

**GREEN SUPPLY CHAIN MANAGEMENT PRACTICES AND PERFORMANCE OF
SOFT DRINK MANUFACTURING FIRMS IN NAIROBI, KENYA**

BY:

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DECLARATION

Declaration by the Candidate

This research project is my original work and has not been presented for award of degree in any other University or institution. No part of this project may be reproduced without the prior permission of the author and/or University of Nairobi.

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This research project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

This research project is dedicated to my Parents Mr. & Mrs. Nyariaro for the moral support and understanding they have shown since inception of the program not forgetting my siblings Lilian, Esther, Philip and all my friends for their inspiration, support and encouragement throughout the research period.

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ABBREVIATIONS AND ACRONYMS

BSC	Balanced Score Card
CSR	Corporate Social Responsibility
EM	Environmental Management
GSCM	Green Supply Chain Management
JIT	Just In Time
MNC	Multinational Cooperation
NEMA	National Environmental Management Authority
R&D	Research and Development
RDT	Resource dependence theory
SCM	Supply Chain Management
SCOR	Supply-chain operations reference
TQM	Total Quality Management

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ABSTRACT

Globalization has increased customers awareness about environmental issues that introduced business opportunities for environmentally conscious manufacturing industries. Hence, manufacturing industries are facing pressure from global market to improve their sustainability performance by implementing environmental management practices. Despite the increasing popularity of green supply chain management in developed countries, there is a number of areas that necessitate for further research. The general objective of the study was to investigate green supply chain management practices and performance of soft drink manufacturing firms in Nairobi County, Kenya. The research objectives were to establish the extent green supply chain management practices are implemented by Soft Drink firms in Nairobi Kenya, to find out the correlation involving GSCM practices and performance of soft drink companies in Kenya and to decide the Challenges faced by firms in implementing green supply chain practices. The research design was a descriptive research approach. The research comprised of soft drink and water firms in Nairobi Kenya. A census was done on 68 firms in Nairobi. The questionnaire was answered by 65 respondents of quality assurance or equivalent departments. The study has used primary data which was gathered by use of a questionnaire. Quantitative information gathered was analyzed by use of descriptive information to get percentages, means, standard deviations and frequencies. This study concludes that Soft Drink firms have Green Supply Chain Management (GSCM) enables the firms to reduce negative environmental effects by minimizing wastage, decreasing the use of harmful materials, recycling products and their wastage and limit the pollution through cleaner production. GSCM introduces reverse logistics approach that assists Soft Drinks firms to recycle the products after consumption as result overall consumption of raw material decrease, which provide solution to the scarcity of resources as well as to the degradation of environment. GSCM helps to improve brand image as well as company's image and increase the profitability. The study also concludes that green supply chain seeks to maximize the economic benefits by decreasing consumption of resources, energy, and emission of pollutants to create socially responsible enterprises. Implementation of GSCM practices improves both environmental and financial performance of a firm. It is very important to know that, Collaborative efforts between buying firms and suppliers are needed to improve performance.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

As Consumer awareness keeps on increasing in the corporate world today, environmental issues such as global warming and effects of the commodities they produce, firms will determine on how to tackle manufacturing processes in supply chain. (Martin, 2017). There has been a rise in greenhouse emissions and environmental pollution by firms, which has instigated the need of these very organizations to align their supply chain processes in regards to the scarce resources. Adoption of Green Supply Chain Management (GSCM) is an approach to hasten and develop procedures as well as produce with a key focus on requirements of environmental regulations (Hsu & Hu 2008). As customers demand that items and services be rendered without harming the environment, the management are required to settle on choices that help the joining and coordination of environmental practices all through the inventory/ supply chain (Vachon&Klassen, 2007).

The rapid occurrence of atmospheric changes, regulations plus anxieties in the last decade, is creating matters related to environmental concerns such as contamination, therefore the growth of businesses should be handle in similar way as the supply chain management, hence adding to the initiative of Green Supply Chain Management (Sheu et al., 2005). GSCM increases as additional resourceful environmental strategy in the supply chain management, where much acknowledgement on its progressive and adaptability features was made by companies. The existing atmospheric needs that affected manufacturing activities have expanded considerably in coming up with environmental management (EM) schemes for invention system. Subsequently the idea of GSCM emerges and turning into an imperative factor for business exercises today (Zhu &Sarkis, 2006; Rao& Holt, 2005). Zhu et al. (2008) likewise guaranteed that GSCM can be viewed as an ecological development. By coordinating green supply chain to the production network, it has made another innovation where supply chain will have an immediate connection with the environment.

Kenya is one of the developing nations in the world and is a progressively becoming industrialized nation. Despite Kenya being a noteworthy manufacturing nation which brings openings, it faces a bigger threat towards the environmental factors. The multinational organizations are utilizing

underdeveloped nations as a point for disposition of end-of-life items and this outcome has largely affected the environment (Puckett & Smith, 2002).

1.1.1 Green Supply Chain Management Practices

Wang and Lin (2011) define green supply chain management practices as the improvement on environmental impact, which is achieved by the control of unfinished products, spare parts and processes from suppliers to manufacturers to customers. GSCM focuses on integrating a given ecological rational into Supply Chain Management that entails material sourcing, product design, and selection, industrial process, distribution of finished goods to the final customers consumers and end-of life organization of the goods after a valuable life. GSCM has increased an ecologically sensible mind-set to supply chain management has then been presented to a number of the ultimate industrial procedures (Aref et al., 2005).

According to Hsu and Hu (2008), Green supply Chain Management (GSCM) is a way to deal with enhancement and the execution of the procedures and products as indicated by the demands of the environmental demand (Sheu&Neto, 2008) in sustainable supply chain management and business implications looked at a few areas that is directly linked to business performance. Sustainable Manufacturing: whose main aim is to reduce impending environmental issues and to systemically create persons as well as progressively enhancing procedures to give value and as it consumes the most little possible resources. (John, 2012). Green Logistics to meet the customers demand while at the same time trying to disengage any negative effects from logistics operations that has transportation and finally Reverse Logistics that deals with return and management of waste materials in the supply chain loop.

Green Supply Chain Management practices occurred as a vital modern innovation that aid firms to create “win-win” strategies that attain benefit plus a desirable market share projected by the firm, through cutting of prices and lower their atmospheric related perils, while uplifting their environmental efficacy (Van & Hock, 2000). Green supply chain management contain various advantages to a firm, spreading from reduction of cost all the way to integrating suppliers to more involvement in the conclusion making procedure that improve ecological improvement (Bowen et al., 2001; Hall, 2003; Rao. 2002). However, according to Michael Fournier, certainly experiencing green is a vital step for any particular consumer-established firm. However, a number of challenges need to be talked about the value-chain you go. In addition, these challenges may be a superfluity

of substances, which include level of almost obvious doubt, regarding market situation, investors 'trepidations, as well as adjustment.

1.1.2 Firm Performance

Firm Performance is a measurement of how efficient a firm is, not only in terms of economic advancement but where the company sets up its premises to operate (Umer, M. & Afzal, F., 2012). Different measures for instance determine the performance of firm's financial well-being such as revenue, profit margin, sales growth, stock ratios etc. Depending on the industry on which the firm is set up, mostly manufacturing in this case, certain ratios will be considered more meaningful to determine a firm's performance, manufacturing firms for instance will look at total unit sales, prices of its stock, cash flow, operating revenue and income revenue.

Supply chain management concentrate on the ways the firm control their main suppliers' procedure technology, and ability to facilitate competitive advantage. SCM is a process that is based on how often processes in logistics, manufacturing, distribution, materials, and transportation operates within a firm (Lee & Billington 1992). In line with the supply chain, management performance should be able to be seen in the system designed to measure the performance. This is the total strategic values and total dependable variables that a management undertakes to enable run day-to-day firm activities that also enable productivity. (Bahae, 1995) suggests of Different stakeholders' requirement to give a go-ahead light or indicators that would otherwise enable them make sound informed decisions.

Supply chain performance measurement can be measured through: Costs incurred by the firm, client responsiveness, time allocated for each activity, and finally flexibility. It is proposed that systems developed to measure supply chain performance execution should be improved by creating measures and an evaluation of usage to overcome any shortcomings in actualizing the current measurement framework (Cohen & Lee, 1988).

Soft drink industry as a business is purposely built towards earning income through the sale of its produce. To make the most of the profits, soft drink firms created modern produce to meet clients need as well as those of their customers. Consequently, a particular interest may disclose different reasons valid only for developing certain products. For instance, size of a firm is generally considered to affect firm performance for developed economies, this will be because of economies

of scale or entry barriers. For a developing economy, the things may be opposite, since size of the firm may indicate large state owned enterprises which has hard times in dealing with market economies requirements (Mishkin, 2007).

1.1.3 Soft Drink Firms in Nairobi, Kenya

The soft drink industry has a rich history in Kenya, the first indigenous soft drink manufacturers' (Kenya Ice and Aerated Water Factory) was founded in 1931 in Mombasa. Examples of soft drinks like fizzy Soft drinks, juices as well as nectars, fruit punch, iced tea and water. In the 1940s' the soft industry was composed largely of small scale producers and over the years it is important to note foreign investment has contributed towards growth of such firms in Kenya. After 1945 Multinational Corporations (MNC's) intensified their importation efforts, though intensive marketing of sales promotion and advertising translating to the increased sales and raising awareness amongst Kenyan consumers, as well as modern and traditional retailers' expansion helped drive growth as a higher numbers of consumers was reached. Through MNCs there, was already symptoms of foreign firms merging the local firms or initiating franchise arrangements. For instance 7-Up merged Crystal Springs Aerated Water company in 1960 (Ibanda, 1979). By the mid-1950s' , MNCs that had already set print and operating in Kenya, they included Schweppes, Pepsi-Cola, Fitzgerald Baynes, 7-Up and Coca-Cola. Some of the established franchises such as Coca-Cola (set up first shop 1948), Pepsi-Cola (exited Kenya in 1970's and re-introduced in 2011). The soft drinks firms have contributed much towards Kenya's GDP (According to Euromonitor International report) With a Supported positive single-digit growth of a GDP forecast of 6% for 2016 this is in terms of employment and tax. A study by (Tetra Park, 2000) estimated the consumption patterns range growth to be: Juices and nectars-80%, Fruit flavoured-70%, Water-8% as well as carbonated drinks-1.5%.

Carbonated soft drink has a substantial market share but can be described as stagnant in the growth terms. This has driven many of the carbonated soft drink manufacturer's to venture into the growing juices market segments (Giathi, 2003).The Kenyan industry has faced a myriad of challenges including a depressed economy and the influx of cheap imports following the liberalisation of the economy and the spread of informal and relative unhygienic drinks. Some players have not been fortunate and have had to close shop. Abdalla (2001) notes that due to adverse trading environment, Pepsi cola pulled out of the Kenyan soft drink market in the early

1980's, Aspar the distributors and marketers of Schweppes also closed down in 2002. However, the industry as a whole seems to have come to grips with the impediments facing it and in 2005 production of soft drinks rose by 26.3 percent to 256,599 thousand liters from 203,169 thousand liters in 2004 (Economic Survey, 2006).

1.2 Research Problem

Green supply chain has been driven by practices that have heightened the deteriorating environmental conditions, e.g. reduction of crude material, increased waste materials and high levels of contamination. Green supply-chain management (GSCM) is major concern of every company management or production unit. Soft drinks firms in Nairobi Kenya is a sector that largely contributes to packaging (mostly plastics) material which has contributed towards pollution; packaging has now turned into a fundamental piece of the benchmarks that characterize soft drink firms. Consequently, there is need to decide how the performances of organizations in the soft drink firms is influenced by the usage of GSCM practices which is complimented by great negotiating practices in business and higher profits. This dictates that organizations need to incorporate their economic activities and the environment. (A Sharma, GR Iyer - Industrial Marketing Management, 2012).

Soft drink firms in Kenya needs foundation and the ability to recycle and deal with the waste products. Environmental considerations and increasing public feeling are driving manufacturer's choices around the blend of materials utilized as a part of manufacturing process, this includes packaging and the afterlife of the product. It is important to note also that most firms are as yet to develop structure and the idea of GSCM which has not been completely adopted. This foundation can be driven by collective organization initiative and treaties. According to National Environmental Management (NEMA) report of 2008, Kenya entered into a memorandum of understanding between the neighboring East African Countries Tanzania and Uganda for co-operation on environmental management and establishment of the East African Community (EAC) waste and climate conference on managing of trans-boundary activities of dangerous waste disposal (GOK, 2008).

Zhu et al. (2004) suggested that both natural and monetary gains are the reason for managerial decision towards a firm strategy in production. The expanding demands have caused the supply

managers in firms to consider usage of different GSCM practices that would give direction in production. This dictates that for a commodity to meet a certain criteria, it would have to undergo the laid procedures. Lee et al. (2012) discovered that, there is an immediate connection between GSCM initial usage and business execution. The outcomes demonstrated that business execution would be enhanced when GSCM improves operational effectiveness, this additionally will apply in Kenyan firms that actualize GSCM Practices.

Endeavors to minimize natural difficulties through rehearsing a few parts of GSCM were obvious however not demonstrative of full reception of the system. However, these examinations have not concentrated on the GSCM practices and their effect on general firm execution Mwirigi (2007). Additionally, Mohamed (2012) found that GSCM positively affects producing firms in Mombasa through competitive advantage they have with other firms as well as utilization of raw materials to give maximum output. She prescribed further research to be done in other sectors of the nation and administration segment.

From the studies above, none addressed the issue of green supply chain management and performance of soft drink manufacturing companies in Nairobi. Therefore this research wants to respond to the question: what could be the impacts of green supply chain management presentation on the of soft drink firms in Nairobi?

1.3 Research Objectives

- i. To establish the extent to which green supply chain management practices are implemented by soft drink firms in Nairobi Kenya.
- ii. To determine the relationship between GSCM practices and performance of soft drink firms in Kenya.
- iii. To determine the challenges faced by firms in implementing green supply chain practices

1.4 Value of the Study

This study is expected to be beneficial to soft drink industries to enable them formulate and regard the importance of adopting GSCM practices. Top management or decision making organs would be in a position to identify positive GSCM practices that will improve the company's core business performance and Further facilitate intensity in their R&D department to research on production to suit sustainable environment production i.e. acquisitions, disposal and product return.

The findings of the research would be a source of guiding tool for the government to identify the lapses in the existing environmental laws and regulations hence formulate better practices on environmental issues. It is the mandate of the Government to be able to align the production of goods and services within it's' territory either foreign or local production within sustainable environment practices. Consumer awareness is key too and this is a drive that will see such practices are conformed and implemented.

Academicians on the other hand would get relevant information regarding the importance of adopting the GSCM practices in the soft drink firms in Kenya Nairobi. This would also add to the body of experimental literature on adoption of GSCM practices and provide for more room in research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reassess the literature, which has been done on GSCM practices. It scrutinizes what the other researchers have mentioned about Green Supply Chain Practices. The chapter will therefore cover on the concept of Supply Chain Management Performance and the co-relation to GSCM.

2.2 Theoretical Literature Review

Theories are done to clarify, foresee, and comprehend reasons for why certain things work as they are and by large, to confront as well as enlarging the current info within the limits of central deductions. The theoretical system is the configuration that can handle or bolster a suggestion of a research problem. Two theories that were used in this study include Control theory of performance management system and Resource dependence theory.

2.2.1 Institutional Theory

The Institutional theory tries to explain the ways on how both conscious as well as unintentional options can direct firms to echo the norms, values, as well as ideologies of the managerial countryside. Due to this, all firms that have the required features will meet the environmental regulations, hence given the legality plus confirm valuable of assets by the community and wider atmosphere (Toma, Dubrow, & Hartley, 2005). According to the setting of GSCM, performers in the supply chain work to fulfil the desire of the consumer and the regulations needs. In other cases, Narasimhan and Carter (1998) instituted that firms are practicing these values because of the requirement of outside as well as inside forces as well as an consciousness of the possible outcomes should they fail to adhere by rules of the environment. In cases where the firm have an issue in legitimate for environment, with as social approval, then the practices of atmosphere will deployed extra quickly during the supply chain (Carter et al., 2007).

The challenge of the study is to comprehend if it exist a heterogeneous responses to GSCM operation from recognised forces occur. So, a research gap has been realized, where the researcher need to study the emerging economy states. Hence, it is planned that the official rules in rising financial system states in which where industrialization has been subcontracted (Ferdows, 1997), could be diverse from outcomes of preceding learning showed in urbanized nations.

2.2.2 Resource Dependence Theory

The Resource Dependence Theory (RDT) postulated by Godfrey (1998) recommended that, it is important for firms in the supply chain to be dependent as well as amalgamating so as to attain adequate performance in the long run to discourage pushing for short term benefits. In RDT, companies are relying on the resources given by other institutions so as to attain their development while other companies also relying on them (Paloviita&Luoma-aho, 2010). A significant assumption about this is that companies do not autonomously fully with tactically significant resources for survival.

The interdependency of supply chain hold hands with quality and efficiency of their combination that leads to the wellbeing accomplishing the success of employing GSCM need not be overlooked. To reduce the perceived uncertainty about their firm's operations, companies need to create a very strong correlation with key clients and suppliers. To control the external and internal environment, it is important for firms to form inter-organizational relationship. The creation of control is an issue of advocacy of the supply chain environmental practices.

2.3 Green Supply Chain Management Practices

This is a practice that is carried out by organizations to decrease the effect and impact of organizational activities to the environment (Awaysheh& Klassen 2010).These practices incorporate; green procurement practices, green manufacturing practices, green distribution practices and turnaround of end life(Reverse logistics).

2.3.1 Green Procurement Practices

Green Procurement (GP) is the environmental consideration in purchasing practice that incorporates the reduction; re-use and recycling of materials during the time spent buying. Green procurement is a solution for environmental concern and financial tradition in some businesses, as well as a way of getting items and supply that limits natural effect (Salam, 2008). As indicated by Holbrook (2004), Green Procurement relates to the act of anticipating waste and contamination by considering the environmental effect, for example, value, execution and different variables when settling on buying choices.

Carter et al. (1998) characterized green procurement as a specific end goal to encourage reusing assets, the buying division ought to participate in each action of supply chain network and should more solidly buy reused materials in order to lessen the utilization of raw materials however much

they could reasonably be expected. (Zsidisin&Siferd 2001) define green procurement as an arrangement of standards and strategies implied considering the effect on the environment.

Green procurement is the determination of merchandise and activities that limits environmental effect where organizations are required to do an examination of the natural effect of an items end lifecycle. Green Procurement can also be referred to as Favourable Procurement. This is alluded to as the purchase of environmentally friendly commodities and services. Goods and services obtained or purchased should always have little impact on the environment in their life usage than the standard/normal equivalent (Mulwa, 2010).

Zhu et al. (2002) considered green procurement as an office in the organisation counsels that guides basic leadership to enhance business growth and efficiency by reducing costs related to materials and end life cycle, ensuring assets and upgrading the business face in the society. Green procurement aims at managing waste and most procurement offices will always consider any incentive that will cut down on aggregate costs that are met during time spent in disposing wastes (Martha &Houston 2010).

2.3.2 Green Manufacturing Practices

Green Manufacturing (GM), is the framework that coordinates products and their design with issues of manufacturing, arranging and control in such a way to distinguish, evaluate, get to and deal with the stream of environmental waste with the objective of decreasing and limiting environmental effect while additionally endeavoring to maintain the standards of the product (Melnik et al., 2009). This has brought about utilization of raw materials that make use of systems with little access to them (Ninlawan et al., 2010). Green innovation and Eco-advancement is one the Green manufacturing processes. It is the driver in the move towards green and low carbon economy. Numerous organizations see the utilization of green manufacturing innovations as the foundation for their economic growth and development (Defra, 2008).

2.3.3 Green Distribution Practices

A green distribution practice is made up of green manufacturing, green packing and green distribution. Packaging complements, size, shape and how the materials used in the process affect the distribution. Improved packaging in regards with improving storage examples can bring down use, and increase space used in the stores plus transportation containers to minimize handling issues. A portion of the Green distribution Practices are: Green plan, which is the utilization of

Environmentally Conscious Design (ECD) and Life Cycle Assessment analysis (LCA) in creating how outline choices influence the item within the environment and furthermore cut on minimization of waste (Johnson, 1998; Sarkis & Cordeiro, 2001).

Life Cycle Evaluation in green supply is a process of measuring the environmental performance and expected relation of the products life cycle. It provides for tracing goods as well as product history of an item from the extraction of its crude resources out of the surroundings and the disposal thereafter (Field et al., 2003).

2.3.4 Reverse Logistics

Base on the findings by Stock (1998: 20), the words Reverse Logistics means the work of product returns, logistics in basis reduction, material substitution, reuse of materials, recycling. It requires organizations to put in place a mechanism to switch the regular logistics process from manufacturers to customers with aim of stock considered unacceptable is traced back to original producers in a convenient way. Reverse Logistics Practices includes forward and in reverse data flow that may empower the organization to start green logistics and lean logistics as well, which would be of enormous advantage. (Lyons & Farrington, 2006).

Smith (2005), invert logistics help an organization to distinguish issue related areas and bring about examples of imperfections, in this way decreasing the quantity of returned commodities. Wisner and Stanley (2007) affirmed that Reverse Logistics Practices incorporates regular stock, handling returned stock, restock, salvages and, inadequate stock.

2.4 Empirical Literature Review

There are two methods for looking at performance in connection to GSCM practices: environmental and Economic firm performance. The environmental performance looks at reducing environmentally harmful substances while economic Performance underlines more on the component of cost (Zhu et al., 2004). Some studies for example, Zhu and Sarkis (2004); found out positive connections appeared to show minimal or no huge connection connecting green supply chain practices as well as company's performance. In any case, a mix of positive and different connections relate to firm performance through economic performance which remains the best need for most organizations. There is need to comprehend and characterize the adoption of GSCM issues in a significantly more extensive setting and ought to conceptualize how GSCM frameworks match with the environment.

Corporate sustainability in regards to managing the environment is to fit environmental procedure to likewise phenomenon Madsen and Ulhui (2003), for example, corporate objectives such as commodity positioning and how they are produced. In their opinion, after effect of proactive pollution could really reduce costs incurred in production and enhance product face value or the image of the organization. Environmental well-being has a positive relationship with economic execution of the firm, a major cooperate sustainability link. Through the study however Madsen and Ulhui (2003) do not bring out long term strategies that firms could apply or deliberately incorporate environmental considerations into corporate key choices.

Malaba, Ogolla and Mburu (2014) provide insights on influence of GSCM practices for the current and future supply chain performance measurements which looks at the issues that are directly related to management. Research writings have provided knowledge on probable citations to supply-chain relations that enhance environmental performance (Handfield et al., 2002). Successful usage calls for mass coordination to screen the output of every grade that ought to have green supply chain viewpoint, and must be measured and enhanced together with shared objectives; non-monetary measurements have preferred considerations to money related measurements. Past studies brings out expectations for supply, though particularly not linked to Supply chain.

Choi and Zhang (2011) linked the relationship between firm performance and green practice. They realized a few organizations found a match that identified with environmental prerequisites and how firms maintained their profitability. Otago (2009) clearly asserts in his study that green supply chain management helps curb environmental effects of the industries and its activities leading to sustained performance on the environment. Adoption of GSCM therefore focuses on the role of adequate communication in implementing GSCM. Stakeholder theory therefore admits most external groups can leverage or be influenced by adoption green supply chain practices.

Amemba, Pamela Getuno, and Osoro (2013) bring out in their study components of green supply chain management. Continued escalating greenhouse emissions and environmental pollution by firms has agitated organizations efforts to put in place their operations linked to supply chain with a conviction of utilizing the minimal resources. The research analysis having been done from relevant journals and past research work look at the need of most firms in Kenya to adopt the green supply chain segments as a recurring norm to be able to accomplish the idea of sustained supply

chain process. Their work advocates for the importance of enhanced escalations in other operations within an organization to maximize the implementation of green supply chain management a change which will have firms align their operations with future goals.

According to Pun (2006), environmental concern has forced most firms to comply with regulations of the environment in which they operate which is in line with ISO 1400 series and others where Kenya plays a role. Regulatory standards today have led to raw material conservation as well as compliance to sustainable development in Kenya (GOK, 2006). Kenya has embraced a few green economy-related methodologies and approaches, which incorporate executing sustainable tariffs in 2008, adopting a reasonable regular asset use in the adopted 2010 Constitution and aligning the green economy in its report of the Second Medium Term (2013-2017) (UNEP, 2014). However there has been logical inconsistency in the connection between company's budgetary execution and environmental management as a result of corporate environmental practices which have added to both positive and negative economic execution.

2.5 Challenges in Adopting Green Supply Chain Management Practices

Various challenges have been related to the process on embracing GSCM and its practices and The Ryder Centre of Supply Chain Management (2008) distinguished three difficulties:

Absence of innovation and effective business procedures to ascertain data; Data Innovation supplements the process of green supply chain by upgrading the assets that are required to help the firm. It likewise will empower more viable arranging, execution and joint effort of supply chain accordingly coming about to reduce resource prerequisite (Aware, 2008). Comparisons between green necessity and lean practices; green requirements share a typical idea on minimization of waste. Efficiency dictates a diminished amount of stock experiencing environmental effect in supply chain. Mollenkopf et al.(2010) explains that lean strategies effect Just In Time (JIT) and overall supply of little cluster sizes, can require expanded transportation, material packaging and controlling hence increase consequently emissions and this contradicts going green approach.

Inability to coordinate the supply chain network efforts. Most firms that execute GSCM omit to coordinate the environment contemplations to the supply chain processes. They are frequently determinable by the urge to go green which is currently a requirement to conform to the environment. Given that this positively affects the environment, the ecological perspectives are

frequently not considered while assessing the business general supply chain performance and rolling out improvements to the supply chain (Money and Wilkerson, 2003).

Wilkerson (2010) further notes challenges that organizations confront while embracing GSCM practices. These include: Standards; organizations need to agree to certain number of guidelines while embracing the idea of GSCM and the vast majority of them think that it's difficult to go along. Such gauges incorporate; ISO 140065, ISO Measures, Environmental Protection Agency, Greenhouse Gas Reporting Rule. For an organization which is recently adopting GSCM practices may think that it's testing on what standard to follow. Secondly awareness is key; making awareness among the supply chain colleagues is a test.

Business development In the future, CSR, and also utilization of restricted capital will be a test to the multi-national supply chains. Established planners will struggle to create business cases since the accepted procedures are shared. With Green awareness that has been developing, there is still a considerable measure individuals need to think about GSCM. For example, sellers should confirm that they have measured their ozone depleting emissions in the greenhouses and have water optimized designs set up and this shows how mindfulness is evolving.

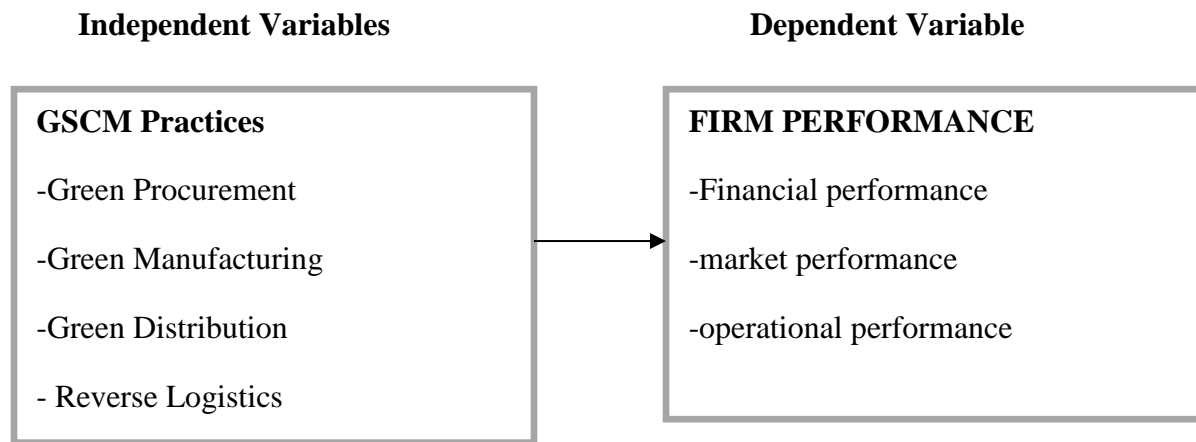
2.6 Summary of Literature Review

In the outline, the idea of GSCM is clear however in Kenya, few studies have been finished. The estimations in the part of GSCM have not been researched widely. The Literature has examined the four practices of GSCM embraced by firms however different firms actualize totally different practices, subsequently there is also absence of generally accepted practices.

The Conceptual Framework in figure 2.1: links the Green supply chain Practices with that of the Firm Performance. In the study, dependent variable is the firm performance while GSCM practices constitute independent variable. Soft drinks industries are directly affected by the GSCM practices in Kenya and worldwide.

In the study, the dependent changeable is the firm performance while GSCM practices are the independent variable. GSCM practices are anticipated to have shock on performance of the company in the soft drink companies in Kenya.

Figure 2.1: Conceptual Framework



Source: Researcher (2017)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter explains the research methods used in conducting the research. Appropriate techniques has been applied to justify how the research design appears, population study, sampling design, and data collection techniques as well as data examination methods.

3.2 Research Design

To achieve this, the research design used a descriptive research approach describing both quantitative and qualitative research designs. This allowed during the research to have first-hand information with optimal control of other variables such as bias information that would interfere with authenticity of the findings (Burns, 2003). The quantitative research design more linear and sequential whereas qualitative whose logic is inductive. It assisted in bringing out the correlation between green supply chain management and soft drink firms in Nairobi, Kenya.

3.3 Target Population

The population of the study was the soft drink and water-manufacturing firms in Nairobi, which are 68 in number (appendix II). A census was conducted since the population is not very large.

3.4 Data Collection

The study used primary data which was gathered by use of a questionnaire (appendix I). The research engaged the participation of personnel from organizations, namely the Quality Assurance personnel or equivalent. The questionnaire is divided into four sections namely: section A – Background information, section B - practices of green supply chain management of the company, section C –the relationship involving green supply chain and section D - challenges of green supply chain management. The questionnaires were distributed through email, “drop-and-pick later” methods.

3.5 Data Analysis

The data gathered was chequered for completion and information collection process. Descriptive statistics was used to analyze objective one and three. Objective two was analyzed using regression analysis and correlation analysis. Below is a data analysis method for each section of the questionnaire.

- I) Section A (General Information) - Descriptive Statistics
- II) Section B (Practices of green supply chain management) - Descriptive Statistics

III) Section C(Relationship between GSCM practices and firm performance) - Inferential Statistics

IV) Section D (Challenges) - Descriptive statistics

The researcher used the Statistical package for social sciences (SPSS) software. The following regression equation was used, $S = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + e$. Where: S= Supply chain performance; a= S-intercept, b1, b2, b3, and b4, make up the regression coefficients for each respective variable; e is the error term x1= Green Procurement; x2= Eco-design, Packaging; x3 = Waste Management Systems and x4 = Reverse Logistics;

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter presents data analysis, presentation of study findings and their discussions according to the objectives of the study. Expressive as well as inferential statistics have been employed to explain the research outcomes. Quantitative data was analyzed by means of expressive statistics like mean and standard deviation and presented in tables, graphs and charts. The Content analysis technique was applied to examine qualitative data.

The research objectives were:

- iv. To establish the extent to which green supply chain management practices are implemented by soft drink firms in Nairobi Kenya.
- v. To determine the relationship between GSCM practices and performance of soft drink firms in Kenya.
- vi. To determine the challenges faced by firms in implementing green supply chain practices

4.2 Response Rate

The study targeted a population of 68 respondents. Out of these 65 responded giving a reaction rate of 95.6%. Base on Mugenda and Mugenda (2003), a reaction rate of 50% is sufficient for scrutiny as well as reporting; a rate of 60% is good and a reaction rate of 70% and over is superb.

4.3 Background Information

This sub-section critically analyses on respondent's information in the background; mainly it includes gender distribution, education level, period worked with the firm, period of operation, and employees' ownership of the firm practices

4.3.1 Gender Distribution

The researcher needed to find out how the respondents were distributed according to gender. After the analysis was done, the results are shown in table 4.1

Table 4.1: Respondents' Gender

Gender	Frequency	Percentage
Male	35	53.85
Female	30	46.15
Total	65	100

Source: Research Data (2017)

The results in table 4.3.1 shows that majority 53.85% of the respondents were male and female respondents accounted for 46.15%. This is an indicator that both gender was adequately represented.

4.3.2: Respondents Level of Education

The researcher needed to know the respondents education level. After the analysis was done, the results are shown in table 4.2

Table 4.2: Respondents Level of Education

Respondents' Education Level

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Diploma	10	15.4	15.4	15.4
Post Graduate Diploma	8	12.3	12.3	27.7
Bachelor's Degree	36	55.4	55.4	83.1
Master's Degree	11	16.9	16.9	100.0
Total	65	100.0	100.0	

Source: Research Data (2017)

The results in Table 4.2 show that majority (55.4%) of the respondents had attained a Bachelor's Degree level of education, 16.9% had Master's Degree, 12.3 % had Post Graduate Diploma and 15.4% had Diploma certificate. The results also shows that a big of the respondents had attained a

Bachelor's Degree level of education and above as shown by the cumulative frequency of 78.8%. This shows that the respondents were highly learned hence best research instruments.

4.3.3 Work Experience

The researcher wanted to know the length of period that the respondents had worked in the industry. After the analysis was done the results are shown in table 4.3

Table 4.3: Work Experience

Period Of Service	Frequency	Percentage
10 Years and above	20	30.77
6 to 9 years	24	36.92
2 to 5 years	14	21.54
less than 2 years	7	10.77
Total	65	100

Source: Research Data (2017)

The results in table 4.3 show that majority (36.92%) of the respondents had a work experience of between 6 to 9 years, 30.77% had worked for 10 years and above, 21.54 % worked between 2 and 5 years and 10.77% for less than 2 years. This shows that a number of the respondents served in the organization for a substantial time period hence capable of giving relevant information. The study also established that all the respondents appreciate the role of green supply chain management practices.

4.4 Extent of implementation of Green Supply Chain Management Practices

The first research objective was to establish the degree to which green supply chain management practices are implemented by soft drink firms in Nairobi Kenya. The respondents were therefore presented with statements to rate on a liker scale (1) Very large extent (2) large extent (3) Moderate extent (4) Small extent (5) not at all. This is summarized in the table 4.4

Table 4.4 Green supply Chain Management Practices

Green Supply chain management practices	Mean	Standard Deviation
Reverse logistics	4.24	1.23
Green Procurement practices	4.20	0.89
Green Manufacturing Processes	4.14	1.18
Green Distribution Practices	4.07	1.21

Source: Research Data (2017)

(Green supply chain management) include: Reverse logistics, Green Procurement practices, Green, Manufacturing Processes and Green Distribution Practices. The respondents affirm that their companies have implemented green supply chain management practices: Reverse Logistics (M=4.24 SD=1.23), was ranked the highest practice, followed by Green Procurement practices (M=4.20 SD=0.89), then Green Manufacturing Processes (M=4.14 SD=1.18) came third and finally Green Distribution Practices (M= 4.07 SD=1.21).

The finding concur with the findings of Smith (2005) who observe that reverse logistics help an organization to distinguish issue related areas and bring about examples of imperfections, in this way decreasing the quantity of returned commodities. Wisner and Stanley (2007) also affirmed that Reverse Logistics Practices incorporates regular stock, handling returned stock, restock, salvages and, inadequate stock. In addition Sarkis and Cordeiro (2001) align that a green distribution practice is made up of green manufacturing, green packing and green distribution. Packaging complements, size, shape and how the materials used in the process affect the distribution. Carter et al. (1998) talks about green practices as a specific end goal to encourage reusing assets, the buying division ought to participate in each action of supply chain network and should more solidly buy reused materials in order to lessen the utilization of raw materials.

4.5 Relationship Between GSCM practices and Firm Performance

The second study objective was to find out the correlation among GSCM practices and performance of soft drink firms in Kenya. The respondents were therefore presented with statements to rate on a liker scale (1) Very large extent (2) large extent (3) Moderate extent (4) Small extent (5) not at all. This is summarized in the table 4.5

Table 4.5: Relationship between GSCM practices and Firm Performance

Green Supply chain management practices	Mean	Standard Deviation
Reverse logistics	3.89	1.48
Green Procurement practices	3.98	1.27
Green Manufacturing Processes	4.41	0.86
Green Distribution Practices	4.29	1.04

The respondents indicated that Reverse logistics has led to minimized time taken in conversion and practices enhanced disposal methods (M= 3.89 SD= 1.48). The results also indicate that green procurement has resulted to increase in profits, increase in market share and finally increase in dividend prices. (M= 3.98 SD= 1.27). Green manufacturing process has contribute to increased production efficiency, reduced environmental expenses as well as lower raw material cost (M= 4.41 SD= 0.86). It was also established that green distribution has resulted to lower transport costs, improved company public image as well as improve customer loyalty (M= 4.29 SD= (M= 3.98 SD= 1.27))

These findings are in line with the studies by Malaba P, N. Ogolla and Mburu D.K. (2014) who provide insights on influence of GSCM practices for the current and future supply chain performance measurements. They talk about issues that are directly related to management. Choi and Zhang (2011) linked the relationship between firm performance and green practice. They concluded that a few organizations found a match that identified with environmental prerequisites and how firms maintained their profitability. Otago (2009) clearly asserts in his study that green supply chain management helps curb environmental effects of the industries and its activities leading to sustained performance on the environment.

Regression Analysis

The performed tested the data using a multiple regression analysis so as to find out the correlation between independent variables and dependent variable. The statistical package for social sciences (SPSS) was applied 17.0 to code; enter as well as calculating the measurements of the multiple regressions for the study. The independent variables and dependent variable (Financial firm performance).

Table 4.6: Regression Coefficient Table

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	Z	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.532	1.010		6.160	.000	4.215	8.228
	green procurement	.694	.152	3.562	2.501	.002	.550	.055
	green manufacturing	.712	.116	5.035	2.241	.003	.383	.078
	green distribution	.693	.112	1.945	3.961	.000	.184	.259
	reverse logistics	.601	.109	2.678	4.006	.004	.476	.043

a. Firm Performance

Source: Research Data (2017)

As per the SPSS generated table above, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$) becomes= **$0.532+0.694 X_1+ 0.71X_2+ 0.693 X_3 + 0.601X_4$**

Where Y= Firm Performance

X₁= Green Procurement Practices

X₂= Green Manufacturing Practices

X₃= Green Distribution Practices

X₄= Reverse Logistics

Base on the regression equation reputable, taking all the independent variables into constant at zero, firm performance of soft drinks manufacturing firms in Kenya will be 53.2%. The data findings analyzed also showed that all the independent variables had a positive and significant effect on firm performance of soft drinks manufacturing firms in Kenya as indicated by beta values. The interaction ($p < 0.05$) are all significant with green procurement practices (3.562, $p < 0.05$), green manufacturing practices (5.035, $p < 0.05$), green distribution practices (1.945, $p < 0.05$) and reverse logistics practices ($t = 2.678$, $p < 0.05$). Green manufacturing practices was found to be the most (0.712%) significant among the four variables studied.

Table 4.1: Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.646 ^a	.720	.891	1.131	.120	4.150	4	64	.003

a. Predictors: (Constant), green procurement, green manufacturing, green distribution, reverse logistics

Source: Research Data (2017)

The goodness of fit shown by the regression summary model in table 4.7 had a value of 0.720. R square is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variables at 72% of firm performance of soft drinks manufacturing firms in Kenya due to changes in green procurement, green manufacturing, green distribution and reverse logistics at 95% confidence interval. This therefore means that factors not indicated in the model contribute 28% of firm performance of soft drinks manufacturing firms in Kenya and leaves a room for further research of soft drinks manufacturing firms in Kenya.

Table 4.8: Analysis of Variance (ANOVA)

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.228	4	5.307	14.150	.003 ^a
	Residual	156.031	60	1.279		
	Total	177.260	64	6.586		

a. Predictors: (Constant), green procurement, green manufacturing, green distribution, reverse logistics

b. Firm Performance

The importance (p) value is 0.3% which is below 0.5% thus the model is statistically important in envisaging the way a number of features influence performance of soft drinks firms in Kenya. The F critical (Mean square) at 5% level of significance is 6.586. Since F calculated (14.150) is greater than the F critical (value = 6.586), this shows that the overall model is important. The correlation ($p < 0.05$) indicated a linear correlation between the variables under the study means there was 95% chance that the correlation between the variables was true.

4.6 Challenges in Implementing Green Supply Chain Practices.

The third research objective was to find out the limitations encountered by companies in accomplishing green supply chain practices. The findings are shown in Table 4.9.

Table 4.9: Challenges in Implementing Green Supply Chain Practices

Statement	M	SD
Lack of effective communication among the supply chain team	4.44	1.02
Lack of tools and techniques for measuring GSCM performance	4.38	1.14
Strict government rules and regulations	4.36	1.01
Suppliers or vendors are reluctant to adopt GSCM practices	4.33	0.79
Trade-off amid of green requirements and lean practices	4.33	0.85
Lack of commitment from the top management	4.29	0.96
Difficulties in complying with the organizational standards	4.18	1.28
Lack of appropriate technology needed to implement GSCM practices	4.16	1.19
Inability to integrate supply chain optimization efforts with green supply chain efforts	4.09	1.16
Lack of awareness among the employees, retailers and suppliers	3.99	1.19

Key: **M** – Mean; **SD** – Standard Deviation

Source: Survey Data (2017)

The results in Table 4.8 indicate that lack of effective communication among the supply chain team (M=4.44, SD=1.02), Lack of tools and techniques for measuring GSCM performance (M=4.38, SD=1.14), Strict government rules and regulations (M=4.36, SD=1.16) and Suppliers or vendors are reluctant to adopt GSCM practices (M=4.33, SD=0.79) and Trade-off between green requirements and lean practices (M=4.33, SD=0.85) challenge the implementation of green supply chains practices to a very great extent. These were followed by Lack of commitment from the top management (M=4.29, SD=0.96), Difficulties in complying with the organizational standards (M=4.18, SD=1.28), Lack of appropriate technology needed to implement GSCM practices (M=4.16, SD=1.19), Disappointment to integrate supply chain optimization efforts with green supply chain efforts (M=4.09, SD=1.16) and Lack of awareness among the employees, retailers and suppliers (M=3.99, SD=1.19).

These findings concur with the findings of Wilkerson (2010) who notes challenges that organizations confront while embracing GSCM practices. These include: Standards; organizations need to agree to certain number of guidelines while embracing the idea of GSCM and the vast

majority of them think that it's difficult to go along. Such gauges incorporate; ISO 140065, ISO Measures, Environmental Protection Agency, Greenhouse Gas Reporting Rule. For an organization which is recently adopting GSCM practices may think that it's testing on what standard to follow. Secondly, awareness is key; making awareness among the supply chain colleagues is a test.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter gives the explanation of the study outcomes, its conclusion and its recommendations base on the objectives of the study.

5.2 Summary Of the Findings

Different practices that have been researched on the study gave an overview of how the firms have fared in relation to green supply chain management. The findings include:

5.2.1 Green Supply Chain Management Practices

The study established that procuring products that are made using recycled packages, purchasing materials that contain green attributes and purchasing energy saving equipment concerning green procurement practices influence GSCM practices to a very large extent. It also points out that using paperless methods to order materials, evaluating suppliers on particular atmospheric criterion and requiring suppliers to have ISO influence green supply chain management practices to a large extent. The study also established that by ensuring suppliers meet their environmental objectives influences green supply chain management practices to a moderate extent.

The study revealed that encouraging reuse of products and recycled materials, using Life Cycle Assessment to appraise ecological load and through miunitizing the use of materials in packaging replacing hazardous substances which are environmentally friendly on green manufacturing practices influences green supply chain management practices to a very large extent. Also, it was established that by producing products that have packages which can be recycled, ensuring products that have recyclable contents and Control power consumption in the products influences green supply chain management practices to a moderate extent.

The study points out that promoting recycling and reuse programs among the employees and use of alternative fuels and by reducing the size of packaging through green distribution practices influences green supply chain management practices to a great extent. The study also found that cooperating with suppliers to standardize packaging green supply chain management practices to a moderate extent.

The study established that redistribution, screening defective merchandise, recalling salvage, re-stocking and processing returned merchandise through reverse logistics influences green supply chain management practices to a very great extent. It was also established that seasonal inventory influences green supply chain management practices to a moderate extent.

5.2.2 Relationship between GSCM and Performance

The study established to a very large extent that green manufacturing practices leads to increased production efficiency to Green distribution practices reduces to emissions during transport, green manufacturing practices leads to lower raw material cost, green manufacturing practices leads to reduced environmental expenses, green distribution practices improve customer loyalty to a very large extent relate to performance. Also, to a large extent green procurement practices leads to increase in dividend prices and green distribution practices improve company public image to a large extent. The study further established that reverse logistics practices enhance disposal methods, green procurement practices leads to increase in market share, green procurement practices leads to increase in profits relate to performance. Finally, it was established that reverse logistics practices minimize time taken in conversion relate to performance to a reasonable degree.

5.2.3 Challenges in Implementing Green Supply Chain Practices

The study revealed that lack of effective communication among the supply chain team, Lack of tools and techniques for measuring GSCM performance, Strict government rules and regulations, Suppliers or vendors are reluctant to adopt GSCM practices and Trade-off amid green prerequisites as well as slant practices challenges the successful adoption of green supply chains practices to a very great extent. It was also pointed that lack of commitment from the top management, Difficulties in complying with the organizational standards influences, Lack of appropriate technology needed to implement GSCM practices also challenges the implementation of green supply chains practices to a very great extent. The study further found out that disappointment to incorporate supply chain accelerators slow hard work with green supply chain efforts and Lack of consciousness among employees, retailers and suppliers challenges implementation of green supply chains practices to a moderate extent.

5.3 Conclusion

This study concludes that Soft Drink firms have GSCM practices that enables the firms to reduce environmental degradation by minimizing wastage, decreasing the use of harmful materials,

recycling products and their wastage and limit the pollution through cleaner production. GSCM introduces reverse logistics approach that assists Soft Drinks firms to recycle the products after consumption as result overall consumption of raw material decrease which provide solution to the scarcity of resources as well as to the degradation of environment.

GSCM helps to improve brand image as well as company's image and increase the profitability. The study also concludes that green supply chain seeks to capitalize on the economic benefits by decreasing consumption of resources, energy, and emission of pollutants to create socially responsible enterprises. Accomplishment of GSCM practices improves both environmental and fiscal performance of a firm.

5.4 Recommendations

The study suggests that in industrialized, the firms may employ "green" by a number of ways to decrease energy and resource expenditure, use again plus recycling are very important. The study also recommends that practices entails reduction of consumed energy, reuse, recycling and using biodegradable and environmental friendly materials, minimizing harmful emissions, and minimizing or eliminating waste can be used. Green supply chain may be increased through the government green procurement, corporate social accountability, and sustainable practices. Firms need to adopt collaborative practices with their suppliers. Collaborative efforts between buying firms and suppliers are needed to improve performance.

5.5 Limitations of the Study

Some of the respondents approaches were either reluctant or did not agree to give information due to company policies. Time and resources were limited to the researcher for instance the questionnaires were distributed by means of "drop-and-pick" later method that proved to be very time consuming and used a lot of resources.

5.6 Suggestions for Further Studies

This research examined the position of green supply management practices and supply chain performance in the soft drink manufacturing firms in Kenya. The study focused on registered firms in Nairobi Kenya. Therefore, generalizations cannot adequately be relied on upon based on their nature of ownership and resources they possess. According to this information among others, it is thus suggested that a narrow based study should be done for instance on a single soft drink firm.

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APPENDICES

Appendix I: Research Questionnaire

This research questionnaire has been designed for the purposes of collecting data on GSCM and Firm Performance the Soft drink firms in Kenya. The information is for academic purposes only.

Section A: Background Information

1. Gender: Male Female
2. What is your level of education?
 Diploma Bachelor Degree
 Master' Degree Post-graduate Diploma
3. How long have you worked in the current station?
 Less than 2 years 2 – 5 years
 6– 9 years 10 and above
4. As an individual, do you appreciate the role of Green Supply Chain Management practices?
 Yes No

SECTION B: PRACTICES OF GREEN SUPPLY CHAIN MANAGEMENT

Below is a list of practices of Green Supply Chain Management. Please tick appropriately the extent to which each of them is practiced in your company.

(1)Very Large Extent (2) Large Extent (3) Moderate (4) Small Extent (5) not at all

Green procurement practices	1	2	3	4	5
Ensure suppliers meet their environmental objectives					
Require suppliers to have ISO 14001					
Purchasing materials that contain green attributes					
Purchasing energy saving equipment					
Evaluate suppliers on specific environmental criteria					

Use paperless methods to order materials					
Procure products that are made using recycled packages					
Green manufacturing practices					
Produce products that have packages which can be recycled					
Control power consumption in the products					
Use Life Cycle Assessment to evaluate environmental load					
Replacing hazardous substances with that are environmentally friendly					
Ensure products have recyclable contents					
Minimize the use of materials in packaging					
Encourage reuse of products and recycled materials					
Green distribution practices					
Promoting recycling and reuse programs among the employees					
Use of alternative fuels					
Reducing the size of packaging					
Cooperating with suppliers to standardize packaging					
Reverse Logistics					
Seasonal inventory					
Processing returned merchandise					
Restocking					
Recalling salvage					
Screening defective merchandise					
Redistribution					

Section C: Relationship between Green Supply Chain Management Practices and Firm Performance

Please tick appropriately how you rate performance of your firm with regards to the parameters listed.

(1)Very large extent (2) large extent (3) Moderate extent (4) Small extent (5) not at all

Impact		1	2	3	4	5
Green Procurement Practices	Increase profits					
	Increase market share					
	Increase dividend Prices					
Green Manufacturing Practices	Increased production efficiency					
	Reduce environmental expenses					
	Lower raw material cost					
Green Distribution Practices	Transport costs					
	Improve company public image					
	Improve customer loyalty					
Reverse Logistics Practices	Time taken in conversion					
	Costs incurred in Disposal					

Section D: Challenges of Green Supply Chain Management

Identify the extent to which the following challenges faced when adopting Green Supply Chain Management practices.

(1)Very large extent (2) large extent (3) Moderate extent (4) Small extent (5) not at all

CHALLENGES	1	2	3	4	5
Lack of appropriate technology needed to implement GSCM practices					
Lack of awareness among the employees, retailers and suppliers					
Lack of tools and techniques for measuring GSCM performance					
Suppliers or vendors are reluctant to adopt GSCM practices					
Difficulties in complying With the organizational standards					
Lack of commitment from the top management					
Poor planning of implementation of the sustainability program					
Lack of effective communication among the supply chain team					
Failure to integrate supply chain optimization efforts with green supply chain efforts					
Strict government rules and regulations					
Tradeoff between green requirements and lean practices					

Appendix II: List of Soft drink and water firms in Nairobi, Kenya

BRAVA FOOD INDUSTRIES LIMITED	MILLY FRUITS PROCESSORS SOFT DRINKS/JUICES
ANSPAR BEVERAGES LTD	HIGHLANDS MIN. WATER MIN. WATER/JUICES
SOFTA BOTTLING COMPANY LTD, NAIROBI	CROWN FOODS MIN. WATER/JUICES
COCA-COLA BOTTLING CO OF NAIROBI LTD	KABAZI CANNERS MINERAL WATER
FRESH &JUICI LIMITED	JETLAK FOODS LTD JUICES
THE KILIMANJARO MINERAL WATER/JUICE	EXCEL CHEMICALS MINERAL WATER/JUICE
KEVIAN KENYA LTD MINERAL WATER/JUICE	RAGOS TRADING CO. MINERAL WATER/JUICE
VILCOS FOODS LTD MINERAL WATER/JUICE	MIRITINI KENYA LTD JUICES
OASIS MINERAL WATER CO LTD	ANNUM TRADING CO. JUICES/MINERAL WATER
HIGHLANDS MINERAL WATER CO LTD-DEPOT	AQUAMIST MINERAL WATER
FRESH SQUEEZE LTD	MOUNTAIN SPRINGS MIN. WATER MINERAL WATER
TWIN OAKS LTD JUICES	KENMAL ENTERPRISES MINERAL WATER
CIRIO DELMONTE LTD JUICES	SEVEN SEES INVESTMENT MINERAL WATER
VILCOS FOODS LTD	KERIO WATER CO. MINERAL WATER
RAZCO LIMITED JUICES	AVODALE WATER CO. MINERAL WATER
BEVERAGE SERVICES	LITZAN ENTERPRISES MINERAL WATER
JETLAK FOODS LTD	SAMMIC ENTERPRISES MINERAL WATER
TWIN OAKS LTD	STARPLAST LTD MINERAL WATER
CIRIO DELMONTE LTD	KENYA NUT CO. LTD MINERAL WATER
CROWN FOODS	PIONEER FOODS MINERAL FOODS
GRANGE PARK LTD WATER	TEN OUT OF TEN MINERAL WATER
BLUEWAVE CO. LTD	KHETIA DRAPERS MINERAL WATER
CARTUBOX INDU. (E.A) LTD WATER	PEARL INDUSTRIES MINERAL WATER
KENYA ORCHARDS LTD WATER	RIDGEWAYS SPRINGS MINERAL WATER
ABERDARES SPRING WATER	LONGVIEW LTD MINERAL WATER
NAIROBI BOTTLERS SOFT DRINKS	WORLD TRADE MINERAL WATER
EQUATOR BOTTLERS SOFT DRINKS	ALKA CLEAR WATER MINERAL WATER
MT.KENYA BOTTLERS SOFT DRINKS	PRIME WATERS MINERAL WATER
BEVERAGE SERVICES SOFT DRINKS	TOP KRISTOL (K) LTD MINERAL WATER
KENSIL LTD MINERAL WATER	AFRICAN SAFARI CLUB MINERAL WATER
SUNLITHO PLUS MINERAL WATER	CLEARLY KENYAN MINERAL WATER
PEARLY WATERS MINERAL WATER	KOMAX INVESTMENT MINERAL WATER
NAIROBI MINERAL WATER MINERAL WATER	SHEENA FOOD PRODUCTS MINERAL WATER

Sources: Kenya Revenue Authority (2011)

Appendix III: Data Collection Letter


UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE: 6/12/17

TO WHOM IT MAY CONCERN

The bearer of this letter FELIX GWDA MARIARO
Registration No. D61/77751/2015

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


PATRICK NYABUTO
SENIOR ADMINISTRATIVE ASSISTANT
SCHOOL OF BUSINESS


UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
06 DEC 2017
30197 - 00100, NAIROBI

Appendix IV: Data Analysis

Green Procurement Practices

Statement	M	SD
Procure products that are made using recycled packages	4.40	0.67
Purchasing materials that contain green attributes	4.29	0.85
Purchasing energy saving equipment	4.26	0.71
Use paperless methods to order materials	4.24	0.77
Evaluate suppliers on specific environmental criteria	4.16	1.13
Require suppliers to have ISO 14001	4.14	0.89
Ensure suppliers meet their environmental objectives	3.90	1.22

Key: M – Mean; SD – Standard Deviation

Source: Research Data (2017)

Green Manufacturing Practices

Statement	M	SD
Encourage reuse of products and recycled materials	4.46	0.64
Use Life Cycle Assessment to evaluate environmental load	4.23	1.20
Minimize the use of materials in packaging	4.14	1.42
Replacing hazardous substances with that are environmentally friendly	4.04	1.34
Ensure products have recyclable contents	3.98	1.14
Produce products that have packages which can be recycled	3.98	1.18
Control power consumption in the products	3.76	1.31

Key: M – Mean; SD – Standard Deviation

Source: Research Data (2017)

Green Distribution Practices

Statement	M	SD
Promoting recycling and reuse programs among the employees	4.29	1.11
Use of alternative fuels	4.28	0.90
Reducing the size of packaging	4.05	1.18
Cooperating with suppliers to standardize packaging	3.66	1.65

Key: **M** – Mean; **SD** – Standard Deviation

Source: ResearchData (2017)

Reverse Logistics

Statement	M	SD
Redistribution	4.60	0.77
Screening defective merchandise	4.30	1.26
Recalling salvage	4.25	1.22
Processing returned merchandise	4.18	1.67
Restocking	4.13	1.22
Seasonal inventory	3.95	1.24

Key: **M** – Mean; **SD** – Standard Deviation

Source: Research Data (2017)

Relationship between GSCM and Performance

Statement	M	SD
Green procurement practices leads to increase in profits	3.81	1.20
Green procurement practices leads to increase in market share	3.88	1.27
Green procurement practices leads to increase in dividend prices	4.23	1.33
Green manufacturing prices leads to increased production efficiency	4.64	0.64
Green manufacturing prices leads to reduced environmental expenses	4.25	1.19
Green manufacturing prices leads to lower raw material cost	4.33	0.76
Green distribution practices leads to lower transport costs	4.46	0.84
Green distribution practices improve company public image	4.16	0.99
Green distribution practices improve customer loyalty	4.25	1.28
Reverse logistics practices minimize time taken in conversion	3.76	1.51

Reverse logistics practices enhance disposal methods	4.01	1.44
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Key: **M** – Mean; **SD** – Standard Deviation

Source: Research Data (2017)