; the company moderately practiced redistribution of products, recalling of quality defect items from customers. Whereas, recycling of materials and disposal of unusable products are weakly practiced. Lack of appropriate technology, infrastructure, and lack of definitive rules and regulations on handling returned products have high influence on implementing reverse logistics practice. Finally, this study concludes that; Redistribution of products, Recall of quality defect items from customers, Recycling of materials and warehouse handling materials, and Disposal of unusable products have significant and positive effect on the sustainable supply chain performance of EALBMSC. Generally, this study concludes that reverse logistics implementation in EALBMSC could contribute to improvement in the economic, environmental, and social performance of EALBMSC.

Key Words: Reverse logistics practice, sustainability

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ABBREVIATIONN/ACRONYMS

EALBMSC- East African Lion Brans manufacturing share company.

RLP-Reverse Logistics Practice

SOPs- Standard Operating Procedures

MOH- Ministry of Health

CLSC-Close Loop Supply Chain

EFDA- Ethiopian Food and SSC-Sustainable Supply chain

SPSS-Statistical Package for social science

GHGs-Green House Gas

CHAPTER ONE

1 INTRODUCTION

1 Back ground of the Study

Reverse logistics refers to the process of moving goods backward from their final destination to the origin or manufacturer for various reasons, such as returns, repairs, recycling, or disposal. It involves managing the logistics of returning products and materials in a cost-effective and efficient manner. Reverse logistics aims to recapture value from returned or end-of-life products while minimizing waste and environmental impact.

In a simple view a product was developed to be manufactured and go through the supply chain (from raw material harvesting to the retailer) to be sold to a customer. However, supply chains are steadily integrating many activities than those concerned with supply alone, like including service and product recovery. Here we will focus on the final recovery and especially reverse logistics, i.e. the handling of products, components and materials during the recovery process. Several forces drive reverse logistics, like, competition and marketing motives, direct economic motives and concerns with the environment (Simme D. P. Flapper, Marisa P. de Brito, 2021)

Reverse logistics practice and challenges are well entertained in a manufacturing company like, East African Lion Brands manufacturing SC, which focuses on producing: Home care manufacturing Unit-Laundry soap and Detergents, Personal Care manufacturing Unit-Skin care and Hair care products, Food manufacturing unit-Supplementary food and Biscuit products and Printing & Packaging unit-Cartons, Flexible films and plastic jars.

EALBMSC collaborates with various distributors and agents to distribute their range of home care and personal care products to consumers. These distributors and agents are situated in different regions across the country. Here is the current roster of distributors and agents partnered with EALBMSC. Instead of using its own truck, EALBMSC relies on distributors and agents to transport their manufactured home care and personal care products. The distributors and agents send their own trucks to the EALBMSC warehouse to load the products and distribute them to the final customers.

Reverse logistics practices involve a range of activities and strategies aimed at effectively managing the flow of products and materials back through the supply chain. Some common reverse logistics practices include: Returns management, Remanufacturing and refurbishing, Recycling and disposal, Asset recovery,

Warranty and repair management, Transportation and logistics optimization and Data analytics and visibility. By implementing these and other best practices, companies can effectively manage the complexities of reverse logistics, reduce costs, recover value from returned products, and contribute to sustainable supply chain management.

2 Statement of the problem

Products, components, materials, equipment and even complete technical systems can go backwards in the supply chain. We have known for some time that during production, products are processed due to unsatisfactory quality, or good materials or components are returned from the production floor because they are left over from production (production returns).

Defective products can be detected once they enter the supply chain, leading to the removal of products throughout the chain (product recall). From this stage, there are more actors in the chain involved in reverse flows based on business arrangements, such as returns or departures of expired stocks of short-term products (B2B business income). (Boon, 2021).

In the business-to-consumer interaction, products and services may be getting back due to mismatches in the expectation or demand and supply in terms of timing or product quality (B2C commercial returns). A particular situation is online markets (e-commerce) where high percentages of returned products are common. Before product expiry and in presence of warranty or service possibilities, products may also be returned to be substituted by others, or for maintenance, warranty and service returns case. Finally, products (it may be after life), products are gathered to be remanufactured or recycled. At this stage two things material's hazard and environmental impact have to be taken into account. As a result, products may flow backward direction in the supply chain for a variety of reasons as listed below: manufacturing returns, commercial returns, product recalls, warranty returns, service returns, end-of-use returns and end-of-life returns. Finally through the above numerous reasons the manufacturing company is go through many harsh production times scenarios like the overhead cost of returned goods. This research will be focused on what is affecting and what reverse is being practiced in East African Lion Brands manufacturing SC

3 General Objective of the study

The general objective of this study is to examine the reverse logistics practice in East African Lion Brands manufacturing SC.

4 Specific Objectives of the study

- To assess reverse logistics practices in East African Lion Brands manufacturing SC.in terms of redistribution, Recall, Recycling, and Disposal?
- To analyze the challenges of reverse logistics in East African Lion Brands manufacturing SC. in terms of Redistribution, Recall, Recycling, and Disposal?

5 Research Questions

- How reverse logistics is being practiced in East African Lion Brands Manufacturing SC. in terms of redistribution, Recall, Recycling, and Disposal?
- What are the challenges of reverse logistics in East African Lion Brands Manufacturing SC

6 Scope of the study

This study will assess the reverse logistics practice in East African Lion Brands manufacturing SC. The factory is located in Bishoftu, Oromia, Ethiopia. Both qualitative and quantitative (Mixed) research approach was applied. The study is expected to be completed within six months.

7 Significance of the study

The research reveals that the company assesses its performance by examining the causes and consequences of product failures, identifying customer's dissatisfaction and reasons for product returns. Once the issues are identified, the company will implement necessary improvements.

The researcher expressed dissatisfaction with the lack of organized and sufficient documentation and previous studies in the field of reverse logistics, particularly in Ethiopia. This study can serve as a valuable resource for future researchers and provide guidance on addressing and resolving issues in reverse supply chain management.

The research can provide researchers with valuable experience, enhance their knowledge and skills, and offer an overview of the study. Additionally, researchers indirectly assist the organization in identifying the company's strengths and weaknesses, while also having the chance to provide recommendations for further improvement.

8 Delimitation of the Study

Even though there are same companies like EALBMSC that are working in Ethiopia, this study is limited to the reverse logistics practices of homecare, personal care, and food unit in Ethiopia, due to time and cost

limitations. The main focus of this study is on the reverse logistics practices of personal care and homecare, as they are the most prevalent in the chosen industry. The researcher solely concentrated on the reverse flow of the supply chain and did not consider forward logistics.

9 Limitation of the study

Literature gap in the study area is the main challenge, especially there are no documents regarding reverse management of personal care and home care products in Ethiopia. The research is Limited to one single company, other same companies are not seen in the research.

10 Definition of terms

Reverse: Going back from destination to its origin.

11 Organization of the paper

This proposal is organized from three parts. The first presents a brief introduction to the subject matter along with research questions, significance, scope, and definition of key terms. The second one encompasses a review of both theoretical and empirical works of literature written by various authors related to the subject matter along with the conceptual framework of the study. Thirdly presents the research methods and methodology exploited to conduct the research. It also elaborates on the research design & approach, data sources, the population of the study, data collection, and analysis methods. Chapter four is about the analysis and interpretation of the data and conclusion and recommendations are stated in chapter five. Reference and the proposed questioner is also attached in the final pages.

CHAPTER TWO

2 Literature review

2.1 Theoretical literature review

2.1.1 Reverse Logistics Management practices

According to (Panjeh Fouladgaran, 2020) RL can be defined as "all logistical operations including 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"

Traditionally a product was developed to be manufactured and go through the supply chain (e.g. manufacturer-wholesaler-retailer) to be sold to a customer. However, supply chains are steadily integrating more activities than those concerned with supply alone, like including service and product recovery. Here we will focus on the latter, and especially reverse logistics, i.e. the handling of products, components and materials during the recovery process. Several forces drive reverse logistics, like, competition and marketing motives, direct economic motives and concerns with the environment (Simme D. P. Flapper, Marisa P. de Brito, 2021)

2.1.2 Reverse logistics practice

Product acquisition/gate keeping

Remanufacturing requires that used products (cores) be obtained from the end- user at the end of their current life cycle so that the value-added may be recovered and the products returned to functional use again. The acquisition of cores to be remanufactured in such recoverable manufacturing systems is a complex set of activities that requires careful coordination to avoid the uncontrolled accumulation of core inventory, or unacceptable levels of customer service. (V. DANIEL R, 2014)

Collection

Product collection is a new tile found in Store Builder that allows brands to showcase curated, related groupings of products. A product collection allows brands to add up to five curated collections on the same page. Brands have the flexibility of grouping products by category, shopping interest, a new product line, or specific seasonal items that make sense for shoppers to find together. For each collection, brands can assign

a unique lifestyle image and name to represent and visually engage shoppers as they browse. (Endalkachew, 2023)

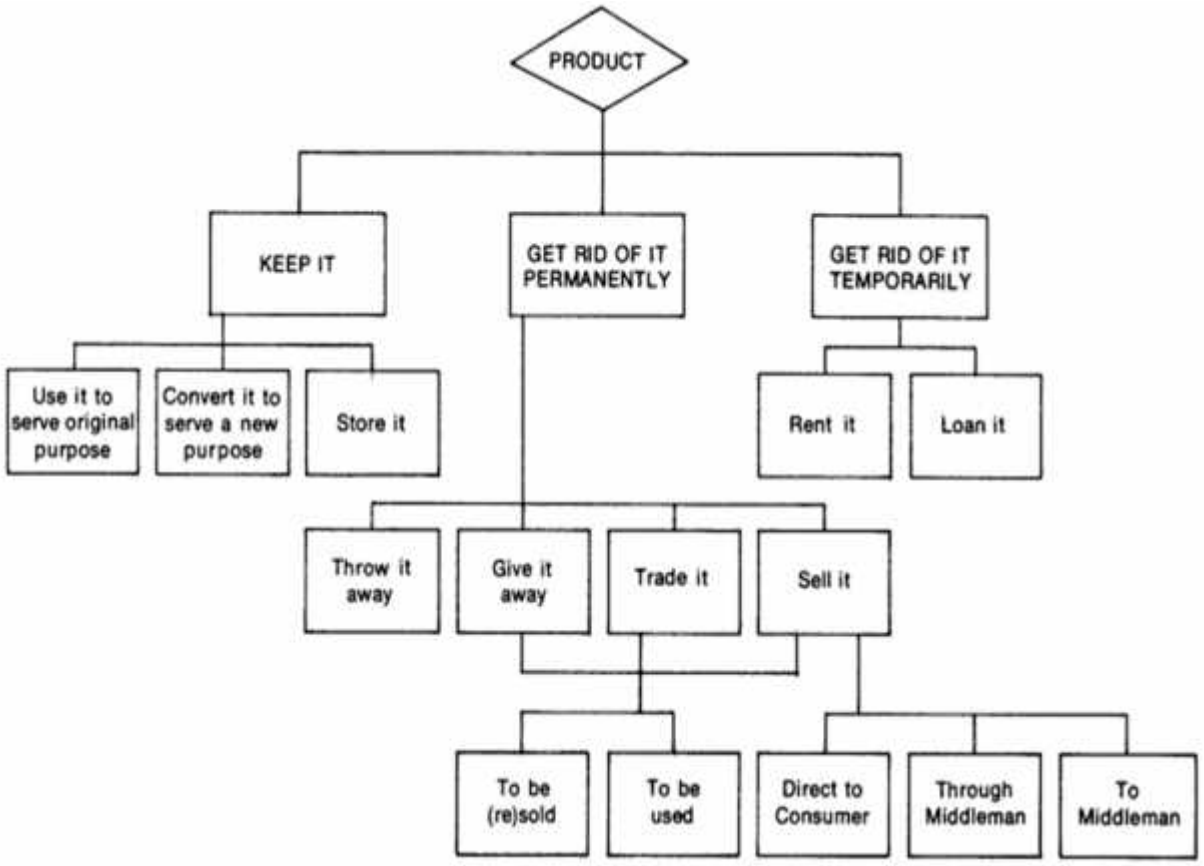
Inspection and sorting

The management of forward logistics systems is concerned with the flow of raw materials, final products and related information along a supply chain; from the last tier of suppliers to the end customers. Reverse logistics (RL), and as the name indicates, is concerned with managing the backward flow, i.e., the return of used products from customers to the producers. RL includes product recovery and material recycling entities that reduce the need for virgin materials, thus conserving natural resources and subsequently reducing environmental costs. (I. Konstantaras, 2009)

Disposition:

Diagram taken from (Jacob et al, 1997)

Figure 1 Disposition Diagram



Redistribution

Redistribution is the process of moving usable medications and medical devices from one point of consumption back to the point of origin and then back to another point of consumption where it is most needed, according to reverse logistic management guidelines for pharmaceuticals and medical devices (MOH, 2021)

Recall

A recall is a process of removing a drug or medical equipment from the pharmaceutical distribution network due to defective manufacturing, reports of severe adverse reactions to the product, or suspicions that the product is fake. The recall procedure started by the producers, retailers, or the government agency (MOH, 2021)

Recycle

Reproducing reversed products is called recycling. Society has been figuring out ways to process products along RSCs informally even before the formal acknowledgment of RL or RSCs. These include repairing clothing to extend its lifespan, repurposing old items such as cleaning rags, and making toast or croutons out of stale bread. Some of the practices include composting kitchen scraps and other waste, recycling aluminum, glass, and plastic containers, building swings out of old tyres and rope, and turning empty wine bottles into candleholders

A recoverable product environment seeks to increase product life via repair, and remanufacturing (including technical upgrades). This type of system focuses on valued-added, rather than material recovery (i.e. recycling systems). Value-added recovery is based on the premise that used products still have value-added remaining embedded in the product. These value-added elements may include functionality (e.g. a discarded mobile phone that works functionally), energy and labour. A major part of the recoverable product environment is the remanufacturing system (®gure 1) that is designed to remanufacture products. Remanufacturing may be described as the transformation of used products, consisting of components and parts, into products that satisfy exactly the same quality and other standards as new products (Lund 1983). A recent report issued shows that remanufacturing can result in signi®cant energy savings, in addition to the savings from the elimination of disposal costs (US EPA 1997). Thus, remanufacturing is environmentally friendly and pro®table. Note that remanufacturing has been reported for a number of prod- ucts, including copiers, toner cartridges, medical equipment, automobile parts, com- puters, o ce furniture, aviation equipment and tyres (Daniel, 2010)

Disposal

The most-cited work on disposition in the marketing literature has focused on defining what qualifies as disposition. (Jacob et al, 1997) Defined disposition as simply the act of "getting rid of" a good and developed a taxonomy of disposal methods with three main types of disposal: deciding to keep the product, temporarily disposing of it, and permanently disposing of it.

Every organization's top priority is managing waste, but the pharmaceutical industry is particularly critical when it comes to managing the disposal of unwanted, outdated, and expired medications through an effective reverse logistics channel. According to the medication, waste management, and disposal directive, there are various ways to dispose of medical waste, including returning it to its manufacturer or supplier, burning it in the open field, putting it in a landfill, or incineration. The characteristics of medical waste must considered when selecting a disposal technique (MOH, 2021)

An understanding of disposition behaviors can provide direction for those retailers interested in responding to consumer use of redistribution channels. In examining consumer disposition, it is important to distinguish between recycling behavior and product disposition. Although recycling behavior is a form of disposition, it occurs when the primary utility of the product or its package has been exhausted. What remains is often viewed as "waste" and must be removed from the household, either by recycling or "trashing" the item. These waste products, if recycled, can be used as raw materials in a process or manufacturing activity. Considerable attention has been given to consumer recycling processes and behavior.

2.2 Empirical Literature review

2.2.1 Reverse logistics management practices and their driving forces

(Blumerg, 2005) Identified another motivating factor that boosted interest in companies offering RL and CLSC providers in the field of 16 reverse logistics. Some of them include: increased customer demands for better customer service satisfaction due to legislation imposed by the government and environmentally friendly products created by competitors; cost reduction by sellers to reduce working capital requirements through complete product control and reverse processes are stated. In addition, he mentioned a number of new return alternatives, such as returning goods for credit, returning warranty items, returning items from short- and long-term rentals and leases, and recalling products. He also mentioned other driving factors, such as the shift in consumer purchasing habits from in-store to online shopping. In addition, the rate of

product obsolescence has increased, the use of reusable containers has increased, and distribution market techniques have changed, enabling retailers to clear their shelves of unsold goods.

In reverse flow the varieties of product types effect reverse logistics practices. Reused packages, disposed computer equipment, unsold commercial goods, spare parts, packaging materials (Van Hoek 1999) are among these product categories. Besides the characteristics of returned products, companies hold to be responsible for the consequences of their activities (from raw material supply to after-sale services) and this responsibility are reinforced by legal and social enforcements. Moreover, companies own objectives like economic, corporate or marketing affect implementation of reverse logistics practices (Rogers, Tibben-Lembke 1998; Lee et al., 2000; Wu and Cheng 2006). In practice, the presence or absence of the factors are considered drivers or barriers to reverse logistics (M.Şükrü Akdoğan, 2012)

2.2.2 Economic drivers

Processing returned or used products provide substantial gains to the companies. In some cases, reusing the products can be a cheap raw material source and sometimes when the production of new products are much more expensive than recovering, reverse logistics is considered as an option. (M.Şükrü Akdoğan, 2012)

In all recovery actions, economic benefits are related with direct and indirect gains. Decreasing the use of raw materials and waste materials, obtaining valuable spare parts and other financial opportunities like second hand market are among direct gains (De Brito and Dekker 2004). Decreasing the use of raw materials; companies are not able to anticipate the amount and timing of product returns. It can benefit from the usable parts of returned products in the production of new products. Thus, the cost of new raw material supplies decrease. (M.Şükrü Akdoğan, 2012)

2.2.3 Legislation

The legislation driver refers to any jurisdiction indicating that a company should recover its products or take them back (Peters 2009).Since the strict legislations about the environmental issues express the extended producer responsibility, companies are entitled to recover their products or accept them back. Companies are holding accountable for the whole product life cycle anymore. (M.Şükrü Akdoğan, 2012)

In some industries like automobile, the producers are obliged to take back the products. Especially in European Union, regulations such as End-of-life Vehicles Directive (ELV), Waste Electrical and Electronic Equipment Directive (WEEE), Restriction of Use of Certain Hazardous Substances Directive (RoHS), packaging and packaging waste directive dictates the prevention of waste and promotes the recovery of

waste. In Turkey since 2009 the companies in electronic industry are subject to Waste Electrical and Electronic Equipment Directive. In the directive, the responsibilities of producers start with the new product design process, production methods and proceeds to the waste disposal.

2.2.4 Social (corporate citizenship)

Corporate citizenship refers to the set of values or principles that an organization holds to be responsible with RL activities. The motivations behind the implication of RL activities lay on both being legally obliged and trying to establish an image the consumers desires as an environmentally responsible organization. Better customer services such as increasing the level of customer awareness for returning and refunding options, guaranteeing better services would affect company's image positively and provide potential benefit. The Japanese firm Fujitsu produces "green" products by developing a philosophy called "Green Life 21". Fujitsu places environmental issues at the top of management priorities with the philosophy. (M.Şükrü Akdoğan, 2012)

India is well endowed with both technology and human resources. Despite this, the concept of Reverse logistics is yet not widely accepted because of lot many barriers for its successful implementation. Some of these barriers are lack of systems, management inattention, financial resources, personal resources, company policies. It is a risky endeavor for the top management as it involves financial and operational aspects which determine the performance of the company in long run. The barriers mentioned not only affect the operations of reverse logistics but also influences one another. Thus, it is very essential to understand the mutual relationship among the barriers. A critical analysis of the barriers hindering RL and their interaction with the various aspects in integrative planning can be a valuable source of information to decision makers. The identification of barriers which can aggravate few more barriers and those independent barriers, which are most influenced by driving barriers) would be helpful for the top management implementing the reverse logistics programs. This can be a guide for taking appropriate action to tackle barriers in reverse logistics. An ISM approach has been proposed here to for structuring the barriers. (D, 2011)

2.3 Challenges of Reverse logistics

2.3.1 Financial constraints

One of the difficulties in implementing reverse logistics in this regarded business is the lack of funds. Companies must allocate cash and other resources for the implementation of reverse logistics, according to.

Additional funding needed for information and technology systems because, in the current environment, it is impossible to track and trace returned products, and recover products through reuse, remanufacturing, recycling, etc.

2.3.2 Lack of awareness about RL

The majority of organization frequently lacks knowledge of the advantages of reverse logistics deployment. Additionally, Sharma and his collaborators pointed out that customers today benefit from a wider selection of products. Unsold goods, return rates, packing materials, and waste have all increased as a result. Reverse logistics has become more common as a result of the surge in product returns. By recovering the returned goods for reuse, remanufacturing, recycling, or a mix of these alternatives for adding value to the product, reverse logistics can result in financial gains (Sharma et al, 2011)

2.3.3. Management inattention

Reverse logistics implementation is not given much management intention. According to Sharma and his colleagues, most businesses have adopted reverse logistics practices during the past few years mostly due to legislative requirements or pressure from environmental organizations, rather than for financial advantage. As a result, the management is less interested in matters of no profit. Businesses structured around the forward flow of goods (Sharma et al, 2011)

2.3.4. Personnel resources

For effectively managing and ultimately creating the reverse logistics, training individuals associated with this process is also crucial. A lack of qualified employees is a major obstacle to effective reverse logistics, according to Sharma and his colleagues. In order to succeed in any organization, education, and training are essential (Sharma et al, 2011)

2.3.5 Inadequate Technological Systems

The lack of suitable technologies is one of the factors slowing down the implementation of reverse logistics; without them, it is challenging to locate the products that need to be reversed. Information technology is crucial for end-to-end control, transparency, according to Sharma and his colleagues (Sharma et al, 2011)

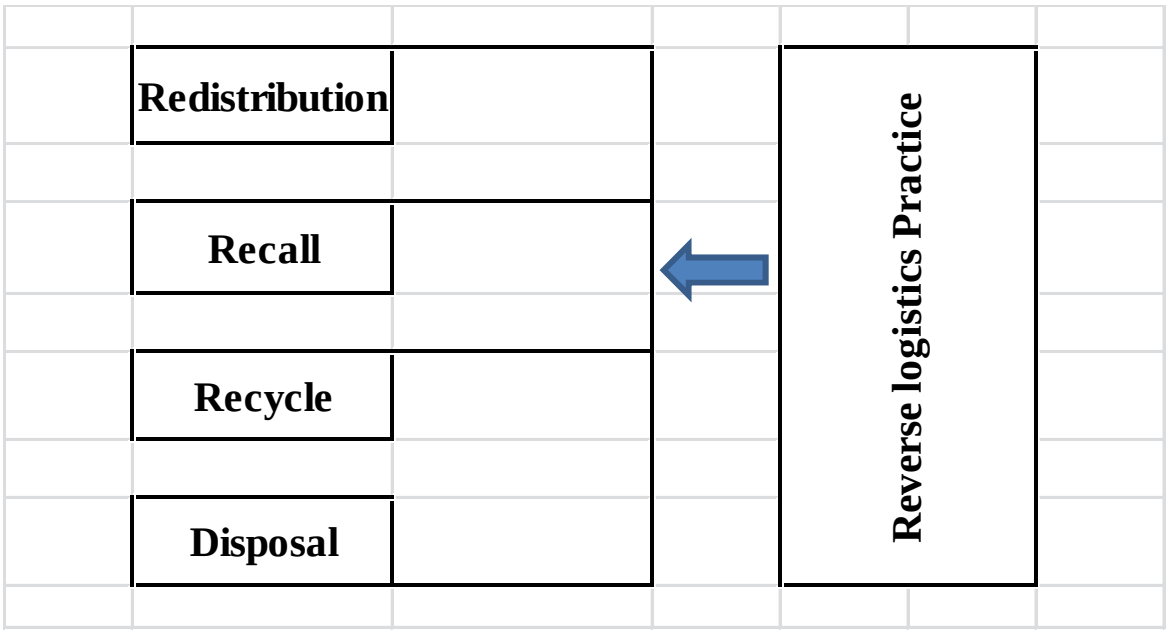
2.3.6 Policies and guidelines

One of the most frequent problems with reverse logistics deployment is the absence of clearly specified policies and procedures. Companies do not want their "junk" to degrade the quality of what they already have. They must therefore create policies that make it simple to handle returns and to recover a large amount of money from those returns (Sharma et al, 2011)

2.4 Conceptual framework

The figure below shows the conceptual framework of the study. The conceptual framework focuses on the practice of reverse logistics management in the supply chain.

Figure 2 Conceptual/Hypothetical Framework



CHAPTER THREE

3 Research Methodology

3.1 Description of the study area

East African Lion Brands Manufacturing S.C is a manufacturing company that produces a wide range of home care and personal care products. Home care products are essential for daily household care and cleaning, while personal care products are consumer goods used on the body, including the skin and hair. In addition to these products, the company is also in the process of setting up a modern supplementary food production plant, which is anticipated to be operational by 2024. These food products will be supplied to government and international organizations, including the World Food Program (WFP).

In an effort to entice concrete investment through joint ventures or private equity involvement, the East African Group constructed an industrial park spanning 70 acres of land located approximately 40 kilometers east of Addis Ababa in Bishoftu. By 1997, the park was outfitted with essential infrastructure such as roads, power, communication links, a central warehouse, weigh-bridge, and water. The East African Group was the pioneer in establishing a private industrial zone with a variety of manufacturing units.

The group's industrial park includes various major industries, including

- Home care manufacturing Unit-Laundry soap and Detergents
- Personal Care manufacturing Unit-Skin care and Hair care products
- Food manufacturing unit-Supplementary food and Biscuit products
- Printing & Packaging unit-Cartons, Flexible films and plastic jars

Additionally, the park features a central warehouse spanning 8000m2, which serves as a storage space for finished goods and raw materials across all manufacturing facilities.

In 2011, the East African group partnered with Tiger Brands, a leading South African FMCG company, to enhance its capacity and competitiveness in the long term. This partnership allowed for necessary capacity upgrades, major expansion projects, and knowledge and technology transfer to develop new products. As a result, the joint venture entity was established as East African Tiger Brands Industries PLC. After Tiger Brands' departure, the parent company formed a new joint venture with Cephus equity capital and renamed the company as East African Lion Brands manufacturing SC.

With a structured and professional management team and over 448 employees, EALBMSC has contributed significantly to reducing the country's unemployment rate. The company has implemented ISO 9001:2015

QMS and continues to invest in modern technology to increase manufacturing capacity and efficiency. EALBMSC aims to become the most admired Ethiopian branded FMCG Company.

EALBMSC collaborates with various distributors and agents to distribute their range of home care and personal care products to consumers. These distributors and agents are situated in different regions across the country. Here is the current roster of distributors and agents partnered with EALBMSC. Instead of using its own truck, EALBMSC relies on distributors and agents to transport their manufactured home care and personal care products. The distributors and agents send their own trucks to the EALBMSC warehouse to load the products and distribute them to the final customers.

Over the past two years, the company has encountered difficulties in the production of certain home care and personal care products, particularly the Vitex Verbal Hair Oil and crown 250gm laundry soap. Numerous complaints have been received from customers regarding these specific products. The Vitex Verbal Hair Oil has been experiencing significant leakage, while the crown 250gm laundry soap has been drying poorly and turning pale white to the point of breaking down. The situation became so severe that it even caused damage to the customers' warehouses. To address this issue, the senior management of EALBMSC formed a team consisting of experts in quality, production, marketing, and warehousing. This team visited the customers' warehouses to identify the root cause of these problems.

3.2 Research Approach

In order to come up with the research questions developed in chapter one mixed research approach is better to conduct this study, which means qualitative and quantitative research approaches will be applied. The qualitative analysis discusses the company experience, challenges and practices in the service and goods provided. It also helps to, vividly, understand the challenges in the company.

The quantitative analysis principally intended to assess the status of the company regarding the availability of resources and potential capacity to implement the reverse logistics practice. Within this analysis, based on the available enablers within the company, both short run and long run measures will be suggested.

3.3 Research Design

The research design for this study is descriptive and explanatory inferential statistics in order to test the hypotheses. These designs are chosen based on the nature of the study putting the development of reverse logistics practice in EALMSC.

3.4 Study Population and Sample Design

For this study purposive sampling technique is used because the research mainly targets the level of implementation of reverse logistics practices for the given growing manufacturing company. Purposive sampling technique will be employed for several reasons. Besides their proximity, it is assumed that since the company is well established through time, it is expected to be familiar in the practice of environmental protection. To substantiate the above argument, it is known that factories have a bi-product that will be thrown away and waste water treatment that can impact the environment. The case for EALMSC. Also in bulk amount bi-products flee out to the environment. In the same fashion, the researcher is interested to study the measures taken by the firm towards Reverse logistics. Supply chain management department of the companies has 40 employees; managerial, middle employees and expertise. Due to small number of supply chain management department employees this research will use the whole population using census method. Questionnaire are distributed for 40 employees who are familiar with the Reverse logistics decision and concept.

3.5 Data source and collection Procedure

For this research both primary and secondary data are gathered. interview and questionnaires are employed to collect primary data. The interview is with heads of supply chain, procurement and logistics (transportation) departments from each company and questionnaires for supply chain, procurement and logistics personnel of the companies to understand the current status of the company towards Reverse logistics using a five-scale rating (1-5 strongly agree to strongly disagree). Secondary data was gathered from survey, key informant interview and company profile. Based on this the company‘s procurement, product quality and reverse logistics will be assessed and evaluated to come up with a model that could fit the context of food and hygiene manufacturing companies.

3.6 Data Analysis

The SPSS Version 23.0 software package used to process the quantitative data collected since it saves time and reduces the workload for the researcher. Before analyzing the data, other important activities such as questionnaire review, editing, coding, transcription, data cleaning, and statistical adjustment carried out. The primary features of the sample presented using descriptive statistics, which include frequencies, percentages, means, standard deviations, and their connections among the major variables. Additionally, multiple regression and correlation analysis utilized to determine the relationship between the utilization of reverse logistics and the effectiveness of the company sustainable supply chain. Moreover, Reverse logistics practices (redistribution, recall, recycling and disposal) were regressed against the sustainable supply chain (Economical, social, and environmental) performance of EALBMSC.

3.7 Validity and Reliability test

3.7.1 Validity test

The validity of measuring instruments of this study Pilot test carried out. Ten respondents were involved for the pilot test. They selected randomly from the professional staff of EALBMSC. By doing so the researcher could understood whether the questionnaire is understandable by the respondent or not. Moreover, based on feedbacks the questionnaire modified accordingly.

3.7.2 Reliability

Cronbach's alpha used to assess the instrument's reliability. Sekaran (2005) states that an instrument has low reliability (and is therefore susceptible to error) if Cronbach's alpha is less than 0.6. If the instrument's alpha value is greater than 0.7, it is suitable. As a result, the internal consistency of data collecting instrument's items evaluated in this study using Cronbach's alpha approach is acceptable. The reliability of the items created for respondents assessed, by considering the aforementioned literature.

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.724	**10**

Reliability test

3.8 Ethical consideration

For facilitating the study, before collecting any data, study participants gave their verbal and written consent. Participants in the study explicitly told that they could stop participating in it whenever they needed to. This thesis includes a thorough evaluation of all relevant literature as well as accurate citations for all sources and materials used. Each respondent's right to decline or respond to some or all questions respected. For reasons of confidentiality, study participants' names are not included in the study report

Chapter Four

4.1 Results, Interpretation and Discussion

This Chapter investigates the level of adoption of Reverse Logistics, its challenge and performance in the company: the case of ELBMSC. In this section the data analysis results are presented with brief interpretations. The analysis contains both descriptive and inferential compiled results. The demographic profile of the respondents described by descriptive statistics, which also analyses the responses to each attribute. On the other side scale reliability tests, correlations, and multiple regression analysis of the topic are included in inferential statistics.

A self-administered that has (two component) questionnaire were distributed. The respondent's personal details, including gender, education level, length of employment, and current position, are in the first section. Reverse logistics practices (Redistribution, Recall, Recycling, and Disposal), its performance like Economic performance measures, Environmental performance measures, and Social performance measures), and challenges to reverse logistics practice are all covered in the second section of the study.

40 questionnaires were distributed in the company, and all of them were filled out and returned, making up 100% of the total. Since the researcher was in nearby approach there were no missing data and all questionnaires (cases) were acceptable and valid. For the better analysis and discussion the gathered respondent data were encoded with SPSS 23.0.

Following the completion of the analysis the following outcomes are occurred and narrated below with different statistical tools.

Frequency, mean deviation and standard deviation are mainly used statistical tools and the data is expressed in table, pie chart and histogram.

4.2 Demographic Characteristics of the Respondents

The demographic nature of the respondents like gender, work position, experience and related data are analyzed

4.2.1 Gender

Sex					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Male	23	57.5	57.5	57.5
	Female	17	42.5	42.5	100.0
	Total	40	100.0	100.0	

Table 1 Demographic characteristics of respondents

Respondents' gender distribution shows that men made up the majority of the sample (57.5%), while women made up the remaining 42.5%. Males made up more than half of the respondents.

4.2.2 Educational Background

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Diploma	3	7.5	7.5	7.5
	Degree	28	70.0	70.0	77.5
	Master's Degree and Above	9	22.5	22.5	100.0
	Total	40	100.0	100.0	

Table 2.Education Back ground of respondents

The researcher also needs to know how much the literacy level of respondents'. Based on the results shown in the above table, only 7.5% of respondents had a diploma educational level, while 70% of respondents had

a first-degree education. Of the others, 22.5% had a second degree or higher. The data indicates, the majority of the employees were highly educated.

4.2.3 Work Experience/Employment Year

Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
	<2 years	3	7.5	7.5	7.5
	3-5 years	10	25.0	25.0	32.5
	6-10 Years	17	42.5	42.5	75.0
	>10 years	10	25.0	25.0	100.0
	Total	40	100.0	100.0	

Table 3Work experience back ground of respondents

The researcher includes the respondents' employment history in the investigation. According to above table, there were 10 respondents, or 25% of the total, who had worked for more than 10 years, 17 respondents, or 42.5% of the total, who had worked for six up to ten years, and 10 respondents, or 25% of the total, who had worked for between three to five years. The results demonstrate that most respondents have more than three years of relevant job experience, demonstrating that most respondents are familiar with how EALBMC operates.

4.2.4 Work Position of Employee

Work Position					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Warehouse Manager	2	5.0	5.0	5.0
	Officer	20	50.0	50.0	55.0
	Team Leader	11	27.5	27.5	82.5
	Director/Branch manager	6	15.0	15.0	97.5
	Supply Chain Manger	1	2.5	2.5	100.0
	Total	40	100.0	100.0	

Table 4.Work position of respondents

The researcher was also interested to know the current position of the respondents in EALBMSC. From the results indicated in the table half of the respondents were officers, 27.5% were team leader, 5 % warehouse manager, 15 % were director/ branch managers and only 2.5 % of the respondents were supply chain manager. Therefore, the findings showed that the majority of the respondents were officers.

4.2.5 Adoption of Reverse logistics system in the company/EALBMSC

Year of Reverse logistics system in the company					
		Frequency	Percent	Valid Percent	Cumulative Percent
	>6 years	40	100.0	100.0	100.0

Table 5.Adoption of Reverse logistics system in the company/EALBMSC

As per the intentions of the researcher to know how long the reverse logistics system was been applied, all of the respondents gave the same answer and the company has been using Reverse logistics system for more than six years.

4.3 Reverse Logistics Practice in EALBMSC

The purpose of the study is to assess the main practices of reverse logistics in the manufacturing industry, EALBMSC as a case study. Respondents from the company were asked to tell about what extent and what practice is being entertained in the reverse logistics system, such as redistribution, recall, recycling, and disposal.

Questions for respondents were distributed with a 5-point Likert scale, i.e, 1 denoting "no extent," 2 denoting "small extent," 3 denoting "moderate extent," 4 denoting "great extent," and 5 denoting "very great extent."

According to Alfarra (2006), the range is calculated by (5-1=4) and then divided by five because it is the highest value of the scale (4/5=0.80), in order to find the lowest and maximum length of a five-point Likert type scale. The first value on the scale, which is the least, added to determine the cell's maximum. From 1 to 1.80 denotes extremely weak practice, from 1.81 to 2.60 weak practices, from 2.61 to 3.4 moderate practices, from 3.41 to 4.2 strongly practiced, and from 4.21 to 5.00 very highly practiced.

4.3.1 Redistribution as a reverse logistics practices in EALBMSC

Indicators, N=40	Mean	Std. Deviation
EALBMSC has a well-documented policy and procedure for the redistribution of overstocked/slow-moving and near-expiry manufacturing products	3.43	.781
EALBMSC redistributes overstocked manufacturing products between EALBMSC hubs	4.28	.816
EALBMSC redistributes slow-moving manufacturing products between EALBMSC hubs	3.03	.862
EALBMSC redistributes near-expiry manufacturing products between EALBMSC hubs	2.93	.829
EALBMSC do report on how much cost saved/revenue generated by doing redistribution.	3.78	.577
Sum	**3.49**	

Table 6. Redistribution as a reverse logistics practices in EALBMSC

The results, which are shown in the Table, demonstrated that the East African lion brands manufacturing share company has adopted redistribution as a reverse logistics practice to a clear and measurable extent, as seen by its weighted mean of 3.49, which is strongly practiced as per Alfarra, 2006 calculation. Respondents found to be familiar with reporting on how much money made or saved by redistributing goods, with a moderate mean of 3.78. Likewise, they indicated that adoption of redistributes overstocked products between EALBMSC hubs was relatively prominent given its mean of 4.28, highly entertained practice. Moreover, as per study participants responded, redistributes slow moving products between EALBMSC with a mean of 3.03, and redistributes near expiry products between EALBMSC hubs given its mean of 2.93. Lastly, respondents confirmed that having a well-documented policy and procedure for the redistribution of over stocked/slow-moving and near-expiry pharmaceutical products given its mean of 3.43. The researcher concluded that the redistribution practices are strongly implemented except near expiry products, which is moderately implemented in EALBMSC

4.3.2 Recall as a reverse logistics practices at EALBMSC

Indicators, N=40	Mean	Std. Deviation
EALBMSC has a well-documented policy and procedure to recall manufacturing products that have safety issues or defects.	4.43	.747
EALBMSC recalls products with safety issues or defects detected by the authorized body (EFDA) or manufacturers on time.	3.53	.847
EALBMSC hubs/head office return recalled Manufacturing items with safety issues or defects to the respective suppliers, and manufacturer.	3.10	.632
EALBMSC hubs/head office has received reimbursement for the reversed product in kind/ cash (only for recalled products)	3.15	.736
Sum	**3.55**	

Table 7. Recall as a reverse logistics practices at EALBMSC

Previously its defined that recall is a process in which a manufacturer or distributor of a product requests the return of a particular product from consumers or retailers due to safety concerns, defects, or regulatory violations. Recalls are typically initiated when a product is found to pose a risk to consumers' health or safety, or when it fails to meet regulatory standards.

The analysis also shows that EALBMSC significantly practice recall and have apolicy for this action with a mean value of 4.43 and recalls products with safety issues or defects detected by the authorized body (EFDA) or manufacturers on time with mean of 3.5. EALBMSC hubs/head office return recalled Manufacturing items with safety issues or defects to the respective suppliers, and manufacturer the respondent rates with mean 3.1, finally EALBMSC hubs/head office has received reimbursement for the reversed product in kind/ cash (only for recalled products).

4.3.3 Recycle as a reverse logistics practice

Indicators, N=40	Mean	Std. Deviation
EALBMSC has a well-documented policy and procedure to recycle packaging paper (cartoons), pallets, containers, and plastics	3.40	.810
EALBMSC recycles or transfer to other parties' the recyclable packaging materials like cartoons, pallets, containers, metals, glass, and plastics to be recycled.	2.33	.829
EALBMSC do a Report on how much cost saved/revenue generated by recycling.	3.42	.712
Sum	**3.05**	

Table 8 Recycle as a reverse logistics practice

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. This helps to conserve natural resources, reduce pollution, and save energy. Recycling plays a crucial role in reducing waste and protecting the environment for future generations. It is important for individuals and communities to participate in recycling efforts to help create a more sustainable world.

The above table reveals the company has a policy document to recycle products with a mean of 3.4 and the company is weak in recycles or transfer to other parties' the recyclable packaging materials like cartoons, pallets, containers, metals, glass, and plastics to be recycled with mean score of 2.33. Lastly EALBMSC do a report on how much cost saved/revenue generated by recycling.

Recycling has benefits for the company EALBMSC in minimizing cost of materials, conservation of resource, in reduction of pollution, energy saving and conservation of landfill space and climate mitigation.

Overall, recycling is essential for sustainable resource management, pollution reduction, and environmental protection. It is a key component of efforts to create a more circular and sustainable economy in EALBMSC.

A photo shoots of the recycled and distribution units in EALBMSC

4.3.4 Disposal as a reverse logistics practice

Indicators, N=40	Mean	Std. Deviation
EALBMSC uses standardized guide lines and SOPs for disposing of unusable products.	3.50	.751
EALBMSC uses appropriate technology and equipment for the disposal of unusable products.	2.12	.648
EALBMSC uses the Sewer method for the disposal of unusable products.	2.13	.757
EALBMSC uses the Incineration method for the disposal of unusable products.	2.20	.758
EALBMSC uses the landfill method for the disposal of unusable products.	3.43	.747
Sum	**2.67**	

Table 9 Disposal as a reverse logistics practice

The last reverse logistics practice in the company is disposal of returned and damaged products. The result in the table above shows how respondents react for disposal indicators in the company.

As we all know disposal refers to the act of getting rid of something or throwing it away. This can involve discarding waste, unwanted items, or materials that are no longer needed or useful. Disposal can be done in various ways, such as recycling, landfilling, incineration, or composting. Proper disposal is important to prevent environmental pollution and protect public health. In EALBMSC the company has a guide to dispose unusable products is with mean score 3.5 which is a great number that shows the company has sound disposal practice. Secondly the company uses the landfill method for the disposal of unusable products with mean score 3.43. The company is weak at uses the Sewer method for the disposal of unusable products and uses the Incineration method for the disposal of unusable products.

4.4 Challenges of reverse logistics practices in EALBMSC.

The study targets to identify the challenges faced in EALBMSC when using reverse logistics practices. The major challenges in the implementation of reverse logistics in EALBMSC were rated on a Likert scale of 1 to 5, with 1 representing "not at all," 2 representing "to a small extent," 3 representing "to a moderate extent," 4 representing "to a large extent," and 5 meaning "to a very large extent." The outcomes are shown in the table below. When looking at problems or challenges faced in implementing reverse logistics in

EALBMSC context the survey results presented in the table below. The technological challenges like, lack of appropriate technology with a mean value of 2.97, and Infrastructure challenges, like lack of appropriate infrastructure with mean value of 3.0 have high influence on implanting reverse logistics practice in EALBMSC. Moreover, regulatory challenges like, lack of definite rules and regulations on handling returned products with a mean value of 2.51, and Retailer/supplier, manufacturer conflict on condition of item or value on return or timeliness of response with a mean value of 2.88 also have high influence in implementing reverse logistics practices in EALBMSC

Indicators, N=40	**Mean**	**Std. Deviation**
lack of appropriate technology is a challenge in implementing reverse logistics practices in EALBMSC	2.97	.660
lack of appropriate infrastructure is a challenge in implementing reverse logistics practices in EALBMSC	3.00	.784
lack of definite rules and regulations on handling returned products is a challenge in implementing reverse logistics practices in EALBMSC	2.15	.893
Retailer/supplier, manufacturer conflict i.e. on condition of item or value on return or timeliness of response is a challenge in implementing reverse logistics practices in EALBMSC	2.88	.607
Reverse logistics operating cost is a challenge in implementing reverse logistics practices in EALBMSC	2.25	.776
Lack of top management commitment is a challenge in implementing reverse logistics practices in EALBMSC	4.07	.694
Sum	**2.88**	

Table 10. Challenges of reverse logistics practices in EALBMSC

4.5 Relationship between reverse logistics practices and sustainable supply chain performance

The objective of supply chain sustainability is to create, protect, and grow long-term environmental, social, and economic value for all stockholders involved in bringing products and services to market As a result, this study attempted to examine the relationship between reverse logistics practice and EALBMSC performance on these three sustainability dimensions.

As per the data collected to rate the indicators of EALBMSC, sustainable supply chain performance (economic, environmental, and social performance) as well as the degree to which reverse logistics practices (redistribution, recall, recycling, and disposal) were used.

4.5.1 Correlation Analysis between Reverse Logistics Practice and Sustainable performance of the company

Reverse logistics practices (redistribution, recall, recycling and disposal) and the supply chain performance of the company can be effectively measured by their relation called correlational analysis.

Pearson correlation analysis performed at the 0.05 and 0.01 levels for given variables. Table below provides a summary of the correlation tests.

According to (Festinger, . (2005).) Correlations between 0.01 and 0.30 regarded as weak correlations, 0.30 and 0.70 as moderate correlations, 0.70 and 0.90 as strong correlations, and 0.90 and 1.00 as extremely strong correlations.

In EALBMSC, reverse logistics practice is significantly depend on these practices with (Distribution r=0.481, recall r= 0.587, recycle r=0.544, distribution r=.648). There is a moderate positive linear relationship between the practices and the reverse logistics.

There is a moderate positive relationship between supply chain performance measures with (Economic performance Measures r=0.7.2, Environmental Performance measures r=0.417, Social performance Measures r=0.709)

Correlations

		Redistribution	Recall	Recycle	Disposal	Economic Performance Measures	Environment Performance Measures	Social Performance Measures
Redistribution	Pearson Correlation	1						
	Sig. (2-tailed)							
Recall	Pearson Correlation	.007	1					
	Sig. (2-tailed)	.965						
Recycle	Pearson Correlation	.232	.093	1				
	Sig. (2-tailed)	.149	.566					
Disposal	Pearson Correlation	-.086	.304	.045	1			
	Sig. (2-tailed)	.599	.057	.783				
Economic Performance Measures	Pearson Correlation	.138	.075	.068	.163	1		
	Sig. (2-tailed)	.395	.647	.678	.316			
Environment Performance Measures	Pearson Correlation	.038	.120	-.187	.078	.114	1	
	Sig. (2-tailed)	.820	.466	.254	.636	.490		
Social Performance Measures	Pearson Correlation	.031	.271	.074	.109	.183	-.063	1
	Sig. (2-tailed)	.850	.091	.652	.502	.259	.702	

Table 11. Corelation analysis

CHAPTER FIVE

5 SUMMARY, CONCLUSION AND RECOMMENDATION

In this chapter, key findings summarized and addressed for each of the primary research objectives, in addition, the findings that came from the analysis part of this study and recommendations that could put into practice or used in future research also covered.

5.1 SUMMARY OF MAIN FINDINGS

The major objective of this study was to assess the reverse logistics management practice, challenges: the case of East African Loin Brand Manufacturing SC. The study sought to establish the extent of adoption of reverse logistics practices in EALBMSC. Respondents requested to state the extent of adoption of reverse logistics practices including redistribution, reuse, recycling and disposal.

With a grand mean of 3.49, the results indicated that EALBMSC moderately practiced redistribution of products that were overstocked, slowly moving, and about to expire in EALBMSC. With a grand mean of 3.05, EALBMSC's recycling of materials was a mediocre practice. With a grand mean of 2.67, EALBMSC 's usage of disposal was weak. Furthermore, with a grand mean of 3.55, EALBMSC's moderately practices recalling quality-defect medication from consumers.

Lack of suitable technology and infrastructure, as well as a lack of clear guidelines and regulations regarding the handling of returned products, rank highly among the difficulties that EALBMSC faces in implementing reverse logistics practices. Likewise, reverse logistics operating cost, top management commitment, and suppliers/manufactures conflict on conditions of items, value on return, and timeliness of response have moderate influence with different mean value as shown in chapter four.

The value indicates that: Redistribution, Recall, Recycling and disposal of usable products affects sustainable supply chain performance of EALBMSC is statically significant.

5.1.1 Conclusion

The main parameters investigated in the study are redistribution, recall, recycling and disposal. The research revealed that these practice are moderately well implemented in the subjected company covered. Lack of appropriate technologies and infrastructure, and lack of appropriate rule and regulations on returned items are major challenges. Moreover, reverse logistics operating cost, top management commitment, and

manufactures/ suppliers conflict on conditions of items, values on returns, and timelines of response have moderate influence.

Finally it is concluded that, redistribution of products, recall quality defect products from customers, recycling of materials and warehouse handling materials, and disposal of unusable products have a significant positive effect on sustainable supply chain performance of the company. Overall, this study conclude that reverse logistics implementation in EALBMSC could contribute to improvement in economic, environmental, and social performance of EPSS.

5.1.2 Recommendation

The analysis showed that, EALMBSC weakly practiced reverse logistics activities; therefore, the organization should give emphasis on system strengthening of its product reverse logistics practice for better outcome. As per the study reveals, lack of appropriate technologies and infrastructures and lack of appropriate rules and regulations on handling returned materials are major challenges. Therefore, the investigator of this study highly recommends that

Infrastructure that enable the company to accommodate reverse logistics practices and other customers; Apply better technologist and IT system (ERP) to increase data visibility of products and easily communication; defined rule and regulation on handling of returned products; Build public private partnership; Work with different stockholder and development partners to fill the gaps. More over working with suppliers all the time is crucial thing.

Overall, the study summarize that reverse logistics implementation in EALBMSC could contribute to improvement in economic, environmental, and social performance of EALBMSC. Therefore, EALBMSC should strengthen reverse logistics management system by aspiring to achieve its organizational vision “To be the most responsive and efficient food and other household supply chain organizations in Africa by 2035.

5.1.3 Suggestion for further researches

This study examines the practice and challenges of reverse logistics management and its effect on sustainable supply chain performance at East African Lion brands manufacturing sc. Hence, further study is recommended by investigator’s to assess reverses logistics practices, challenges and effects sustainable supply chain on other same manufacturing company supply chain actors like local manufacturers and food facilities in Ethiopia to have a full picture on this regard.

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Dear Sir/Madam

Acknowledgment to the respondent

Without your diligent assistance in completing this questionnaire, the research could not have been carried out. Please accept my sincere gratitude.

I am Gadissa Lemmessa, student from Addis Ababa University, college of Business and Economics: School of Commerce, currently carrying out research in partial fulfillment of the requirements for the award of a Master's degree in logistics and supply chain management.

This survey intended to gather information on reverse logistics practices, challenges, and contributions to sustainable supply chain performance, with particular reference to the manufacturing sector. The goal of the study is to ascertain the degree to which East African Lion Brands Manufacturing Sc. (EALBMSC) has embraced reverse logistics practices, the impact of reverse logistics on the performance of sustainable supply chains, and the difficulties encountered in doing so. Information obtained will be used only for academic purposes and will be handled with the utmost confidentiality. Dear responded, your participation is voluntary, and I can guarantee that the data we collect will be kept private and anonymous. Your informed consent to participate in the study evidenced by your completion of this survey. Your involvement will be greatly valued. In case of any questions, please call me on 0915536924 /Email, gunitandxo@gmail.com

Thank you once again for your cooperation!

Section A: General information

Please mark (√) your choice on the box

1. Gender? 1. Male 2. Female

2. Level of Education?

1. Certificate 2. Diploma 3. First degree 4. Second Degree and above

3. How long have you worked in EALBMSC?

1. Less than 2 years 2. 3-5 years 3. 6-10 years 4. More than 10 years

4. What is your current position in EALBMSC?

1. Warehouse manager 2. Officer 3. Team leader 4. Director/ branch managers 5. Supply chain advisor

5. How long has EALBMSC established a reverse logistics system?

1. Not yet 2. Up to 3 years 3. 4-6years 4. More than 6 years

Section B: Extent of adoption of reverse logistics practices

6. Indicate the extent to which EALBMSC has adopted the following reverse logistics practices by ticking the appropriate box using the following scale

1=Not at all, 2=Small Extent, 3=Moderate extent, 4= large extent 5 =Very large extent

Reverse logistics practices	1	2	3	4	5
Redistribution (R)					
R1. EALBMSC has a well-documented policy and procedure for the redistribution of overstocked/slow-moving and near-expiry pharmaceutical products					
R.2. EALBMSC redistributes overstocked pharmaceutical products between EPSS hubs					
R3. EALBMSC redistributes slow-moving pharmaceutical products between EPSS hubs					
R4. EALBMSC redistributes near-expiry pharmaceutical products between EPSS hubs					
R5. EALBMSC do report on how much cost saved/revenue generated by doing redistribution.					
.					
Recall (RA)					
RA1. EALBMSC has a well-documented policy and procedure to recall pharmaceutical products that have safety issues or defects.					
RA2. EALBMSC recalls pharmaceuticals with safety issues or defects detected by the authorized body (EFDA) or manufacturers on time.					
RA3. EALBMSC hubs/head office return recalled pharmaceutical items with safety issues or defects to the respective suppliers, and manufacturer.					
RA4. EALBMSC hubs/head office has received reimbursement for the reversed product in kind/ cash (only for recalled products)					
Recycling (RC)					
RC1. EALBMSC has a well-documented policy and procedure to recycle packaging paper (cartoons), pallets, containers, metals, glass, and plastics					

RC2. EALBMSC recycles or transfer to other parties' the recyclable packaging materials like cartoons, pallets, containers, metals, glass, and plastics to be recycled.					
RC3. EALBMSC do a Report on how much cost saved/revenue generated by recycling.					
Disposal (D)					
D1. EALBMSC uses standardized guild lines and SOPs for disposing of unusable pharmaceuticals.					
D2. EALBMSC uses appropriate technology and equipment for the disposal of unusable pharmaceuticals.					
D3. EALBMSC uses the Sewer method for the disposal of unusable pharmaceuticals.					
D4. EALBMSC uses the Incineration method for the disposal of unusable pharmaceuticals.					
D5. EALBMSC uses the landfill method for the disposal of unusable pharmaceuticals.					

Section C: Relationship between reverse logistics practices and EALBMSC sustainable supply chain performance.

7. To what extent has EALBMSC experienced the following financial performance outcomes because of adopting reverse logistics practices? Tick the appropriate box by using the following scale:

1= Not at all 2= Small extent 3= Moderate extent 4=Large extent 5= Very large extent

Economic performance measures (F)	**1**	**2**	**3**	**4**	**5**
F1. The gross profit margin of EALBMSC increased Because of adopting reverse logistics practices.					
F2. Return on Investment increased because of Adopting reverse logistics practices in EALBMSC.					

F3. The market share growth of EALBMSC increased Because of adopting reverse logistics practices.					
F4. Sales volume growth of products by the value of EALBMSC increased because of adopting reverse logistics practices.					
F5. Sales volume growth of products by item Number of EALBMSC increased because of adopting reverse logistics practices.					

8. To what extent has, EALBMSC experienced the following environmental performance outcomes because of adopting reverse logistics practices (especially during disposal). Tick the appropriate box by using the following scale:
   1= Not at all 2= Small extent 3= Moderate extent 4=Large extent 5= Very large extent

Environmental performance measure (E)	**1**	**2**	**3**	**4**	**5**
E1. EALBMSC applies green procurement practices					
E2. EALBMSC uses environmentally friendly waste disposal methods during disposing of unusable					
E3. EALBMSC has a certificate from the international agency (ISO) for a commitment to environmental sustainability.					
E4. EALBMSC prevent environmental impact of waste products by taking measures like donating short expiry to health facilities.					
E5. EALBMSC practices greenhouse gas (CO2) emit ion control mechanisms during reverse logistics practices (mainly during disposal practice).					

9. To what extent has EALBMSC experienced the following social performance outcomes because of adopting reverse logistics practices? Tick the appropriate box by using the following scale: 1= Not at all 2= Small extent 3= Moderate extent 4=Large extent 5= Very large extent

Social performance measure (S)	1	2	3	4	5
S1. EALBMSC ensures labor equity (ensuring fair wages) for its employees during reverse logistics practice.					
S2. EALBMSC has health and safety(Improving working conditions and accident prevention) measures during reverse logistics operation					
S3. EALBMSC is responsive to the complaints of end Users and has customer complaint handling system.					
S4. EALBMSC have Philanthropy (Charity and donation events) programs					

Section D: Challenges of implementing reverse logistics

10. To what extent are the following challenges experienced in your firm when implementing reverse logistics? Indicate your answer by ticking the appropriate box using the following scale.

1=Not at all 2=Small Extent, 3=Moderate extent, 4= large extent, 5=Very large extent

Challenges (C)	1	2	3	4	5
C1. lack of appropriate technology is a challenge in implementing reverse logistics practices in EALBMSC					

C2. lack of appropriate infrastructure is a challenge in implementing reverse logistics practices in EALBMSC					
C3. lack of definite rules and regulations on handling returned products is a challenge in implementing reverse logistics practices in EALBMSC					
C4. Retailer/supplier, manufacturer conflict i.e. on condition of item or value on return or timeliness of response is a challenge in implementing reverse logistics practices in EALBMSC					
C5. Reverse logistics operating cost is a challenge in implementing reverse logistics practices in EALBMSC					
C6. Lack of top management commitment is a challenge in implementing reverse logistics practices in EALBMSC					

Section E: opportunities for implementing reverse logistics

11. What opportunities do you think the future holds for EALBMSC to improve and adopt ~~reverse logistics practices?~~ ----------

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Thank you