RELATIONSHIP BETWEEN REVERSE LOGISTICS PRACTICES AND ORGANIZATIONAL PERFORMANCE

(The Case of East Africa Bottling Share Company)

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A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Fulfillment of the Requirements for the Degree of Masters of Arts in Logistics and Supply Chain Management

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STATEMENT OF CERTIFICATIONS

This is to certify that Betelhem Guta Degefa has carried out his thesis work on the topic entitled Reverse Logistics Practices and Organizational Performance (the case of East Africa Bottling Share Company).The work is original in nature and is suitable for submission for the award of Master's Degree in Logistics and Supply Chain Management.

Advisor: Fesseha Afework (Ass. Pro)

Date: ----------

STATEMENT OF DECLARATION

I, the undersigned, declare that this thesis is my own original work and has not been presented in any other University. All sources of materials used for this thesis have been duly acknowledged.

Declared by

Name: Betelhem Guta Degefa

Signature: _____

Date: June, 2016

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Betelhem Guta

LIST OF TABLES

ABBREVIATION AND ACRONYMS

CSCM	Council of Supply Chain Management
GSCM	Green Supply Chain Management
EABSC	East Africa Bottling Share Company
ISO	International Organization for Standardization
IT	Information technology
NEMA	National Environment Management Authority
RBV	Resource based view
RL	Reverse Logistics
RONA	Return on Net Assets
SCM	Supply Chain Management

ABSTRACT

Reverse logistics is an important process that is often misunderstood. Many organizations do not understand what processes and procedures to follow and how to manage reverse logistics efficiently. Though studies have shown the positive impacts of adoption of various reverse logistics practices, the researcher found no research works that specifically shown how adoption of reverse logistics practices could impact on organizational performance in the case of firms in Ethiopian. The objectives of this study were to determine the extent to which EABSC has adopted reverse logistics practices and investigate the relationship between reverse logistics practices and organizational performance. A descriptive cross-sectional survey study was used to provide empirical data to help address the existing research gap. The study sample consisted of 111 employees selected through stratified random sampling. The respondents answered questionnaire items adopted from previous researchers. The inferential relationship was imputed using Pearson correlation analysis. The findings showed that EABSC has adopted reverse logistic practices to appreciable levels. Specifically, it was seen that reuse and recycle reverse logistics practice were found strongly correlated with organizational performance and both reuse & recycle have strong positive correlation with financial and market performance. It is therefore recommended that management of EABSC should look at reverse logistics practice as a strategic method that can be used to achieve organizational performance. Similarly, EABSC should consider outsourcing their reverse logistics function, if they lack the necessary expertise or knowledge.

Key Words: Reverse Logistics, Organizational Performance.

CONTENTS

CHAPTER ONE
INTRODUCTION

1.1 CONTEXT OF THE STUDY

The reason for conducting this study is that Reverse Logistics is a relatively new unrecognized field, especially in Ethiopia, and only few organizations really understand the benefit and importance of reverse logistics. This study intends to look at the relationship between reverse logistics practice and organizational performance in East Africa Bottling Share Company, Addis Ababa.

The company is selected because it is one of the leading soft drink manufacturing company which play a vital role in economic, social and environmental development of the country. A soft drink is a cold beverage, usually sweet drink, which does not contain alcohol.

East Africa Bottling Share Company as a Coca Cola Franchise Bottler in Ethiopia under Coca Cola South Africa Bottling Company (CCSABCO) has two production plants in Addis Ababa and Dire Dawa with an aggressive expansion plan throughout the country. Coca-Cola was first bottled in Ethiopia's capital, Addis Ababa, in 1959 by the Ethiopian Bottling Share Company, which later opened a second branch in Dire Dawa in 1965. The company has the mission to continually increase profitability, sustainable unit case sales of its products by satisfying consumers through excellent market execution and utilizing a wide range of distribution methods. In this situation its forward supply chain commitment has a high share in the success of the organization, which also require effective reverse logistics implementation aiming at enhancing organizational performance.

1.2 BACKGROUND OF THE STUDY

Reverse logistics sometimes referred to as "product take-back" is one of the concepts in the wider concept of Green Supply Chain Management (GSCM) that is seen as a possible solution to this. The disposal of products is no longer a responsibility undertaken solely by its consumers. This is mainly due to a number of legislative, environmental, and economic reasons. Stringent packaging and environmental regulations are driving companies to be more accountable for residual products and also the final products, even after product sale. When firms investigate the re-manufacturability, reusability, and recyclability of their products then there will be fewer disposals. Fewer disposed products can benefit companies and the environment (Rogers &Tibben-Lembke, 2001). Conceptually, reverse logistics can promote alternate uses of resources that can be cost effective and ecologically friendly by extending products' normal life cycles (Melbin, 1995).

Organizations give importance to reverse logistics aspect mainly due to three reasons (Srivastava & Srivastava, 2006) the growing importance of environmental issues and their impact on public opinion (De Brito, Dekker & Flapper 2005), the benefits that the company gains by improving their return processes such as image enhancement, improved market share, it allows getting new profits (Stokes & Clegg, 2002; De Brito et al., 2005) and the new and growing environmental regulations (Stokes & Clegg, 2002; De Brito et al., 2005).

Internationally, for instance, the International Standards Organization (ISO) has come up with a set of standards and regulations that are applicable globally as far as environmental management is concerned (Hazen et al., 2011).

At national level, the governments have also come up with various regulatory measures to ensure business activities are sustainable and all business operations

are friendly to the environment. In almost every country today, there is an Act of Parliament on environmental management and a body concerned with environment.

At organizational levels, a part from adopting the international and national standards and strategies in ensuring sustainability and environmental conservation, most organizations have developed organizational standards and strategies to take care of such interests (Global Environmental Management Services, 2015).

Reverse logistics is a process where a manufacturer accepts previously shipped products from the point of consumption for possible recycling and recovery (Fortes, 2009). It is the process of retrieving the product from the end consumer for the purposes of capturing value or proper disposal.

Reverse logistics has gained popularity in the recent past due to the perceived benefits attached to it. Such benefits include; enhanced economic performance, reduced environmental degradation, improved social performance and improved operational performance.

Generally, there are many reasons and benefits to organizations for implementing reverse logistics practices. There is also lack of research and effort concerning reverse logistic practice in Ethiopia. Therefore, this study intends to look at the relationship between reverse logistics practice and organizational performance in East Africa Bottling Share Company, Addis Ababa.

1.3 STATEMENT OF THE PROBLEM

Traditionally, organizations have focused on improving their forward logistics activities; most have not treated the reverse logistics process with the same care and diligence afforded to traditional areas of logistics. (Azevendo, 2011) indicated that most manufacturing firms often focus on forward logistics and as a result, they tend to overlook the importance of reverse logistic activities and its potential of improving the firm's and supply chain's performance.

Reverse logistics can cause considerable cost but also provides numerous opportunities and can therefore be regarded as a key element and part of the supply chain, even though it is often hidden (Horowitz, 2010). There are major barriers and obstacles, which make it difficult to manage reverse logistics efficiently and proactively (Ravi & Shankar, 2005; Zheng, et al., 2005). Therefore many organizations ignore reverse logistics functions and regard them as a nuisance (Greve et al., 2010). The reason for such problem is lack of top management awareness and commitment to reverse logistics (Azevendo, 2011). The findings of this study will act as a guide for the management in manufacturing firms in understanding the role that reverse logistics plays in their organization's performance.

Empirical evidence adduced shows that researchers such as Eltayeb et al. (2011), Rao and Holt (2005), De Giovanni and Vinzi (2012), Green et al. (2011) and Azevedo et al. (2011) have attempted to link adoption of reverse logistics practices to organizational performance. According to their research findings, Rao and Holt (2005) showed that there exists a positive relationship between reverse logistics practices and organizational performance, De Giovanni and Vinzi (2012) established that the existing relationship was not significant while Azevedo et al.

(2011) found a combination of positive relationship as well as other relationships. Ongombe (2012) studied the relationship between reverse logistics and the competitive advantage it has on an organization with specific focus being on the water bottling companies in Nairobi. The results of his research study showed that there is indeed a positive relationship between the two variables. Thus, globally, evidence from the literature show a lack of consensus on the impact of reverse logistics on organizational performance.

In our context (Ethiopia), very few studies have been conducted to study reverse logistics practice particularly the relationship between reverse logistics adoption and organizational performance. The researcher found no studies undertaken to study reverse logistics and its problems of implementation in the case of EABSC. It was therefore evident that there existed knowledge gap that needs to be filled through research. This study sought to help bridge this gap by determining the relationship between reverse logistics practice and organizational performance.

Based on different literatures, the problem is that organizations do not know how to manage reverse logistics processes effectively and efficiently and its role on their organization performance. In light of this, the researcher is interested to investigate the relationship between reverse logistics adoption and organizational performance and also identify the various problems of its implementation in the case of EABSC.

1.4 RESEARCH QUESTIONS

1. What is the extent of East Africa Bottling Share Company reverse logistics implementation?
2. What are the various problems of reverse logistics implementation in East Africa Bottling Share Company?
3. What is the relationship between reverse logistic practice and organizational performance?

1.5 RESEARCH OBJECTIVES

The general objective of this study is to determine the relationship between reverse logistics practice and organizational performance**.**

1.5.1 SPECIFIC OBJECTIVE

The specific objectives for this study were to:

1. To describe the extent to which East Africa Bottling Share Company has implemented reverse logistics.
2. To identify problems of reverse logistics implementation in East Africa Bottling Share Company.
3. To investigate the relationship between reverse logistics practice and organizational performance in East Africa Bottling Share Company.

1.6 SIGNIFICANCE OF THE STUDY

The findings of this study will help management in manufacturing firms in understanding the role that reverse logistics plays in their organization's performance. They will need to learn and understand the environmental standards and regulations that govern their industry.

Academicians will use the findings of this study as a preamble for further research studies in the field of reverse logistics. It will act as basis from which future researchers can draw ideas. It will form a source of understanding of the extent to which reverse logistics has been adopted in developing countries.

Other beneficiaries to the research findings are government bodies in their decision making process with regard to enforcing legislature that promotes adoption of reverse logistics in manufacturing industries.

1.7 DELIMITATION OF THE STUDY

- The geographical scope of the study focused in East Africa Bottling Share Company, Addis Ababa branch. This is because the company is huge, older and active international manufacturing company which makes more relevant context to study the application of reverse logistics and its relation with organizational performance. Other researchers can touch another industry.
- This study focused on reverse logistics and not on forward supply chain practices or processes. The reason for this is that forward logistics has different characteristics from those of reverse logistics in terms of

complexity, costs, physical distribution and cash flow (Efendigil, Önüt & Kongar, 2008).

1.8 LIMITATION OF THE RESEARCH

- This study is believed to have certain constraint. Primarily, it is worth keeping in mind that the sample of the study was limited to one organization which may not represent the whole industry case. There should be caution taken when making generalization of the study.
- Searching for organizations that specialize in reverse logistics or provide it as service in the city was also challenging. The researcher found only a limited number of organizations in Addis Ababa that specialize in reverse logistics, which explains few reverse logistics activities under implementation. Shortage of related research works on the topic was another impending of this study.

1.9 ORGANIZATIONS OF THE PAPER

The research paper consists of five chapters. The first chapter is the introductions chapter and contains statement of the problems, research questions, objective of the study, significance of the study and delimitation of the study. Literature reviews were presented in chapter two. The third chapter dealt with the methodology used in the research activity. Data analysis and interpretation of the research results were discussed in chapter four. The final chapter covered the discussion of result, conclusions and recommendations. In addition other sections, namely, list of references and annexes are also parts of the research framework.

CHAPTER TWO
LITERATURE REVIEW

2. INTRODUCTION

This chapter reviews literature related to the study under the following sub titles: Theoretical review, definition of reverse logistics, importance of reverse logistics, reverse logistics practices, reverse logistics problems and challenges, organizational performance, reverse logistics and organizational performance and empirical review.

2.1 THEORETICAL FOUNDATION OF THE STUDY

This study is anchored on three organizational theories that have been used to understand how companies adopt and develop reverse logistics practices. The three theories are the stakeholder theory, the Resource based view and the institutional theory.

2.1.1 STAKEHOLDER THEORY

The stakeholder theory argues that the organization has relationships with many constituent groups and that it can engender and maintain the support of these groups by considering and balancing their relevant interests (Clarkson, 1998). As it has been noted by many, the theory fosters both instrumental predictions and normative prescriptions. This has therefore proven to be a subject of interest with those interested in profits as well as those interested in issues of ethics. Stakeholder

theory is a theory that looks at the relationships between an organization and its internal and external environment, how these relationships affect the organization's mode of conducting its activities. Examples of stakeholders of a business include suppliers, customers, stockholders, employees, government, non-profit community organizations, and the local community among others. Increasingly, concerned citizens world-wide have reacted to threats of environmental depletion and urged both government and businesses to respond to these issues. This has led to increased demand for 'green' products and calls for more stringent regulations on environmental pollution.

2.1.2 RESOURCE BASED VIEW

Resource-based view has been developed in work by Barney (1986), for analyzing firm behavior and competitive strategy. The RBV contends that the idiosyncratic resources and capabilities of firms are the key sources of sustained competitive advantage (Lynch, Keller &Ozment 2000). This premise appears to be supported by logistics and SCM research (such as Lynch et al., 2000). According to Barney (1986) resources can be classified into organizational capital resources, physical capital resources and human capital resources. Capabilities can be defined as the skills a firm needs to take full advantage of its assets.

Capabilities are complex bundles of individual skills, assets and accumulated knowledge exercised through organizational processes that enable firms to co-ordinate activities and make use of their resources (Olavarrieta & Ellinger, 1997). Tibben-Lembke (2002) describes the three generic strategies for competing in the marketplace as low-cost leadership, differentiation and focus. One avenue of

creating a competitive advantage with differentiation is through building a brand reputation (Grant, 1991).

An organization may choose to focus on implementing reverse logistics practices to expose the negative environmental performance of its competitors. In this way, the organization can cut a niche for its products. Developing and implementing reverse logistics practices can only be achieved through creating environmentally responsible policies and investing in the necessary equipment and training. Creating a competitive advantage through implementing reverse logistics practices would lead to improved market share and consequently higher profit margins (Fortes, 2009).

2.1.3 INSTITUTIONAL THEORY

The institutional theory is concerned with the processes by which structures, routines, rules and norms become established as the guidelines for acceptable behaviour. Organizations act in a way that fulfils both customer and legal requirement. Pressures from these two parties influence the adoption of environmentally responsible behavior (Laosirihongthong T., Adebanjo, D., & Tan, K. C. 2013). Organizations have institutionalized reverse logistics practices because of internal and external pressures. As Carter, Smeltzer & Narasimhan, (2000) observed, companies institutionalize reverse logistics practices due to fear of loss of their market share to competitors and also awareness of the consequences of noncompliance with environmental imperatives (Carter, J. R., Smeltzer, L. R., &Narasimhan, R. 2000). This is over and above growing demand of customers and environmental societies for more environmentally friendly products. These challenges and pressures push firms to seriously considering environmental impacts while doing their business. Managerial decisions to adopt environmental

management initiatives maybe influenced by three institutional mechanisms: normative, coercive and mimetic. Due to normative pressures, such as customer requirements, organizations are forced to conform to be perceived as more legitimate (Zhu &Sarkis, 2004). Several external stakeholders can also impose coercive pressures on companies, depending on their power. Government bodies may for instance affect the adoption of environmental practices by firms by means of stringent environmental regulation (Delmas, 2002). Managers may also institute environmental practices as a strategy to mimic and outperform competition whose environmental responsibility has earned them a competitive edge.

2.2 DEFINITIONS OF REVERSE LOGISTICS

There are many different definitions of the concept, because reverse logistics, despite an apparent lack of interest in and awareness of it, is one of the fastest developing fields in business logistics, which results in constant changes in scope and significance (Vogt, Pienaar& De Wit, 2002:234).

Reverse logistics is essentially the opposite of logistics. The Council of Supply Chain Management Professionals (CSCMP, 2010:144) defines logistics as the "process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including service, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements". Reverse logistics, however, can be defined as a "specialized segment of logistics focusing on the movement and management of products and resources after the sale and after delivery to the customer". It also "includes product returns for repair and/or credit". Furthermore, reverse logistics is a process that enables organizations to become more environmentally capable

through recycling, reusing and reducing the amount of materials used (CSCMP, 2010:151).

Reverse logistics can be defined as the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal (Roger's and Tibben-Lembke, 1998).

According to Steven (2004) reverse logistics comprises all activities involved in managing, processing, reducing and disposing of hazardous or nonhazardous waste from the production, packaging and use of products, including the process of redistribution.

Reverse logistics is the physical movement of goods formed by repairing and returning substandard goods as well as turnover containers returned to supply side from demand side. This involves the item entities' reverse flow process such as reclaiming pallets and containers used to transport, receiving the customer returns, collecting containers, raw materials, scrap and spare parts processing defects in the product sales (Zhang, 2010).

Consequently, reverse logistics can be viewed in a narrow or a broad sense. In a narrow sense, it is the recovery process for right products, parts or material as a result of environmental problems or obsolete products. In a broad sense, it also includes the contents of waste logistics. The ultimate goal is reducing resource use in such a way that waste is reduced too, and recycling logistics is more efficient at the same time (Zhang, 2010).

2.3 IMPORTANCE OF REVERSE LOGISTICS

Reverse logistics has become significant because organizations are under increasing pressure from many stakeholder groups, including shareholders, customers, employees, suppliers, reverse supply chain partners, government agencies, nonprofit organizations and the (public) environment (Vachon & Klassen 2006) owing to environmental issues, legislation and consumer expectations. This section focuses on the importance of reverse logistics by discussing the different drivers of reverse logistics, followed by the benefits that reverse logistics has to offer organizations and their stakeholders.

2.3.1 DRIVERS OF REVERSE LOGISTICS

Organizations generally become involved in reverse logistics because they can profit from it or they do not have a choice because of environmental legislation and laws, or they feel socially impelled (De Brito, 2004). Evolving financial, competitive and customer pressures as well as increasingly complex environmental regulations compel organizations to engage in reverse logistics processes (Partida, 2011:62).

The drivers of reverse logistics can be divided into three different categories, including (1) economic drivers, (2) corporate citizenship and consumer expectations and (3) environmental issues and legislations.

2.3.1.1 ECONOMIC DRIVERS

Economic drivers concern profits and relate to all recovery actions where the company has direct or indirect economic gains (Wang, P., Zhou, G. & Ren, and J. 2010). A reverse logistics programme can generate direct gains for organizations by reducing the use of raw materials, by adding value with recovery and by reducing disposal costs. Even with no clear or immediate expected profit, an organization can be more involved in reverse logistics because of competition and/or strategy drivers, marketing or customer-related drivers, from which indirect gains are expected (De Brito, 2003, De Brito & Dekker, 2003, Wang et al., 2010).

In today's globalized and fast-paced economy, competition is driving companies to address the importance and impact of reverse logistics processes on an organization's performance. In terms of strategic drivers, organizations may become involved in reverse logistics in order to prepare for or even avoid future legislation (De Brito, 2004). Regarding marketing-related drivers, an organization may engage in reverse logistics in order to prevent other organizations from entering the market (Dijhuizen in De Brito, 2004). In terms of customer-related drivers, an organization may gain indirectly by establishing a positive environmental image with the customer (Wang et al., 2010).

The direct gains may thus include the input materials, cost reduction and value-added recovery. However, indirect gains may include impending legislation, market protection, green image and improved customer-supplier relations (De Brito & Dekker, 2003).

2.3.1.2 CORPORATE CITIZENSHIP AND CONSUMER EXPECTATIONS

Another significant driver of reverse logistics is extended responsibility or corporate citizenship which compels organizations to become active in accepting returns. In other words, extended responsibility/corporate citizenship is a set of values or principles that drives an organization to become responsibly engaged in reverse logistics (Bernon, Cullen & Rowat, 2004).

Organizations deciding to establish a reverse logistics structure are motivated first and foremost by the desire to respond to consumer expectations (BearingPoint, 2008). This outcome is not surprising. Customers are the driving force behind any organization. Without the customer, the organization has no purpose or need to exist. The customer is the driver of the demand on the organization, which means that the organization must be able to adapt to the needs of the customer, especially if the organization wants to remain competitive (Huscroft, 2010:36).

2.3.1.3 ENVIRONMENTAL ISSUES AND LEGISLATION

Accelerating environmental concern, which has already resulted in legislation, and financial interest in reverse logistics, have both contributed to the popularity of reverse logistics. Organizations face increasing pressure to take responsibility for their environmental performance (Kussing & Pienaar, 2009:431) because society's stance towards environmental issues has been changing, and factors such as legislative initiatives, increasing awareness from customers, and organizations' perception on new business opportunities, are the reasons why organizations pay more attention to reverse logistics (Salema, Póvoa & Novais, 2006:615).

The environmental implications of reclamation, reuse and recycling to save landfill space, energy, and costs are vital for organizations (Sarkis et al., 2010). The practices relating to environmental issuesand performance may include activities such as preventing pollution, recycling, extracting resources and proper disposal (Vachon & Klassen, 2006). The green image has stimulated a number of organizations to explore options for take-back and recovery of their products. In addition, reverse logistics is growing in importance because governmental regulations and legislation are compelling organizations to take back their products (Sarkis et al., 2010).

2.3.2 BENEFITS OF EFFECTIVE REVERSE LOGISTICS

Effective reverse logistics operations benefit both the organization and its customers (Amini, Retzlaff-Roberts & Bienstock, 2005). The benefits of reverse logistics, which are closely related to the drivers of reverse logistics, can also emphasize the significance of reverse logistics. If managed in the right way there are multiple benefits, beyond meeting legislation, to be realized by tackling reverse logistics (Butler, 2004). This section deals with the benefits of reverse logistics, in terms of cost reductions resulting from effective reverse logisticsmanagement, waste and environmental cost reductions and customer satisfaction and competitive advantages.

2.3.2.1 COST REDUCTIONS DUE TO EFFECTIVE REVERSE LOGISTICS MANAGEMENT

If the reverse logistics process is managed correctly, it can minimize logistics costs and improve revenue (Bernon, Rossi & Cullen, 2011). Hence effective reverse logistics management can add significantly to an organization's profitability (Mollenkopf& Weathersby, 2003). If adequate resources (tangible/intangible or property-based/ knowledge-based) are targeted to reverse logistics programmes, this can have tremendous positive financial impact (Genchev, Landry, Daugherty &Roath, 2010).

Organizations have discovered that the effective management of reverse logistics can result in reductions of inventory carrying costs, transportation costs and waste disposal costs (Lu et al., 2007, Gupta & Tiwari, 2009). Effective reverse logistics practices will also significantly reduce costs relating to a product before the product is purchased, at the time of the purchase and after the purchase (Tibben-Lembke, 1998). From a logistics perspective, returned products that are handled efficiently can be reinserted into the forward supply chain, which cangenerate additional revenue, reduce operating cost and minimize the opportunity costs of writing off defective or obsolete products (Mollenkopf & Closs, 2005).

2.3.2.2 WASTE AND ENVIRONMENTAL COST REDUCTIONS

Reverse logistics by definition includes processes such as remanufacturing, refurbishment, recycling, reuse and asset recovery. Engaging in reverse logistics activities organizations can therefore reach a certain level of green. In other words, organizations can be more environmentally responsible (Patridge, 2011). Reverse logistics is inherently green and all elements of reverse logistics have green

implications and bring huge benefits to the environment (Robe in Patridge, 2011:18).

The benefit of green reverse logistics is tangible, and many organizations are becoming aware that being green means being more profitable too (Robe in Patridge, 2011:18). With the increase in costs emanating from practices that seek to minimize the impacts on natural resources, reverse logistics can become a production procedure that will minimize environmental impacts at lower costs (Flávia, Bernardi, Da Rocha & Camargo, 2010). Reverse logistics can help the organization to be more cost effective and ecologically friendly by extending a product's normal life cycle beyond traditional usage (Melbin in Dowlatshahi, 2000:144). In addition, reverse logistics can reduce costs by reusing products, components and materials instead of simply disposing of them in landfills which has a negative impact on the environment (Yimsiri, 2009:1).

2.3.2.3 CUSTOMER SATISFACTION AND COMPETITIVE ADVANTAGES

Reverse logistics can be leveraged as a tool for customer satisfaction (Sople, 2007) and can afford an organization an opportunity to capture valuable data to help future manufacturing, packaging and marketing decisions where the organization can proactively take steps to increase customer satisfaction by analyzing the reasons why customers return products (Kim, 2001). It allows organizations to differentiate themselves in the eyes of the customers. High-quality reverse logistics can promote long-term relationships where customers are more likely to repurchase if the organization does a good job handling returns (Daugherty, Myers & Richey, 2002; Genchev et al., 2010).

Many organizations use their reverse logistics capabilities as market differentiators (Pollock, 2007:13–14). Reverse logistics is a vital tool for supporting marketing and brand initiatives in an age where good corporate citizenship has become more important to consumers (Butler, 2004:1). With reverse logistics processes, organizations can enhance customers' perceptions of product quality, help minimize the purchase risk and boost goodwill (Mollenkopf&Closs, 2005). Ultimately, an effective reverse logistics process can give an organization the necessary competitive advantage to move above peers and competitors, and possibly capture larger market share in the industry (Huscroft, 2010).

2.4 REVERSE LOGISTICS PRACTICES

Reverse logistics is the term commonly used to describe end of life product management. This means that reverse logistics is mainly concerned with return or take-back products and materials from the point of consumption to the forward supply chain for the purpose of recycling, reuse, remanufacture, repair, refurbishing or safe disposal (Carter & Ellram, 1998). Reverse logistics focuses on getting product back from customers rather than moving products to customers. Broadly defined, reverse logistics includes shipments of packaging waste, recyclable packages and customer returns in the logistics system. It is also important to note that reverse logistics emphasizes source reduction and substitution over reuse and recycling (Wu & Dunn, 1995). This refers to doing the same things with less resources hence eliminating waste. There are three broad concepts on which reverse logistics is based and these are reuse, remanufacturing and recycling (Eltayeb et al., 2011). The focus of this study will be on the two concepts (reuse and recycling). The company under consideration (EABSC) adopted these two reverse logistics components.

This research endeavored to find out the extent to which these practices (reuse and recycling) have been adopted by East Africa Bottling Share Company and their relationship with organizational performance.

2.4.1 REUSE REVERSE LOGISTICS PRACTICES

Reuse is the process of collecting completely unused or slightly used products from the consumer and injecting them back into the supply chain without any upgrade or processing (Eltayeb et al., 2011).

According to Amemba (2013), reuse strategy is one of strategies of waste management that is believed to be most environmentally friendly. Hazen et al. (2011) defines reuse as the process of recovering any piece of returned product that may have some value. Reuse of materials occurs in cases where the customers return unused products to the point of purchase thereby returning the product back into the supply chain. Reuse of materials may also occur through reutilization of packaging or shipping materials. According to Hazen et al. (2011) customers return products that are either completely unused or that are partly used. For partly used products to be reused, the products should be in a position to be used without any upgrade or modification. Products that are not in the usable state must be channeled back to the manufacturers through reverse logistics either for repair or re-development.

Reuse simply means that the product can be used again for a purpose similar to the one for which it was designed (Rogers &Tibben-Lembke, 1998). Reuse also involves repairing, refurbishing, washing or recovering used products. Packaging can also be reused which can prolong the item's useful life and delay final disposal or recycling.

Practices under reuse include return of used products and packaging to suppliers for reuse, setting of quality standards for reuse, generating energy from renewable sources of energy and designing products for reuse (Rao & Holt, 2005).This study examines the extent to which the above reuse reverse logistics practices have been put into use by firm.

2.4.2 RECYCLING REVERSE LOGISTICS PRACTICES

Recycling is the process of recovering any piece of a returned product that may contain value. In recycling, collected used products are disassembled and useful material extracted from them. The identity and functionality of the original material is lost (Eltayeb et al., 2011).

Practices under recycling include return of used products and packaging to suppliers for recycling, executing well-structured market incentives and having a well-documented recycling policy. Another practice under recycling includes the sensitization or creation of awareness to the buyer. Organizations may create awareness by putting the recycling labels of three arrows intertwining clockwise as a sign that the product or package should be recycled (Laosirihongthong et al., 2013).

Recycling involves the reduction of products to their basic elements which are then reused (Rogers &Tibben-Lembke, 1998). Recycling is the "process of collecting used products, components, and/or materials from the field, disassemble them, separating them into categories of like materials, and processing into recycled products, components, and/or materials" (Beamon, 1999). Another description of recycling is "the process by which materials that would otherwise become waste are collected, separated or processed are returned to the economic mainstream to

be reused in the form of raw materials or finished goods" (Global Recycling Network, 2008). Organizations can recycle when the product is broken down and "mined" for components that can be reused or resold (Ji, 2008:53).

2.5 PROBLEMS IN REVERSE LOGISTICS

Many factors influence the implementation of effective reverse logistics and these pose challenges for many organizations and supply chains. There are numerous barriers that make it difficult to have efficient and effective reverse logistics processes in place (Ravi & Shankar, 2005).

The problems and challenges that organizations may encounter in reverse logistics are discussed in terms of the costs associated with reverse logistics, lack of appropriate information systems for reverse logistics, problems with product returns, human and management-related problems, problems between reverse supply chain partners and reverse logistics problems relating to customers.

2.5.1COSTS ASSOCIATED WITH REVERSE LOGISTICS

Reverse logistics cost is significant and on the rise. It is a challenge for an organization not only to manage forward logistics in order to minimize waste and maximize customer satisfaction, but also to pay considerable attention to reverse logistics (Carter & Ellram, 1998). The costs associated with reverse logistics can be quite complicated owing to all the details involved (Lee, McShane & Kozlowski, 2002).

Most organizations are not aware of the current costs associated with reverse logistics because processes may be poorly defined and the systems may lack the necessary support (Moore, 2006). The hidden costs of reverse logistics can be severely underestimated. The challenge for organizations is to determine how

much the existing processes are costing them, especially when they have not disbursed the resources in order to determine what the true costs are (Schwartz, 2000).

2.5.2 LACK OF APPROPRIATE INFORMATION SYSTEMS FOR REVERSE LOGISTICS

The application of information technology is the principal link in the reverse logistics system (Zheng et al., 2005). The complexity of a reverse logistics programme means that information support is absolutely critical. However, Richey, Chen, Genchev and Daugherty (2005) have found that traditional information systems are designed for forward logistics only and not reverse logistics.

One of the most serious problems that organizations have to face in executing reverse logistics is having an effective information system in place (Zheng et al., 2005). A lack of information and technological systems can be an extremely serious problem in terms of reverse logistics implementation (Ravi & Shankar, 2005). Developing technology tools that work in reverse logistics is especially complicated because of a lack of standardization in the reverse logistics processes (Richardson, 2006). Many logistics systems are not well prepared to deal with reverse logistics and if organizations do not have volume, the entire process can be woefully inefficient (Rogers &Tibben-Lembke, 1998). The main areas of concern in information include insufficient information technology (IT) investment, the low reliability of IT solutions, lack of information visibility and misinformation. Each of these problem areas will now be explained in greater detail.

2.5.3 PROBLEMS WITH PRODUCT RETURNS AND REVERSE LOGISTICS PROCESSES

Product returns are the most common aspect of reverse logistics (Banker, 2001:1). Returns come from different places, in different conditions, with different disposal options. Product returns are often uncertain in terms of timing, disposition, condition and the quality and quantity of returns (Jayaraman& Luo, 2007).

Return processing is highly dynamic, inconsistent and complex because it involves irregular material flows. Product returns can therefore have infrequent and erratic timing patterns (Daugherty et al., 2005). Organizations usually do not know what and how many products will be returned on a given day. The majority of product returns are unplanned and therefore unpredictable (Kussing & Pienaar, 2009). As mentioned in section 3.2.2, many organizations lack adequate information visibility. Similarly, a lack of visibility of incoming returned products makes planning for reverse logistics difficult in terms of the staff and resources needed (Barry, 2003).

Product returns are also not straightforward owing to the fact that reverse logistics involves the handling of products in small volumes (Daugherty et al., 2005). Not having enough volumes can cause the entire return process to become ineffective.

The product return process there is a lot of room for error, especially given the various stages a returned product must go through. In many organizations, return processes are poorly defined and not adequately structured, which results in the inability to stay in touch with the identity, location, status and condition of returned goods going backwards through the supply chain (Thrikutam & Kumar, 2004).

2.5.4 ORGANIZATIONAL AND MANAGEMENT-RELATED PROBLEMS

By now it should be clear that the reverse logistics process is unpredictable, which makes it difficult for organizations to plan and control it (Zeng et al., 2005). There are many human and management-related problems in the effective management of reverse logistics. These include the following: a lack of strategic planning to include reverse logistics; a shortage of executive managers for reverse logistics, a lack of top management awareness of and commitment to reverse logistics; a lack of departmental collaboration and communication and resistance to change; and the need for new approaches.

According to Stock (Harps 2003:2), only a small percentage of organizations link reverse logistics to their competitive strategy. Strategic planning is necessary in all areas of the business, including reverse logistics (Ravi & Shankar, 2005). The problems and difficulties associated with the planning, control and implementation of reverse logistics strategies and programmes can result in a many mistakes and misperceptions on the part of the organization. An executive management structure that does not include reverse logistics when considering product development or marketing strategies can expose the organization to serious pitfalls (Walker, 2010).

Top management can be a chief barrier to the successful management of reverse logistics, and if there is no commitment, this can hinder the entire process even more (Ravi & Shankar, 2005; Rogers &Tibben-Lemke, 1998). Lack of awareness in terms of the importance of reverse logistics can be one of the main barriers to the successful management of the process (Ravi & Shankar, 2005; Rogers &Tibben-Lemke, 1998). A major misconception is that returns represent failure, which results in management not wanting to devote their attention to reverse

logistics (Rogers &Tibben-Lemke, 2001). Restrictive company policies because of management inattention can also make reverse logistics difficult to implement (Ravi & Shankar, 2005). In organizations where managers do not recognize the importance of an effective reverse logistics programme, there is a risk of harming the organization's reputation and alienating customers (Daugherty, Richey, Hudgens & Autry, 2003).

Resistance to change in the organization can therefore be a problem because reverse logistics requires drastic changes in mindset and practice (Ravi & Shankar, 2005). Having a successful reverse logistics process in place requires a shift in the organization. However, many organizations' policies and structures get in the way of the change necessary for the successful implementation of reverse logistics (Ravi & Shankar, 2005).

2.5.5 PROBLEMS BETWEEN UPSTREAM REVERSE SUPPLY CHAIN PARTNERS

There are various problems in the reverse supply chain. For reverse logistics to be successful, collaboration between supply chain partners is crucial (Zeng et al., 2005). A lack of communication between partners can be a source of risk (Breen, 2006). Hence a key barrier to successful reverse logistics is the lack of support of channel members such as dealers, distributors and retailers (Ravi & Shankar, 2005). Major problems with reverse supply chain partners can therefore stem from a lack of collaboration, a lack of communication and a lack of support.

2.5.6 REVERSE LOGISTICS PROBLEMS RELATING TO CUSTOMERS

Suppliers do not always work effectively with their customers by communicating their expectations and arrangements for reverse logistics (Breen, 2006). Poorly defined return policies between the organization and the customer can create extremely lenient or complex returns that can lengthen the processing time and consume valuable resources (Tompkins, 2010). In many instances, organizations do not enforce their reverse logistics rules and allow customers to return products that should not be accepted (Breen, 2006). This can lead to abuse from the customers in the sense that they may take advantage through the level and type of returns (Daugherty et al., 2003).

Returning products to an organization can automatically carry with it a negative connotation in the customer's mind (Dampier, 2006). Perceived expectations of customers are a vital aspect of any organization, especially when a customer receives a product that does not meet a specific expectation (Riedel, 2004). This can jeopardize the organization's relationship with its customers (Riedel, 2004). Organizations that do not consider their ultimate customers' wants and needs as the driving force behind reverse logistics can cause major failures in the entire reverse logistics system (Dowlatshahi, 2005).

2.6 ORGANIZATIONAL PERFORMANCE

Organizational performance is the analysis of the actual results or output of an organization measured against its intended outputs. According to Richard, Devinney, Yip and Johnson (2009) organizational performance encompasses three

specific areas of firm outcomes: financial performance (profits, return on assets, return on investment.); product market performance (sales, market share.); and shareholder return (total shareholder return, economic value added.) A key performance indicator is a quantifiable measure a company uses to determine how well it meets the set organizational goals.

Using **Financial Indicators** in business performance measurement allows an organization to compare different business types. An organization can define its own operating objectives and use them to evaluate their performance. Some of the measures it can use include: Activity ratios evaluate how efficiently the company manages its business. The asset turnover measures how effectively the company puts its assets to work. The inventory turnover evaluates how efficiently the company manages its inventory. A higher turnover means better performance for both ratios. Value added is calculated as the difference between the operating result and the cost of capital of the average net assets. Alternatively, the value added can be determined by using the main value drivers: return on sales and net assets' Return on sales is of particular importance for assessing profitability. The combination of return on sales and net assets' productivity results in return on net assets (RONA). If RONA exceeds the cost of capital, value is created for our shareholders (Huselid, 1995).

Market Performance Indicators show how an organization's product is performing in the market. Some of the key market performance indicators employed by firms include; the status of existing customers. A well performing product would have a sizeable number of loyal customers and would keep attracting new customers as well. The waiting time for customer orders is also a good indicator of product performance in the market. Well performing products

have regular orders as has been generally observed. The length of stock-outs is another good performance indicator. A stock out is an event that causes inventory to be exhausted. This is usually an indicator of the high demand of the product.

2.7 REVERSE LOGISTICS AND ORGANIZATIONAL PERFORMANCE

Organizations give importance to reverse logistics aspect mainly due to three reasons (Srivastava & Srivastava, 2006) the growing importance of environmental issues and their impact on public opinion (De Brito, Dekker & Flapper 2005), the benefits that the company gains by improving their return processes such as image enhancement, improved market share, it allows getting new profits and the new and growing environmental regulations (Stokes & Clegg, 2002; De Brito et al., 2005).

In the world today, organizations that enact product recovery programs, greatly enhancing the image of their brand, are the leading firms in their various industries. Increasing the use of recyclable materials and becoming an industry leader in developing environmentally sustainable business practices were perceived as having the greatest positive influence. All this can be done by implementing a reverse logistics program (Laosirihongthong et al., 2013).

Many organizations the world over have been forced to adopt reverse logistics practices in order to conform to set environmental regulations. Recently however, several voluntary reverse logistics programs have been adopted by organizations in order to reduce the pressure for new or expanded legislation. Many organizations have tried to improve their own performance and others by having their industry association impose more stringent requirements on its entire membership. This is

all in a bid to avoid the consequences of non-compliance which include heavy financial penalties and / or withdrawal of licenses (Eltayeb, Zailani&Ramayan, 2011).

In this study, the effect of reverse logistics on organizational performance will be determined. The marketing and financial aspects will be assessed in view of reverse logistics.

2.8 EMPIRICAL REVIEW

Internationally, a number of studies have been done to try and establish the relationship between reverse logistics practices and organizational performance. Green et al. (2011) found out that successful implementation of GSCM practices such as green purchasing, cooperation with customers, Eco design and reverse logistics will lead to improved environmental and economic performance which support improved organizational performance. Further, their findings show that cost saving nature of reverse logistics should lead to improved economic performance and both environmental performance and economic performance should yield improved operational efficiency. These generate cost savings and reflect on an organization's ability to satisfy changing customer demands for environmentally sustainable products and services.

According to Rao and Holt (2005), green supply chains do give firms competitive advantage and also lead to increased economic performance. They observed that the image of products of firms that practiced reverse logistics in Philippines had been positively affected giving such firms a competitive advantage. Their study mainly focused on the financial outcomes of organizational performance. This is

where this study comes in to fill the gap as it will focus on both the financial as well as marketing outcomes of organizational performance.

Eltayeb et al. (2011) investigated the outcomes of green supply chain initiatives among certified companies in Malaysia and environmental sustainability. Among the four possible outcomes they investigated, which included environmental outcomes, economic outcomes, cost reductions and intangible outcomes, reverse logistics was found to have a significant positive effect on cost reductions only. This study tests the hypothesis that reverse logistics practices have a positive effect on both the financial and marketing performance of organizational performance.

According to De Giovanni and Esposito Vinzi (2012) in their study of covariance versus component-based estimations of performance in green supply chain management, they found that no significant relationship exists between green supply chain management practices and organizational performance especially economic performance.

Azevedo et al., (2011) explored the influence of green practices on supply chain performance with a focus on the automotive industry in Portugal. This study provides evidence that green practices have a positive effect on quality, customer satisfaction and efficiency. However, it also identifies that green practices are costly to implement and therefore have a negative effect on the financial performance of firms.

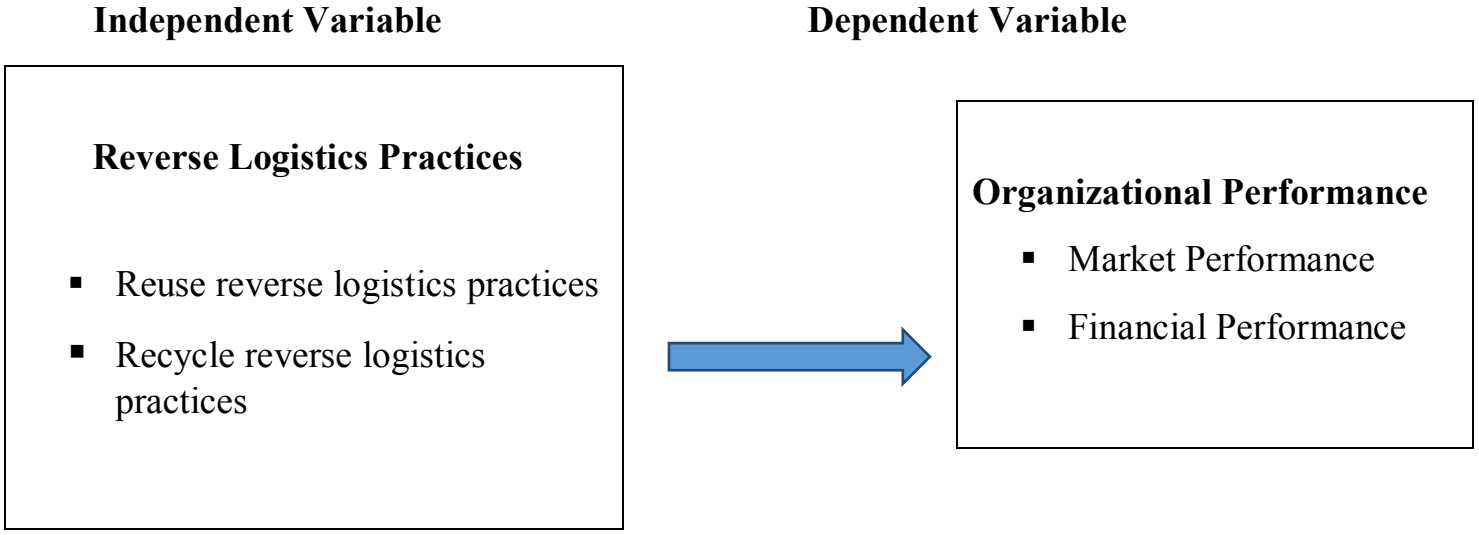
There have also been a few studies that have focused on reverse logistics in Kenya. Waithaka (2012) studied the reverse logistics practices in medical supplies by looking at the case study of Kenya Medical Supply Agency. Although his study showed that the adoption of reverse logistics practices at the Kenya Medical

Supply Agencies was low, there was a positive relationship between reverse logistics and operational performance of the agency.

Ongombe (2012) looked at the relationship between reverse logistics and competitive advantage in water bottling companies in Nairobi. This study concluded that there was indeed a strong relationship between reverse logistics and competitive advantage. Companies that implemented reverse logistics practices benefitted from increased profit margins due to reduction in production costs and increased sales.

The research which comes closest to this study was done by Serut (2013) whose main concern was on the financial aspect of organizational performance. Although his study found a positive relationship between reverse logistics and organizational performance, this study argues that reverse logistics is a broad concept and therefore should be broken down into sub components of reuse, remanufacture and recycle reverse logistics practices. The kind of data he collected was mainly concerned on the financial aspect of an organization's performance, while this study focuses on organizational performance as a whole which include marketing performance as well as financial performance.

2.9 CONCEPTUAL FRAMEWORK



Source: Conceptual theoretical framework adopted from M.Kabergey, Salome Richu (2015) and A. Eshikhati (2014).

The study intended to determine the relationship between reverse logistics practices and organizational performance in the case of EABSC. The dependent variable was organizational performance. The study sought to find out the relationship between reverse logistics practices and organizational performance and therefore reverse logistics practices were the independent variables.

Reverse logistics practices were broken down into two concepts of **reuse** and **recycle** reverse logistics practices. The dependent variable organizational performance has two components as indicators **financial performance** and **marketing performance**.

This research endeavored to find out the extent to which these two reverse logistics practices (reuse and recycling) have been adopted by East Africa Bottling Share Company and its relation with organizational performance.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Research methodology provides a means to systematically solve a research problem. This chapter explains the methodological approach adopted when conducting the research. This includes the research design, population and sampling technique, tool of data collection and method of data analysis are briefly explained.

3.1 RESEARCH DESIGN

A descriptive Cross-sectional survey design was employed in this study. Descriptive survey as described by Kothari, Sabino & Zach (2005) is a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way. Mugenda and Mugenda (1999) define survey as a strategy used to collect information from a large population by use of structured interviews, questionnaires among other methods. This research design is suitable for this study because it is an efficient way of collecting information from a selected number of respondents being targeted from a given population. Cross-sectional studies involve data collection from a population, or a selected subset, at one specific point in time (Cooper & Schindler, 2006). Cross-sectional surveys have been used in previous studies dealing with reverse logistics including Serut (2013).

3.2 POPULATION AND SAMPLING TECHNIQUE

The population elements in this study consisted all permanent employees working in all departments of East Africa Bottling Share Company. According to EABSC human resource department 2014 data, the total size of the target population for the study is 1120 (N= 1120) employees. Considering all permanent employees is considered impossible because of cost and time constraints as a result of which considering selected employees were found to be most appropriate.

The researcher used stratified random sampling technique to choose the sample respondents, this is to ensure that all employees (departments) are adequately presented in the study. Employees are randomly selected after the population has been stratified. The sample frame for this study includes permanent employees who were working in departments of logistics and procurement, sales and marketing, finance and administration, human resource department, production and top level managers only.

The sample size was selected from the population using Solvin's formula (Unan, 2012: 52).

$n=N/1+N\ (e)^2$

Where: N is population of the study

n is sample size

e is possible error term

Accordingly, with estimated error terms of 9%, it yield

$n=1120/1+1120\ (0.09)^2$

n= 111

Based on this the total sample size calculated is 111.

Table: Sample unit taken from each department

Department	**Population**	**Sample**	**Proportion**
Logistics & Procurement	298	30	0.27
Sales & marketing	221	22	0.2
Finance & Administration	78	8	0.07
Human Resource	35	3	0.03
Production	458	45	0.4
Top Level Managers	30	3	0.03
Total	1120	111	1

Source: EABSC human resource department, 2014

The number of elements selected from stratum is $n*p_n$, where n is the sample size obtained from the whole population and p_n is the proportion of population in stratum.

This research employed this technique because the elements sampled from each departments were proportional to their representation in the total population. Previous researchers on reverse logistics also have used this sample size determination in their research Serut (2013).

3.3 DATA COLLECTION INSTRUMENT

In business research, the most common method of generating primary data is the survey. A survey method involves studies that are normally quantitative and endeavor to provide a broad overview (Mouton, 2001). In other words, a survey design provides a quantitative or numerical explanation of trends, attitudes or views of a population, by studying a sample of that population (Creswell, 2009).

Data for this study was obtained from primary sources. The primary data were collected through the use of a structured questionnaire. The questionnaire was adopted from A. Eshikhati (2014) and A. Badenhorst (2013) with some modification. The data collected were qualitative in nature, a five point Likert scale was used.

The data collection method was questionnaires. Questionnaires are preferred since they are easy to analyze and save time in data collection (Oso and Onen, 2011). The questionnaires were self-administered by the researcher through drop and pick techniques. Before data collection, the researcher had obtained authorization letter from the university that is used to gain access to the company under consideration.

The questionnaire comprises of closed ended questions. It is sub divided into four sections; the first part sought general information about the employee respondent. The second part focused on the reverse logistics practices adopted by the company. The third part contained questions aimed at determining the relationship between reverse logistics practice and organizational performance and the last part focused on problems in reverse logistics implementation. (See Appendix).

A total of 111 questioners (excluding the pilot test) were distributed for EABSC employee respondents.

3.4 DATA ANALYSIS METHOD

The questionnaires were first checked for accuracy, consistency and completeness. Thereafter, the data was edited, coded, classified and tabulated for ease of interpretation and further analysis.

This researcher used both descriptive and inferential analysis. Frequencies and percentages were used to analyze background data on employees, mean and standard deviation were used to achieve the first and the second objectives of the research while correlation analysis was used to determine the relationship between the independent variable (reverse logistics practice) and dependent variable (organizational performance). The findings of this study were presented using tables. Every table were be accompanied by result interpretation.

3.5 RELIABILITY AND VALIDITY OF THE RESEARCH

Reliability is the consistency of a set measurements or measuring instrument, often used to describe a test. Reliability is inversely proportional to a random error (Pellissier, 2007). There are several different reliability coefficients. One of the most commonly used is called Cronbach's Alpha. Cronbach's Alpha is based on the average correlation of items within a test if the items are standardized. Cronbach's Alpha reliability analysis was conducted in order to determine the reliability of the instrument used. Lack of reliability is a serious drawback of an outcome measure as it indicates errors in measurements (Pellissier, 2007).

To test the validity and reliability of the research instruments, a pilot test was conducted. According to Mugenda and Mugenda (2003), the number involved in the pilot test should not be large. A pretest sample of between 1% and 10 % is

good depending on the sample size. In this study, a total of 10 questionnaires were distributed using systematic random sampling and collected afterwards for analysis. Based on pilot test results some modifications were made with the questionnaires to increase understandability which increase response rate.

The questionnaires were coded in SPSS version 21 and Crocbach was computed and compared with the threshold value of 0.7 an overall value of 0.909 was obtained which implied that the research instruments were reliable.

Table 3.1 Cronbach's Alpha statistics for the survey questioner

Reliability statistics for the survey questioner		
Measures	**Cronbach's Alpha value**	**No. of items**
Reverse logistics practice	.836	8
Organizational performance	.856	6
Problems in reverse logistics practice	.892	25
All measurement items	.909	39

Source: Survey result

As indicated in table 3.1 above the Cronbach's Alpha test reveals that the instrument's internal consistency as 91% which is well above the acceptable value (i.e 70%). Therefore, the research instrument is reliable and the forthcoming findings & conclusions are acceptable.

Validity is concerned with whether the findings are really about what they appear to be about (Anol 2012). Validity defined as the extent to which data collection method or methods accurately measure what they were intended to measure (Anol, 2012).

Numbers of different steps were taken to ensure the validity of the study:

- The data was collected from the reliable sources, from the company who adopt reverse logistics practice (reuse & recycle).
- The survey questioner were standardized and used by previous researchers.

3.6 ETHICAL CONSIDERATION

According to Saunders, Lewis and Thornhill (2001, p.130) "Ethics refers to the appropriateness of your behavior in relation to the rights of those who became the subject of your work, or are affected by it". The data were collected from the sample respondent through questionnaires; the respondents were not required to write their name. The result of the study is to be used for academic purpose only and the response of the participant is fully confidential. The information that the respondent gave was analyzed without any change by the researcher. Furthermore, the work that has been used in this research as a base for this study were cited appropriately as the researcher respect the work of previous studies.

This chapter has presented a description of the methodology used in this study. It has covered the choices and motivations regarding research design, population and sampling techniques, instruments of data collection, methods of data analysis, validity and reliability of the research and research ethics.

CHAPTER FOUR

RESULTS, DATA ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter presents an analysis of data collected and discusses the findings on the relationship between reverse logistics practices and organizational performance in the case of EABSC.

4.2 OVERALL RESPONSE RATE

The survey was conducted during in one week time. From the total 111 questionnaires distributed 102 were returned from which 5 were not correctly filled and rejected. Therefore, 97 were effectively used for analysis that shows response rate of 87%. Table below shows the overall response rate.

Table 4.1a Overall Response Rate

Sample	**Number**	**Percent**
Number of questionnaires distributed	111	100%
Returned questionnaires	102	92%
Incomplete questionnaires	5	5%
Total usable questionnaires	97	87%

Source: Survey Result

4.3 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

The first part of the questioner consists of the demographic information of the participants. This part of the questioner requested a limited amount of questions about their level of education, length of service in the company, department/ section they are working for and the position they currently enrolled. . Accordingly, their responses were summarized in the following table.

Table 4.2a Respondent's Profile

Demographic Information	**Frequency**	**Valid Percentage**
Level of Education		
Diploma	26	27%
Degree	63	65%
Masters & Above	8	8%
Total	97	100%
Length of Service		
Less than two years	13	13%
2-5 years	38	39%
5 years & above	46	48%
Total	97	100%

Source: Survey Result

- Based on the finding in table 4.2a greater portion of the respondents 63(65%) had first degree, 26(27%) hold diploma and 8(8%) had master's degree. This implies that respondents were professional and had at least diploma.
- Concerning length of service majority of the respondents 46(48%) had work experience of 5 years and above, 38(39%) were between two and five years and 13(13%) of the respondents had less than two years of work experience in the company. This implies that majority of the respondents were senior and had good company knowledge.

Table 4.2b Respondent's Profile

Department/ Section		
Logistics & Procurement	16	17%
Sales & Marketing	18	19%
Finance & Administration	13	13%
Human Resource	7	7
Top level Managers	12	12%
Production & Techniques	31	32%
Total	97	100%
Position/ Title		
Top level	12	12%
Middle level	58	60%
Lower level	27	28%
Total	97	100%

- From table 4.2b it is clear that 16(17%) were from logistics and procurement department, 18(19%) were from sales and marketing department, 13(13%) were from finance and administration, 7(7%) were from human resource department, 31(32%) were production and technical team and 12(12%) were top level managers. The research participants comprise all departments in the company.
- With regard to position or title 58(60%) of the participants were in the middle level position, while 27(28%) of respondents were in lower level position and the rest 12(12%) were top level managers. The research involve all positions in the company.

4.4 DESCRIPTIVE ANALYSIS

Descriptive statistics were used to summarize the basic features of data sets through measures of central tendency and dispersion. Descriptive statistics allow the researcher to describe variables numerically (Saunders et al., 2001). Means and standard deviations were the descriptive statistics used in the current study.

4.4.1 EXTENT OF ADOPTION OF REVERSE LOGISTICS PRACTICE

The study sought to establish the extent of adoption of reverse logistics practices in EABSC. Respondents were requested to state the extent of adoption of indicators of elements of reverse logistics practices including reuse and recycling. A 5-point Likert scale was used to rate the extent of adoption of the elements of these indicators whereby 1 was accorded to ‘no extent’, 2 to ‘small extent’, 3 to ‘moderate extent’, 4 to ‘great extent’ and 5 to ‘very great extent’.

4.4.1.1 REUSE REVERSE LOGISTICS PRACTICES

The study began by assessing the level of adoption of reuse reverse logistics practices. The findings were as is indicated in table 4.3 below.

Table 4.3 Extent of Adoption of Reuse Reverse Logistics Practice

Statement	Mean	SD
Return used packaging materials for reuse.	4.0667	1.0822
Set quality standards for reuse	4.0400	0.9924
Generate energy from renewable sources of energy	3.2000	1.5157
Design product for reuse	4.0133	0.9655
Grand Mean	3.8300	1.1390

Source: Survey Result

Results presented in table 4.3 show that the extent of adoption of elements of reuse as a reverse logistics practice by EABSC are clear and measurable as indicated is by its weighted mean of 3.8300. Respondents were found to be very familiar with return of used packaging materials to suppliers for reuse given its high mean of 4.0667. Likewise, they indicated that adoption of set quality standards for reuse was relatively prominent given its mean of 4.0400 as well as respondents acknowledged design for products for reuse (mean of 4.0133) and that of generation of energy for renewable sources of energy given its mean of 3.2000.

4.4.1.2 RECYCLING REVERSE LOGISTICS PRACTICES

Further, the study sought to establish the extent of adoption of elements of recycling reverse logistics practices. Using Likert scale to rank indicators of recycling, the results were as is presented in Table 4.4 below.

Table 4.4: Extent of Adoption of Recycling Reverse Logistics Practices

Statement	Mean	SD
Return used packaging materials to suppliers for recycling.	3.6327	1.0742
Create awareness to the public about recyclable packaging materials	3.2708	1.0466
Well documented recycling policy	3.4583	1.1291
Structured market incentives for recyclable packaging materials	3.4082	1.9336
Grand Mean	3.4426	1.0459

Source: Survey Result

Table 4.4 contains the results of the extent of adoption of recycling as an indicator of reverse logistics practice. The results show that the extent of adoption of recycling is clearly defined as adduced to by its overall mean ranking of 3.4426. Respondents seemed to be more familiar with return of used packaging materials to suppliers for recycling thus a high mean ranking of 3.6327 followed by well documented recycling policy with mean value of (3.4583) then structured market incentives for recyclable packaging materials with mean of (3.4082) and lastly respondents confirmed that create awareness to the public about recyclable packaging materials given its mean of (3.2708) as elements of recycling.

4.4.2 PROBLEMS IN REVERSE LOGISTICS IMPLEMENTATION

The respondents were asked to indicate the extent to which their organizations could experience problems relating to cost, information systems, product returns and the reverse logistics process, organizational and management-related

problems, problems with supply chain partners and customers. A 5-point Likert scale was used to rate the extent of problem experienced.

4.4.2.1 COST RELATED PROBLEMS

Table: 4.5. Cost related problems of reverse logistics

Statement	Mean	SD
High cost associated with reverse logistics	3.53	0.722
Inability to reduce costs	3.40	0.813
Lack of awareness of the hidden cost of reverse logistics	3.65	0.860

Source: Survey Result

Table 4.5 contains the results of cost related problems of reverse logistics. According to the survey result lack of awareness of the hidden cost of reverse logistics is the main problem with mean value of 3.65 and standard deviation .860 followed by high cost associated with reverse logistics with mean value of 3.53. Inability to reduce costs of reverse logistics with mean of 3.40 tend to be perceived as problems to reverse logistics but with moderate extent. Lack of awareness of the hidden cost of reverse logistics is perceived as major problems of reverse logistics implementation that is related to cost.

4.4.2.2 INFORMATION RELATED PROBLEMS

Table: 4.6 Information related problems of reverse logistics

Statement	Mean	SD
Insufficient investment in information technology	3.69	0.738
Low reliability of IT solutions	3.01	0.889
Lack of information visibility	3.31	1.011
Insufficient, abundant, ambiguous or conflicting data	3.81	0.718

Source: Survey Result

Table 4.6 contains the results of information related problems of reverse logistics practice. The results show that insufficient, abundant, ambiguous or conflicting data tended to be perceived as major problem with greater mean value of 3.81 and standard deviation of .718 followed by insufficient investment in information technology. Lack of information visibility was perceived to be problem with moderate extent with mean value of 3.31. However low reliability of IT solutions was perceived to be the least significant problem with mean value of 3.01. Therefore, Insufficient, abundant, ambiguous or conflicting data was perceived as major problems of reverse logistics in relation to information.

4.4.2.3 PROBLEMS RELATING TO PRODUCT RETURNS AND REVERSE LOGISTICS PROCESSES

Table: 4.7 Problems relating to product returns and reverse logistics processes

Statement	Mean	SD
Uncertainties relating to returns (e.g. irregular material flows and infrequent and erratic timing patterns of returns).	3.35	0.943
Uncertainty about appropriate disposition option to follow	3.40	0.849
Lack of knowledge about time and costs involved in the disposition of returns	3.60	0.866

Source: Survey Result

Table 4.7 shows problems of reverse logistics related to product return and reverse logistics process. Lack of knowledge about time and costs involved in the disposition of returns and uncertainty about appropriate disposition option to follow had the highest mean values of 3.6 and 3.40 respectively and perceived as a problem to a great extent. Uncertainties relating to returns with mean value of 3.35 perceived as a problem to moderate extent. Lack of knowledge about time and costs involved in the disposition of returns was perceived as being the principal problem of reverse logistics implementation.

4.4.2.4 ORGANIZATIONAL AND MANAGEMENT-RELATED PROBLEMS

Table 4.8. Organizational and management-related problems or reverse logistics

Statement	Mean	SD
Not including reverse logistics in strategic planning	3.43	1.083
Lack of top management awareness of the importance of reverse logistics	3.34	0.940
Lack of top management commitment to reverse logistics	3.63	0.945
Lack of departmental collaboration / communication / cooperation in reverse logistics	3.60	0.902
Resistance to change in order to include reverse logistics	3.59	0.866

Source: Survey Result

Table 4.8 above indicate organization and management related problems of reverse logistics. Lack of top management commitment to reverse logistics, followed by lack of departmental collaboration and resistance to change tend to be perceived as a problem to a great extent with mean value of 3.63, 3.60 & 3.59 respectively. Not including reverse logistics in strategic planning (mean of 3.43) and lack of top management awareness of the importance of reverse logistics (mean of 3.34) were perceived as problems of reverse logistics to moderate extent. Lack of top management commitment to reverse logistics was perceived as major problem related with management and organization.

4.4.2.5 PROBLEMS WITH SUPPLY CHAIN PARTNERS

Table 4.9 Problems with supply chain partners of reverse logistics

Statement	Mean	SD
Lack of collaboration with supply chain partners in reverse logistics	3.78	0.770
Lack of communication with supply chain partners in reverse logistics	3.68	0.818
Lack of clear policies on return of products and materials.	3.31	1.011
Customers' abuse of return policies	3.82	0.668
Unauthorized return allowance	3.93	0.798
Customers' negative perception of returning the products and materials	3.74	0.683

Source: Survey Result

Table 4.9 indicate reverse logistics problem related with supply chain partners. Unauthorized return allowance, customers' abuse of return policies, lack of collaboration with supply chain partners, customers' negative perception of returning and a lack of communication with supply chain partners in respect of reverse logistics all tended to be perceived as a problem to a greater extent. However lack of clear policies on return of products and materials perceived as a problem to a lesser extent. Unauthorized return allowance perceived as the major problem of reverse logistics related with supply chain partners.

4.4.2.6 CUSTOMER RELATED PROBLEMS

Table: 4.10 Customer related Problems of reverse logistics

Statement	Mean	SD
Lack of clear policies on return of products and materials.	3.34	0.683
Customers' abuse of return policies	3.81	0.675
Unauthorized return allowance	3.71	0.624
Customers' negative perception of returning products.	3.53	0.889

Source: Survey Result

Table 4.10 indicate reverse logistics problem related with customers. Customers' abuse of return policies and unauthorized return allowance both tend to be perceived as a problem to a greater extent with mean value of 3.81 and 3.71 respectively. Customers' negative perception of returning products tends to be problem to moderate extent with mean value of 3.53 and lack of clear policies on the returns of products and materials tends to be problems to lesser extent with mean value of 3.53. Customers' abuse of return policies was perceived as major problems of reverse logistics related with customers.

4.5 CORRELATION ANALYSIS

To facilitate an inferential analysis of the relationship between the elements of reverse logistics practices and organizational performance of EABSC, respondents were requested to score for indicators of organizational performance (financial and market performance) and extent of adoption of reverse logistics practice (reuse and recycling).

In this section the researcher tried to accomplish the goal of the study through applying Pearson correlation analysis as it is the most widely used methods of measuring the strength and direction of relationship between and among variables.

4.5.1 RELATIONSHIP BETWEEN REVERSE LOGISTICS PRACTICES AND ORGANIZATIONAL PERFORMANCE.

Pearson Correlation analysis was used to determine the relationship between independent variables (reuse and recycle reverse logistics practice) and dependent variable organizational performance.

Accordingly, the Pearson Correlation results range between 1 (perfectly linear positive correlation) to -1 (perfectly linear negative correlation). When the correlation value is 0, no relationship exist between the variables understudy and when the correlation value lies in the middle between 1 & -1 (excluding 0) the below interpretation guide (table 4.1b) developed by Field, 2005 becomes handy. Accordingly, this guide has been used to interpret the result which are summarized in the coming sections.

Table 4.1b Correlation result interpretation guide

Correlation value in range	**Interpretation**
0.10 - 0.29	Small correlation
0.3 – 0.49	Medium correlation
0.5 – 1	Strong correlation

Source: Field, A. (2005)

Table 4.11 Correlation between reverse logistics practice and organizational performance

Correlations

		Reuse	Recycle	Organizational Performance
Reuse	Pearson Correlation	1	.695**	.695**
	Sig. (2-tailed)		.000	.000
	N	97	97	97
Recycle	Pearson Correlation	.695**	1	.820**
	Sig. (2-tailed)	.000		.000
	N	97	97	97
Organizational performance	Pearson Correlation	.695**	.820**	1
	Sig. (2-tailed)	.000	.000	
	N	97	97	97

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output

As can be witnessed on table 4.11 above, which depicts the relationship between reverse logistics practice (reuse & recycle) and organizational performance, both reuse and recycle are found to have significant correlation with organizational performance since two-tailed significance test values are less than 0.01. Further, the Pearson correlation value illustrates that reuse (r=.695) and recycle (r=.820) have strong positive correlation with organizational performance.

Ongombe (2012) also looked at the relationship between reverse logistics and competitive advantage in water bottling companies in Nairobi. This study concluded that there was indeed a strong relationship between reverse logistics and competitive advantage. Companies that implemented reverse logistics practices benefitted from increased profit margins due to reduction in production costs and increased sales.

Waithaka (2012) studied the reverse logistics practices in medical supplies by looking at the case study of Kenya Medical Supply Agency. Although his study showed that the adoption of reverse logistics practices at the Kenya Medical Supply Agencies was low, there was a positive relationship between reverse logistics and operational performance of the agency.

As a result of the findings it can be said that reverse Logistics practice has positive relationship with organizational performance of a company.

4.5.2 RELATIONSHIP BETWEEN REVERSE LOGISTICS PRACTICE (REUSE & RECYCLE) AND FINANCIAL PERFORMANCE

Table 4.12 Correlation between reverse logistics practice and financial performance

Correlations

		Reuse	Recycle	Financial performance
Reuse	Pearson Correlation	1	.695**	.601**
	Sig. (2-tailed)		.000	.000
	N	97	97	97
Recycle	Pearson Correlation	.695**	1	.748**
	Sig. (2-tailed)	.000		.000
	N	97	97	97
Financial performance	Pearson Correlation	.601**	.748**	1
	Sig. (2-tailed)	.000	.000	
	N	97	97	97

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output

Table 4.12 illustrates the relationship between reverse logistics practice (reuse & recycle) and financial performance which is one of the indicators of organizational performance. Both reuse and recycle are found to have significant correlation with financial performance since two-tailed significance test values are less than 0.01. As shown in the table summary reuse is found to have strong correlation (r=.601) with financial performance and also recycle have strong correlation (r=.748) with financial performance. Both reverse logistics practice have significant strong positive correlation with financial performance.

According to Rao and Holt (2005) mainly focused on the financial outcomes of organizational performance, green supply chains do give firms competitive advantage and also lead to increased economic performance. They observed that the image of products of firms that practiced reverse logistics in Philippines had been positively affected giving such firms a competitive advantage. Based on the findings, it can be said that reverse logistics has positive relationship with financial performance of the organization.

4.5.3 RELATIONSHIP BETWEEN REVERSE LOGISTICS PRACTICE (REUSE & RECYCLE) AND MARKET PERFORMANCE

Table 4.13 Correlation between reverse logistics practice and market performance

Correlations

		Reuse	Recycle	Market performance
Reuse	Pearson Correlation	1	.695**	.567**
	Sig. (2-tailed)		.000	.000
	N	97	97	97
Recycle	Pearson Correlation	.695**	1	.700**
	Sig. (2-tailed)	.000		.000
	N	97	97	97
Market performance	Pearson Correlation	.567**	.700**	1
	Sig. (2-tailed)	.000	.000	
	N	97	97	97

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output

As shown in the table 4.13 above both reuse and recycle are found to have significant correlation with market performance since two-tailed significance test values are less than 0.01. Reuse is found to have strong correlation (r=.567) with market performance and also recycle have strong correlation (r=.700) with market performance. Both reverse logistics practice have significant strong positive correlation with market performance.

Other researcher like Azevedo et al., (2011) explored the influence of green practices on supply chain performance with a focus on the automotive industry in Portugal. This study provides evidence that green practices have a positive effect on quality, customer satisfaction and efficiency. As a result of such findings it can be said that reverse logistics practice has positive relationship with market performance of the organization.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter, an attempt is made to give a summary of the research findings, conclusions, recommendation and suggestion for further research. The main purpose of this study was to determine if there exists a relationship between reverse logistics practices and the organizational performance of EABSC. Data for analysis was obtained by use of questionnaires adopted from A. Eshikhati (2014) and A. Badenhorst (2013) with some modification. Information obtained was analyzed quantitatively with the aid of statistical package for social sciences (SPSS) version 21 computer software.

5.2 SUMMARY

From data analysis in chapter four, the study summarized the major research findings as follows:

5.2.1 EXTENT OF ADOPTION OF REVERSE LOGISTICS PRACTICES

An inquiry on the extent of adoption of reverse logistics was based on level of adoption of elements of reuse and recycling reverse logistics practices. The findings showed there is a significant level of adoption of both indicators with each of the indicators attaining above average levels of mean ranking (above 3.4426 out of 5) thus giving overall level of reverse logistics adoption by EABSC a mean of 3.6363 out of 5.

5.2.2 PROBLEMS EXPERIENCED IN REVERSE LOGISTICS IMPLEMENTATION

- Regarding cost associated problems of reverse logistics, it was found that lack of awareness of the hidden cost of reverse logistics was the main problem experienced. High cost associated with reverse logistics was also perceived to be a major problem. The respondents indicated that the inability to reduce cost was also a problem, but to a moderate extent. From the results it is clear that the cost associated with reverse logistics was indeed perceived to be a problem.

- In terms of problems relating to information systems, it was found that insufficient, abundant, ambiguous or conflicting data tended to be perceived to be the primary problem. The second main problem was insufficient investment in information technology, which was also perceived to be a major problem. Lack of information visibility was perceived to be problems to a moderate extent. However, low reliability of IT solutions was perceived to be problem with lesser extent. The results indicated that information-related problems in reverse logistics were indeed problems that the organization experience.

- In terms of problems relating to product returns and reverse logistics processes, lack of knowledge about time and costs involved in the disposition of returns was perceived to be the main problems. Uncertainty about appropriate disposition option to follow was also perceived to be a major problem. However, it was indicated that the uncertainties relating to returns was a problem to a moderate extent. Hence the results indicated that

the most significant problems were perceived to be lack of knowledge about time and costs involved in the disposition of returns and uncertainty about appropriate disposition option to follow.

- The greatest obstacles relating to organizational and management related problems were perceived to be a lack of top management commitment to reverse logistics, lack of departmental collaboration and resistance to change to include reverse logistics. Not including reverse logistics in strategic planning and lack of top management awareness of the importance of reverse logistics was also perceived to be a major problem, but to a moderate extent. The results indicated that organizational and management-related problems were indeed perceived to be a problem in the organization.

- In terms of problems with supply chain partners, it was found that unauthorized return allowance, customers' abuse of return policies, lack of collaboration with supply chain partners, customers' negative perception of returning and a lack of communication with supply chain partners in respect of reverse logistics all tended to be perceived as a problem to a greater extent. However, lack of clear policies on return of products and materials perceived as a problem to a lesser extent.

- In terms of customer-related problems, it was found that customers' abuse of return policies was perceived to be the main problem. The results also indicated that unauthorized return allowance tended to be a serious problem. However, customers' negative perceptions of returning the products perceived to be problems to a moderate extent and lack of clear policies on the returns of products and materials tends to be problems to lesser extent.

5.2.3 RELATIONSHIP BETWEEN REVERSE LOGISTICS PRACTICES AND ORGANIZATIONAL PERFORMANCE

Pearson correlation analysis were used to investigate the relationship between reverse logistics practices and organizational performance of EABSC. The data obtained from the respondents indicating the extent of adoption of reverse logistics practices was correlated with elements of organizational performance.

The correlation analysis which were found to be significant showed that both reverse logistics practice (reuse r=.695 & recycle r=.820) have strong correlation with organizational performance. Further, both reverse logistics practice have significant strong positive correlation with financial performance and market performance.

5.3 CONCLUSION

From the foregoing discussion it can be concluded that EABSC had adopted reverse logistic practices to appreciable levels. According to the Pearson correlation analysis, these reverse logistics practices (reuse & recycle) tended to have strong positive relationship with financial performance, market performance and overall organizational performance. This finding conforms to that of Langat (2012) who observed that implementation of reverse supply chain practices significantly influences organizations' financial performance. Similarly, Serut (2013) found that there exist a positive relationship between implementation of reverse logistics practices and organizational performance an assertion also

supported by Gitau (2010) in a study on the effects of reverse logistics on the performance of East African Breweries.

In conclusion, the above results indicate that the principal problems in reverse logistics implementation were perceived to be lack of awareness of the hidden cost of reverse logistics, insufficient, abundant, ambiguous or conflicting data, lack of knowledge about time and costs involved in the disposition of returns, lack of top management commitment to reverse logistics and customers' abuse of return policies. However, the results indicated that lower reliability of IT solution and lack of clear policies on return of product and materials tended to be perceived as problems to a lesser extent.

5.4 RECOMMENDATIONS

- As the findings show that adoption of the reverse logistics practices is fairly good, EABSC should include reverse logistics in their strategic planning and create clear policies for it. Management of EABSC should look at reverse logistics practice as a strategic method that can be used to achieve organizational performance.
- EABSC should invest in appropriate information technology and establish effective data collection to improve the effectiveness of their reverse logistics processes and EABSC should communicate and share information with their supply chain partners regarding reverse logistics.
- EABSC should consider outsourcing their reverse logistics function, if they lack the necessary expertise or knowledge Management of EABSC should formalize adoption of reverse logistics activities.

5.5 SUGGESTION FOR FURTHER RESEARCH

Further studies should be conducted on the key determinants and drivers of reverse logistics. Similar study should be conducted on the relationship between reverse logistics and organizational performance of other processing/manufacturing organizations. Lastly, further study should be conducted on the role of top management in adoption of reverse logistics practices.

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APPENDICES

Questionnaire

Addis Ababa University School of Commerce

Department of Logistics and Supply Chain Management

Dear respondent,

This research intends to determine the extent to which EABSC has adopted reverse logistics practices. It aims to determine the relationship between reverse logistics practice and organizational performance. The information obtained from this survey shall be kept confidential, and shall be used strictly for academic purposes only. Your participation in this survey shall be highly appreciated.

Instructions on the completion of this questionnaire will follow before each section. The questionnaire is designed to make completion as easy and quick as possible. Most of the questions can be answered by simply making a tick in a box.

Thank you Very much!!

SECTION A: GENERAL INFORMATION

1	Which department/ section you are working for?	
2	Which position you are currently enrolled?	
3	Length of service in the company?	
4	Level of Education?	

SECTION B: REVERSE LOGISTICS PRACTICES

Indicate the extent to which your organization has implemented the following reverse logistics practices. There are five options to answer
[1] Not at all [2] Small extent [3] Moderate extent [4] Great extent [5] Very great extent. Please put check mark "✓" on the box provided that reflect your idea

	Reverse Logistics Practice	**1**	**2**	**3**	**4**	**5**
	Reuse					
1	There is return system for used packaging materials to suppliers for reuse.					
2	Our organization set quality standards for reuse of packaging materials.					
3	Our organization is capable of generating energy from renewable sources of energy					
4	Our organization designs packaging materials for reuse					
	Recycling					
1	There is return system for used packaging materials to suppliers for recycling.					
2	Our organization create awareness to the public about recyclable packaging materials.					
3	Our organization has well documented recycling policy					
4	Our organization has structured market incentives for recyclable packaging materials.					

SECTION C: ORGANIZATIONAL PERFORMANCE

To what extent has your organization experienced an increase in the following financial performance outcomes as a result of adopting reverse logistics practices?
[1] Not at all [2] Small extent [3] Moderate extent [4] Great extent [5] Very great extent

	Financial Performance Measures	1	2	3	4	5
1	Gross Profit Margin has increased for the last three years.					
2	Return on Investment has increased for the last three years.					
3	Return on sales has increased for the last three years					
	Market Performance Measures					
1	There is Market Share Growth in the last three years.					
2	There is Sales Volume Growth (in units) in the last three years.					
3	There is Sales Growth (in birr) in the last three years.					

SECTION D – PROBLEMS IN REVERSE LOGISTICS

In your opinion, to what extent do your organization experience the following problems with reverse logistics? There are five options to answer

[1] Not at all [2] Small extent [3] Moderate extent [4] Great extent [5] Very great extent. Please put check mark "✓" on the box provided that reflect your idea.

	Cost-related problems in reverse logistics	1	2	3	4	5
1	High cost associated with reverse logistics					
2	Inability to reduce costs					
3	Lack of awareness of the hidden cost of reverse logistics					

	Information-related problems					
1	Insufficient investment in information technology					
2	Low reliability of IT solutions					
3	Lack of information visibility					
4	Insufficient, abundant, ambiguous or conflicting data					
	Problems relating to product returns and reverse logistics processes					
1	Uncertainties relating to returns (e.g. irregular material flows and infrequent and erratic timing patterns of returns).					
2	Uncertainty about appropriate disposition option to follow					
3	Lack of knowledge about time and costs involved in the disposition of returns					
	Organizational and management-related problem					
1	Not including reverse logistics in strategic planning					
2	Lack of top management awareness of the importance of reverse logistics					
3	Lack of top management commitment to reverse logistics					
4	Lack of departmental collaboration / communication in reverse logistics					
5	Resistance to change in order to include reverse logistics					

	Problems with supply chain partners in reverse logistics					
1	Lack of collaboration with supply chain partners in reverse logistics					
2	Lack of communication with supply chain partners in reverse logistics					
3	Lack of clear policies on return of products and materials.					
4	Customers' abuse of return policies					
5	Unauthorized return allowance					
6	Customers' negative perception of returning the products and materials					
	Customer-related problems					
1	Lack of clear policies on return of products and materials.					
2	Customers' abuse of return policies					
3	Unauthorized return allowance					
4	Customers' negative perception of returning products.					

Thank you very much for your cooperation!!