ASSESSING THE PRACTICE OF GREEN PROCUREMENT IN COCA-COLA COMPANY LIMITED

By

Louisa Amankwah

(M.Sc. Procurement Management)

A thesis submitted to the Department of Construction Technology and Management, Kwame Nkrumah University of Science and Technology, Kumasi in partial fulfilment of the requirements for the award degree of

MASTER OF SCIENCE IN PROCUREMENT MANAGEMENT

November, 2019

DECLARATION

I hereby declare that this submission is my own work towards the MSc Procurement Management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

LOUISA AMANKWAH (PG5061018) ……. …….

Student's Name & ID Signature Date

Certified by:

PROFESSOR JOSHUA AYARKWA ……. …….

Supervisor's Name Signature Date

Certified by:

PROFESSOR BERNARD K. BAIDEN ……. ……

Head of Department's Name Signature Date

ABSTRACT

The prominence of green sourcing is driven by various key factors being the increasing corrosion of the environment, reduction of raw materials, neglected waste sites and the rise in levels of environmental pollution. There are several studies on impact of green purchasing to supplier's performance and involvement in the green strategies by companies and found that the link between GP and supplier performance is supported by green supplier development. However, these studies are predominantly in developed countries therefore, the current study seeks to assess green procurement practices in Coca-Cola Company Limited. This study uses survey research design and a quantitative research approach. The target population for this study was all employers in procurement department of Coca-Cola Company limited. In the study, the researcher adopted random sampling technique in administrating the questionnaires. This was analysed using Statistical Package for Social Sciences (SPSS) software and MS excel. The study revealed that green procurement plays a very important role at the establishment by way of reduction of waste procurement, reduces lead-time and cycle time. It further revealed that, green procurement has generated knowledge of the environmental impacts on products and services, from the responses of the respondents. Also, there is little awareness of the presence of green procurement policies in the organization which requires further management attention. It can be concluded based on the findings that Coca-Cola has not really made any great impact or significant improvement embracing the sustainability of Green Procurement into consideration. Also, Coca-Cola take Green procurement more seriously and invest more into it, it will help bring out the potential challenges existing in its practice and work towards helping improve its sustainability.

KEYWORDS

Green sourcing, Environmental pollution, Supplier performance, Green strategies, Sustainability

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

GP	-	Green Procurement
SPSS	-	Statistical Package for Social Sciences
EPA	-	Environmental Protective Agency
ISO	-	International Organization for Standardization
LCA	-	Life Cycle Assessment
REPA	-	Resource and Environmental Profile Analysis
EMS	-	Environmental Management Systems
EPTA	-	Expanded Programme of Technical Assistance

ACKNOWLEDGEMENT

I would like to thank God Almighty and all the people who helped me throughout this project work. I deem it great honor to acknowledge Prof. Joshua Ayarkwa my Supervisor who was always available to see me and for his guidance, patience and encouragement throughout this work I say God Bless you. Without his excellent and broad background in the subject area of the research topic in particular, this work would not have been a success. I am very grateful to the Management and Staff of Coca-Cola Company Ltd who took time off their busy schedules help meet me as and when I call on them and also took time off to answer my questionnaires. I would also like to extend my compliments and profound gratitude to my family and friends for their prayers, undertanding and financial support throughout my stay in school. I would not have made it this far without you all and we say God richly Bless you all.

DEDICATION

This work is dedicated to my dear and wonderful family. Your presence and smiles exude new strength to keep me going when I feel like giving up.

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Background of the Study

In recent times, businesses all over the globe have come to the realization of how important issues related to the environment does influence their business operations. The society within which we live have become more conscious on its environmental obligations especially corporate entities as a result of enactment of various legislatures relating to sustainable environmental management. Zhu, et al, (2009).

This is in response to the negative environmental impacts on the lives of citizens, which became more visible in the 1970s. New initiatives were taken in the regulation of the organizations with the focus on reducing emissions. To curtail the issues authorities set limits related to emissions known as the filter strategy which resulted in the implementation of an end pipe solution to the problem. However, Russo (2009) opined that, the strategy did not necessarily curtail the problem but rather the problem was transferred from one source to another a typical example, being the movement of wastewater, which ended up as sludge.

Similarly, governments all over the world had by the late 1990s seen the need to combat the serious environmental deterioration and the excessive use of natural resources. This was evident when they started to follow the Danish strategy to promote sustainable procurement policy. From the international level down to the regional level and finally to the national level the term green procurement become a generally accepted term. According to McCrudden (2007), in 1992 when Brazil held the Earth Summit in Rio de Janerio became the turning point on issues related to Environmental Development at the UN Conference.

During the summit a declaration by over one hundred and seventy-eight nations present at the summit was made and adapted which was termed as the "Rio Declaration on Environment and Development". To carry out the agenda and ensure the successful implementation of the declaration an action plan was put in place which was known as the "Agenda 21" which surcharged all countries that signed the declaration to implement policies that are action-oriented and also the need for these governments to improve their own environment through the use of their purchasing power.

Green Procurement is defined as "purchasing products and services that cause minimal adverse environmental impacts. It incorporates human health and environmental concerns into search for the high-quality products and services at competitive prices" (Environmental Protection, 2016). Activities such as reuse, reduction and recycling in the process of purchasing constitute green procurement (Salam, 2008). This concept minimizes environmental impact. It could be also opined that when an organization or entity incorporates issues related to the environment in its purchasing making decision it could also be termed as green procurement. Salam (2008) suggested some typical green procurement program elements including recycled content products, energy efficient products, energy efficient standby power devices and alternative fuel vehicles etc. However, green procurement ensures that businesses protect local environments and economies from the effects of their operations, all the while allowing a business to deliver goods, services and utilities (Semeijn et al., 2013). This means environmentally friendly items were to levied low taxes while additional taxes were to be levied against those uninterested in resource conservation. It must be emphasized that green procurement is rooted in the principle of pollution prevention, which strives to eliminate or to reduce risks to human health and the environment (Houston, 2010).

Considering this, the practice of green procurement by an entity depicts that, that particular entity is committed to ensuring its activities do not have consequences on the environment.

1.2 Problem Statement

Green initiative has elicited interest among scholars in supply chain management. The prominence of green sourcing is driven by various key factors being the increasing corrosion of the environment, reduction of raw materials, neglected waste sites and the rise in levels of environmental pollution. However, as focus shifts to adoption of environmental strategies, there is a need to be in tandem with the business requirements that lead to high profits (Amey et al., 2015). Martha and Houston (2010) noted that the objective of green procurement initiatives is to reduce waste, with a focus on what creates value by taking into consideration the total cost of implementing green procurement strategies. There are several studies on impact of green purchasing to supplier's performance and involvement in the green strategies by companies. (Hollosby & Paulrajac, 2013) found that the link between GP and supplier performance is supported by green supplier development. Caniëls (2013) identifies supplier readiness and customer requirements to be key motivators for suppliers to adopt GP practices. In addition, cooperative relation norms and customer investment enhanced adoption of green procurement practices by large suppliers. These studies however were done in developed countries and therefore there was need to undertake a study on Green Procurement in Coca-Cola Company Limited to determine the extent of concurrence or contradiction with earlier studies. From the foregoing studies, it is evident that concentration has been on green supply chain management practices and not on green procurement practices. Therefore, the current study seeks to assess green procurement practices in Coca-Cola Company Limited.

1.3 Research Questions

1. What is the extent to which green procurement is practiced in Coca-Cola Company Limited, Ghana?
2. What are the factors that affect the implementation of Green procurement practices in Coca-Cola Company Limited, Ghana?
3. What measures can be adopted to improve the implementation of green procurement Coca-Cola Company Limited, Ghana?

1.4 Aim of Research

The aim of this study was to assess the level implementation of green procurement practices in Coca-Cola Company Limited, Ghana.

1.4.1 Objectives of the Research

The objectives of the research were:

1. To identify the extent to which green procurement is practiced in Coca-Cola Company Limited, Ghana.
2. To identify the factors that affect the implementation of Green procurement practices in Coca-Cola Company Limited, Ghana.
3. To identify the measures to improve the implementation of green procurement practices in Coca-Cola Company Limited, Ghana.

1.5 Scope of the Study

The geographical scope of the study was confined within Coca-Cola Company Limited at Accra. This was because procurement was done at this level of the organization. The population of the study were the workers of the company that are involved in green procurement practice and they as well form respondents for the study.

1.6 Brief Methodology

This section of study outlined the methodology used which include the framework, study population, the tools used in collecting data, the techniques and approaches of analysis. It also outlined the methods that were employed and conducted. Literature review from books, academic journals and other resources from the internet were useful for the study. Moreover, data collection and survey were done to gather actual data from Coca Cola Company.

1.7 Research Justification

The research sought to emphasize on the level green procurement taking into consideration the challenges and good measures that will have positive impact on procurement process. The research findings improve the company procurements policies and procedures.

It will also serve as a guide for researhers to further develop the literature on this notion, as it is still a grey area in the procurement activities within the country.

1.8 Significance of the Study

The issue of management of green procurement is of vital importance to the success of Ghanaian manufacturing industries and is one of the serious determinants for the continuity and efficient productivity of a manufacturing industry since the study will help create awareness for the need to incorporate green procurement in their activities.

The study is significant because it is hoped that on the completion, the study will provide further insights into the understanding of green procurement and the best practices in practicing green procurement. Also, the study will further justify the need to strengthen management on the need to control their waste through recycling of used products with the anticipated benefit green procurement. It would also broaden the knowledge base of

the citizenry on issues of green procurement with regards procurement practices in the manufacturing sector of the economy.

1.9 Organization of the thesis

The research was split into five (5) sections.

Chapter one (1) introduced the study, the problem identified, the objectives, the research question, the method to be used in answering the research questions, the reason for the study as well as the importance of the need to conduct such a study. Chapter two (2) reviewed literature on the level green procurement implementation in Coca Cola Company limited, the current state of green procurement and the key factors that impede the successful implementation of green procurements practices in Coca cola Ghana limited. The third chapter outlined the method through which the objectives of the study would be achieved by way of answering the research questions. It entailed the method of data collection, research approach, research design, population, sampling technique and sample size for the study. Chapter four (4) presented the findings of study from the data collection and analysis of the results. The fifth chapter presented the summary, conclusion and gives recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction to literature review

This chapter reviewed the literature on the concept of green procurement practices, some theories that underpin the study, which is much related to the current study. It also examines the associated literature from empirical studies based on the study objectives and goals.

The aim of the literature review is to assist define gaps in literature so that they can be resolved in the present research. The review examines the notion of green procurement practices, the framework, challenges in green procurement practices etc.

2.2 General Perspective on Procurement

Procurement encompasses all activities involved in obtaining material and services and managing their inflow into an organization toward the end user. It includes obtaining manufacturing supplies for an assembly line as well as obtaining paper and pencils for a bank (Hough and Ashley 1992, Zenz and Thompson 1994). Van Weele (1997) defined the term procurement as the whole process of purchasing a product. Every action taken to come to a transaction between a demanding party (i.e. the principal) and supplying party (i.e. the contractor) is part of the procurement process. According to (Zenz & Thompson ,1994) purchasing is the act of buying goods and services and can be categorized into information, negotiation, and settlement. In information perspective buyers identify their needs and evaluate potential sources to fulfill them, gathering information about market conditions, products, and sellers. Individual business partners start to interact with each other and determine prices and availability of goods and services as well as delivery terms. Successful negotiations are usually finalized with a contract. With settlement type of purchasing the terms of the contracts are carried out

and goods and services are transferred in exchange for money or other forms of compensation

2.3 The Concept of Green Procurement

Green procurement can be called purchase of goods and services that have less effect on the environment and human health compared to competing goods or services that serve the same objective' (UN Development Program–UNDP, 2008:11). The Public Administration Journal of Public Administration with other terms such as green procurement, environmentally friendly procurement, green procurement, green procurement and viable procurement (Bolton, 2008). Many distinct instruments have been created to guide humankind towards sustainable development, and one such instrument is green procurement. The notion of green procurements is also in place. In the context of green procurement, the organization seeks to ensure that it's buying, and supply chain operations are sustainable. This means that, while considering economic variables, purchases should have both the smallest environmental impact and the most beneficial social impact (Erdmenger, 2003).

The Circular Economic Action Plan, adopted in December 2015, highlights GPP as one of the measures needed to guarantee a more efficient and effective use of funds. Green procurement defines the practice of incorporating environmental factors into buying strategies, programs and actions (Stigson & Russell, 1989). The idea is based on two pillars, namely the pillar on public procurement and the pillar on the environment. These two pillars were earlier seen as autonomous and have consequently been theorized and conceptualized independently (Nabiswa, 2011). According to (Salam 2008), the advantages of green procurement include natural conservation, since green products are usually manufactured in a way that consumes less natural resources and energy or

utilizes them more sustainably as a result of raw materials acquisition, processing and production of components, transport, use and final disposal. Secondly, green procurement contributes to a decrease in waste because green products are usually intended to reduce the quantity of waste produced.They may, for example, contain recycled material or use less packaging, and the supplier may operate a 'take-back' program. Third, there are cost advantages associated with green procurement. This is because green products consist of natural materials that can be recycled, reused and readily disposed of. As a result, the organization can attain reduced waste disposal expenses, waste treatment expenses and energy costs. In addition, green products usually involve fewer resources to produce and operate so that savings can be made on electricity, water, fuel and other natural resources. Lastly, the author notes that, among other benefits, it reduces the level of dangerous or toxic substances since green products generate reduced concentrations of dangerous and toxic materials in the atmosphere.

2.4 Green Procurements Practices (GPP)

Green procurement practices play a prime role in today's procurement management. According to International Institute for Sustainable Development (2012) green procurement is seen as purchasing the set of products and services that minimize the impacts on environment. Purchasing minimal impact on environment includes two purchasing materials and goods that are recyclable and the green factor throughout the supply chain. In order to assess the sustainability of the supply chain, all links must be evaluated; raw materials, manufacturing, transportation, warehousing, usage and reverse logistics. However, the simpler the supply chain the easier it is to evaluate in terms of sustainability. In production level, green products are usually produced in a way that consumes less resources or more sustainably International Institute for Sustainable development (IISD, 2012). GPP has been supported in several EU policies and strategies,

reflecting its recognized ability to encourage more sustainable use of natural resources, to bring about behavioral adjustments for sustainable consumption and production, and to drive innovation. Public procurement has always served as a policy tool (McCrudden, 2007). Today, it has been called upon to accomplish another important mission: to promote sustainable economic development and to protect environment. Sustainable procurement is closely related to sustainable development. It advocates consumption behaviors that have no or little environmental impact and that are economically sound in the longer run. Green procurement, also known as environmental procurement, eco-procurement or green government procurement, is not a synonym to sustainable procurement. Rather it is a sub-concept referring to the environmental dimension only United Nations Office for Project Services.

2.5 Definition of Environmental (Green) Procurement

Many different tools have been developed to steer humankind towards sustainable development and one such tool is green purchasing/procurement (Erdmenger, 2003a). There is also the concept of sustainable procurement. In sustainable procurement, an organization aims at ensuring that it's purchasing, and supply chain activities are sustainable. This means that, while also taking into consideration financial factors, the purchases should have the lowest environmental as well as the most positive social impact. For example, an organization should also procure from small businesses and local suppliers in order to boost and positively impact the disadvantaged sections of the local economy (UNDP, 2008; Walker, Gough, Bakker, Knight and McBain, 2008). While sustainable procurement encompasses aspects other than environmental ones, this thesis will be focusing on environmental (or green) procurement. UNDP (2008, p.4) defines environmental or green procurement as, "the purchase of products and services which have less impact on the environment and human health compared with competing

products or services that serve the same purpose". However, there are others who would argue that green procurement may also be based, not only on purchasing a green product, but on a green process of procurement. This may be done during the supplier appraisal where a supplier is chosen due to (for example) its environmental accreditation (for example implementing ISO (International Organization for Standardization) 14001 standard), or due to its environmental policy. As this 'green' criterion results in a supplier's increased business, it encourages them to continue incorporating 'greenness' in their processes and even in their products and it also encourages competitors to implement green business processes (New et al., 2000).

2.6 Challenges of Green Procurement

In order to implement green procurement, it is important to identify any challenges or hurdles that are likely to be encountered and determine ways of overcoming them. For example, in green public procurement, if a municipality can identify the criteria for purchasing environmentally friendly products but contracting authorities refuse to accept or use them then the products will be rendered useless (Günther, 2003). One of the challenges of GP is a lack of practical instruments and data. Without easy-to-use instruments and easy-to-understand data, it is unrealistic to expect prosecutors, executives and public servants to embrace the GPP. In the context of the GPP Bhutan initiative, IISD, together with our implementing partners and participating government / public organizations, will develop instruments and data resources for public prosecutors to guarantee that there are practical instruments at our disposal. Another challenge in green procurement is unawareness and/or uncertainty. Many purchasing managers and other purchasing professionals struggle in defining the term "environmentally preferable" and therefore have a difficult time incorporating environmental attributes during their decision making (Emmett and Sood, 2010). Policies are often hard to

enforce owing to legislative limitations, accounting methods that do not take into consideration the distinctive characteristics of green products, bad organization design and bad procurement methods (Williams, Chambers, Hills & Dowson, 2007). Public sector organizations are often restricted by global and domestic procurement legislation when implementing green procurement (Driscoll, et ah, 2010). These laws do not allow purchasers to introduce irrelevant pre-qualifications for agreements (Williams et ah, 2007). The author notes that customers are often concerned that environmental sustainability would be deemed irrelevant in the run-up to 2.3.3 Adopting Green Procurement Qualification Challenges. Moreover, it is difficult to determine what environmental aspects should be considered (thus; those that are most significant) and which ones should not. To combat this, the Life Cycle Assessment (LCA) process was developed which allows for the environmental impacts of a product to be on a unified basis allowing for the comparison of two different products (Erdmenger, 2003b). LCA refers to "the assessment of the environmental impacts of a given product or service throughout its lifespan regarding the raw material production, manufacture, distribution, use and disposal including all intervening transportation steps" (EPTA, 2007 p. 1). It emerged in the USA at the end of the 1960's, where it was then known as Resource and Environmental Profile Analysis (REPA). Since then, the use and interest in LCA has rapidly grown. Today however, only a few LCA reports are available to the public and it can therefore be difficult to retrieve one specific to one's needs (Schmidt & Frydenal, 2003).

Studies have shown that increasing energy efficiency is often more efficient than reducing energy use of inefficient techniques (Gardner & Stern, 2008) and this often involves the purchase of fresh machinery and supplies, but outcomes in significant financial returns. As experience and investment boost overtime, the cost of

environmentally friendly options is likely to drop (Stern, 2007). In other words, the cost of environmentally friendly products is anticipated to reduce with experience and scale. In addition to financial and legal obstacles, bad organizational design, institutional inertia and bad procurement procedures can discourage effective green procurement practices. Scattered and complicated procurement tasks cause unnecessary job as different departments or organisations operate to satisfy the same requirements (Williams et al., 2007). This leads to under-resourced and over-worked teams. Organizations 20 should centralize procurement and have one team to set up procedures, manage contracts and act as a liaison with other agencies. Furthermore, Difficulty in the inclusion of leadership systems is another problem that GP faced.in order for GPP to be efficient, a common and coherent implementation of environmental and social requirements across the board will be needed. In addition, all government agencies must accept the change and adjust to the new procurement technique, which needs dedication and adaptability. Finally, environmental criteria differ greatly among product groups such that some product groups are more inclined to have suitable criteria than others (Parikka-Alhola et al., 2006). According to a study by Kippo-Edlund et al. (2005), environmental criteria were used most commonly with such product groups as food products and beverages, office equipment such as paper and computer machinery, repair services, maintenance services, installation services, and disposal services. This implies that it would be difficult to procure products outside these product groups based on environmental criteria.

2.7 Implementing Green Procurement

When an organization decides to incorporate environmental criteria into its procurement processes, it is difficult to determine how to do it as there are many ways and sources giving information about it. The European Commission (2011) suggests that the organization should start small and work its way up incrementally. For example, starting

with the purchase of office paper, an organization can start by purchasing paper with 10% recycled content and with every purchase cycle increase the percentage in 10%-20% increments until they reach their final goal of 100% recycled content. Also, when determining the environmental criteria used during the procurement process, it should be done such that it does not discriminate against potential bidders. For example, requiring the suppliers to have an environmental certificate that is hardly used and that may be region-specific therefore disallowing international suppliers the opportunity to bid (Palmujokki, Parikka-Alhola & Ekroos, 2010).

Moreover, it is important to ensure that the purchase acquired is of great value. To that effect, the criteria to focus on in terms of the cost of the purchase during the procurement process should be the life-cycle costs (or total cost of ownership). Life-cycle costs include all the costs of the different stages in a product's life-cycle from the production costs to the end-of-life costs. One simplified approach towards identifying the life-cycle costs of a product is to take into account, during the procurement process, the buying price of the product; future additional costs (such as shipment and installation costs); operational costs (includes energy and fuel consumption and maintenance costs); and end-of-life costs expanded programme of technical assistance (EPTA, 2007). However, many purchasing managers find it easier to simply focus on the price of the purchase. They may presume that they are being effective by choosing the cheaper option, but this may unfortunately result in purchasing a product that has poor quality and is more expensive to maintain and dispose. This point is especially more significant when it comes to costs that deal with environmental issues as they tend to be difficult to measure (New et al., 2000).

To determine the possibilities of including environmental aspects as part of a contract, one has to first consider the nature of the content of the contract and the nature of the work that would be carried out based on the contract. In the procurement documents of service contracts, for example, purchasing authorities may ensure that the contract is performed in an environmentally sound mode. For example, authorities may ensure that public transport services use low-emission vehicles (Barth & Fischer, 2003). For EU member states, the Procurement Directives (Directive, 2004) clearly define the sections where and how environmental criteria can be included in the tender documents during a procurement cycle. These sections include; the subject of the contract, the technical specifications of the product/service/work, the supplier selection criteria (see chapter 2.5), the contract award criteria, and the contract performance clause (Clement et al., 2007). The subject of the contract identifies what is to be purchased. If environmental criteria will be considered during the procurement process, Clement et al. (2007) advices that this should be stated in the subject matter. The environmental specifications will be further outlined as part of the technical specifications but stating environmental requirements as part of the subject matter ensures that the process is completely transparent and communicates to potential suppliers that the contracting authority intends on buying "green". For example, a contracting authority may state in their contract that they wish to purchase "energy-efficient computers" or may have a "contract for the supply of recycled paper for writing, printing and copying purposes" (Clement et al., 2007). If the contracting authority is not sure whether the products/services/works that they would like to purchase are on the market or if they are not sure about their quality or price, they may ask suppliers to supply "variants". The use of variants is a useful tool that allows contracting authorities to compare products that meet different sets of technical specifications with the same evaluation criteria, especially if the award

criterion used is the most economically advantageous offer (award criteria other than the price, are taken into consideration such as life-cycle costs). Contracting authorities can use variants by "setting the minimum (non-environmental) requirements of the product/service to be bought, this represents Variant 1 – the "neutral" offer" (Clement et al., 2007); and adding environmental specifications to the minimum requirements in Variant 1, this represents Variant 2 – the "environmental" offer. Offers that meet the minimum requirements are selected and when the bids are opened, the contracting authorities have the opportunity to compare conventional solutions and environmentally friendly ones based on the same set of award criteria (Clement et al., 2007).

Contracts awarded are typically based on the lowest price or the most economically advantageous offer. If the final purchasing decision is solely based on the price of the bids, then there is no opportunity to include environmental criteria. Thus, a contracting authority should ensure that environmental criteria were included in the technical specifications. If the final purchasing decision is based on the most economically advantageous offer, then criteria other than the price are taken into consideration such as quality, environmental characteristics, technical aspects, and maintenance and other after sale prices (Clement et al., 2007). Additionally, after a contract has been made, contract performance clauses are a way of including additional environmental requirements to it. The contracting authority may specify, for example, how the purchases are to be supplied (the packaging used should be recyclable for example) including the method of transport, and to ensuring that the suppliers take back and recycle their packaging (European Commission, 2004). The contract clauses should not be a way of determining which bidder gets the contract (for example having clauses so specific that only few bidders can fulfil it), thus all bidders should be able to follow them (Palmujoki et al., 2010).

2.8 Green Design of Product and Processes

The concept green design can be viewed as environmental conscious design for total life cycle process. Green design deals with design for waste minimization (Srivastva, 2007). The main motivation for green design is that it makes us to understand how this design decisions helps in making a product more environmentally compatible (Navin-Chaindra, 1991). The common approach is to replace a potentially hazardous material or by processing the one which is less problematic, but this approach can sometimes be undesirable and leads to rapid depletion of potentially scarce resource (Graedel, 2002). Hendrickson et al (2001) stated that Green design helps in developing an environmentally benign products and process. According to Hendrickson et al (2001) in manufacturing of new product and process the environmental concerns were neglected. Hazardous wastes are dumped according to their convenience of fashion possible. These problems can be eradicated by incorporating the concept of green into the design process. Green products are generally produced in a manner that consumes fewer natural resources or uses them more sustainably, as with sustainable forestry. They may involve less energy in their manufacture and may consume less energy when being used, and they generally contain fewer hazardous or toxic materials. Green products are also generally designed with the intention of reducing the amount of waste created.

According to Ferrer and Whybark (2001) integrating remanufacturing with internal operations is being the key challenges of Green operations. Green manufacturing and remanufacturing are the very important area within green operations (Srivastva, 2007) that purchasing firms should consider most critical in achieving organizational goals. Remanufacturing is defined as recycling-integrated manufacturing, by Hoshino et al, (1995). According to Hoshino (1995) industries that apply remanufacturing typically include automobiles, electronics and tires. Product recovery refers to the activities

designed to reclaim value from a product at the end of its useful life. These recoveries can be done using the mathematical models by evaluating the resource recovery options (Srivastva, 2007). The techniques for minimum energy and resource consumption for flow systems are based on three fields stated by Srivastva (2007) they are pinch analysis, industrial energy and energy lifecycle analysis. Purchasing function controls the goods and services entering the company, therefore it determines the items and amount of environmental and social capital consumed by business activities. "Reverse logistics" offer a new way of purchasing from reusing and recycling. Purchasing activities is also important in a sense of passing a focal company's own standards onto its suppliers. Many companies are using green purchasing management as an effective approach to implement purchasing decisions in an organizations and this effectively yields good results for most firms (Preuss, 2000). Design for disassembly and recycling aids in achieving organizational objective in green procurement. The parts designed initially should be proposed in manner that it can be easily disassembled or dismantled because each separate part can be easily recycled. This method is more time saving and helps in easy distinguishing of appropriate materials while recycling (Hendrickson et al. 2001).

2.9 The Procurement Function

Veeke and Gunning (1993) presented a framework to put the procurement activities into perspective. The framework describes the public procurement function. The procurement function is more than just the procurement process (Harink 2003). It contains all elements which affect the procurement process, like policies, procedures, methods, government employees and key performance indicators (Harink 2003). Green purchasing refers to a responsible purchasing process that accounts environmental and social consequences. It involves activities that reduce, reuse or recycle materials that express environmental preferences through the supply chain (Chien and Shin, 2007). Green

purchasing seeks to provide high level of quality to ensure economic benefits while continuously decreasing destructive environment and social impacts. Purchasing function controls the goods and services entering the company, therefore it determines the items and amount of environmental and social capital consumed by business activities. "Reverse logistics" offer a new way of purchasing from reusing and recycling. Purchasing activities is also important in a sense of passing a focal company's own standards onto its suppliers. It is argued that CS cannot be achieved if green purchasing is not integrated into it (Preuss, 2000). Many companies are using green purchasing management as an effective approach to implement CS.

2.10 Reasons for Green Purchasing

There are different reasons and approaches for companies to green purchasing. Drumright proposed two types of reasons for companies' engagement in green purchasing (Sarkis, 2006): Green purchasing is applied as a deliberate outcome of articulated strategies of corporate socially responsible behavior. This means that if a company takes corporate social responsibility, it normally starts green purchasing programs. This is because of the environmental and social performances of a company's suppliers can affect greatly its own performance and reputation (Bacallan, 2000). Also, suppliers' information on environmental and social performances is necessary for a company to conduct a life cycle assessment. Green purchasing is motivated by business reasons. Companies either see green purchasing as opportune or out of external restraints. Studies show potential competitive advantage firms can create though the creation of a sustainable supply chain (Markley and Lenita, 2007). Green purchasing ensures environmental and social friendly product and services in a focal company while affects its suppliers to work on more environmental and social friendly product and

services. Green purchasing passes on sustainability requirements up to upstream companies to create a green supply chain from material extractions to end-users towards a sustainable environmental and social capital throughout a product life cycle.

2.11 Green Procurement of Product and Processes

According to Salam (2008), Green Procurement is defined as an environmental purchasing which involves activities like reduction, reuse, and recycling of materials in the process of purchasing. Salam (2008) stated that it is a solution for environmentally concerned and economically conservative business. This concept minimizes environmental impact by selection of products. Richard-Nicolas (2007) supported the argument of Salam stating that Green procurement is the purchasing of materials or services which have less impact on environment over the whole life cycle. Green procurement also involves the integration of environmental issues into purchasing decisions based on price, performance and quality. Environmental Protection Priority Chemicals. These program elements help in selecting the product for manufacturing process, but the supplier selection plays a major role in green procurement. According to Zhu, et al. (2007) the paper parts containers should be reused. The emails should be used for placing the order instead of paper (Sarkis, et al. 2003). The change in inputs is an important tool in green manufacturing process. There may be major or minor ingredients or inputs which contribute to production. The changes in minor inputs substantially reduce the environmental impacts.

2.12 Green Manufacturing

According to Atlas and Florida green manufacturing is defined as the production processes which use inputs with relatively low environmental impacts, and they are highly efficient and generate little or no waste or pollution. Johansson and Winroth

(2009) stated that Green manufacturing aims for continuous improvements of industrial processes and products to reduce or prevent pollution to air, water and land. He also suggested that by these improvements, there is possibility of minimizing risks to humans and other species. Richards (1994) stated the challenges associated with the Green manufacturing like meeting the customer demands for environmentally sound products, development of recycling schemes, minimizing the materials use, and selecting the materials causing low environment impacts. Atlas and Florida (1998) also stated that Green manufacturing can lead to lower the raw material cost, increase the production efficiency and reduces the environmental and occupational safety expenses. The power consumption can be reduced to greater extent by implementing green manufacturing process. Green manufacturing enhances environmental consciousness through 3 Rs activities (Zhu et. al,2007).

2.13 Green Operations of Product and Processes

According to Eerrer and Whybark (2001) integrating remanufacturing with internal operations is being the key challenges of green operations. green manufacturing and remanufacturing are the very important area within green operations (Srivastva, 2007). The techniques for minimum energy and resource consumption for flow systems are based on three fields stated by Srivastva (2007) they are pinch analysis, industrial energy and energy lifecycle analysis. Remanufacturing is defined as recycling-integrated manufacturing, by Hoshino et al, (1995). according to Hoshino (1995) industries that apply remanufacturing typically include automobiles, electronics and tires. Product recovery refers to the activities designed to reclaim value from a product at the end of its useful life.

2.14 Green Logistics

Jiange (2008) of School of Economics and Management, Zhongyuan University of technology, Zhengzhou, P.R. China, defined Green Logistics as producing and distributing goods in a sustainable way and activities include measuring the environmental impact of different distribution strategies, reduction in energy usage for logistic activities, reducing waste and managing its treatment. According to Zhang and Liu (2009) the concept in developing green logistics should be seen as an interconnected system. They also mention that without the close cooperation of government, public and corporate the complete Green logistic systems are not possible. Zhang and Liu (2009) proposed that green logistic system is not a separate system; it needs to exchange the information and energy with outside world. The system integrates with traffic and transportation, storage and delivery, management and supervision, and information flow Jiange (2008). Green logistics is been practiced by delivering directly to user site, distributing products together rather than in small batches (Ninlawn, et al., 2010).

2.15 Reverse Logistics

The term Reverse logistics defined by Rogers and Tibben-Lembke (1998) is -: 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 disposal. According to Srivastva (2007) reverse logistics, activities differ from those of traditional logistics. Reverse logistics networks have some characteristics related to the coordination of two markets, supply uncertainty, returns disposition decisions, postponement and speculation (srivastva 2007).

2.16 Waste management of Product and Processes

Waste management is an effect-directed approach towards nature because it tries to reduce the landfills and incineration of the waste materials (Shalishali, et al. 2009). The collection, transportation, incineration, composting, recycling and disposal combines to form a solid waste management system model proposed by Caruso et al. (1993). The CCME (1995) has defined the waste management and used materials through hierarchy of actions namely waste reduction, reuse recycling recovery and residual waste management. In the waste reduction process, the concept of waste reduction encourages the residents and businesses to reduce the waste from the source through modified consumer practices and industrial production changes to generate fewer useless by-products. Another waste management hierarchy is Reuse. It is an important method of handling waste management. Reuse promotes the use of something again in its original form for the same or different purpose. Recycling is also used as the process of reprocessing the use material to make a new product through physical, chemical or biological method. The recycling program involves continuous separation, collection and cleaning of recyclable materials and the maintenance of stable markets for the recyclable materials and useful products. Moreover, recovery of processed recyclable material as feedstock of industrial activities or energy from waste. The energy released from this waste is used for generating steam or electricity. Finally, residual waste management is used as a mechanism. This is the long-term storage of solid wastes in landfills or destruction through incineration. According to Srivastva (2007) the pollution must be prevented at the source rather than managing it after generating. Some prevention programs are optimizing the distribution network, choosing the best possible transportation mode for your supply chain, reducing the carton weight and choosing port of entry analysis.

2.17 Green Manufacturing System Model

The concept of green supply chain management system, the activities of green management system and, the tools and methodologies of implementing green system into manufacturing firms were suggested by different researchers and organizations.

Management systems are becoming more popular in the present era with the developments of international standards for both quality management systems ISO9000 (2015) and environmental management systems ISO14001 (2015). According to Bergmiller and McCright, (2009), implementing Environmental Management Systems (EMS) into manufacturing firms is process in which the organization's management identifies the controlled and uncontrolled environmental aspects. EMS further helps to develop targets and plans to achieve both significant and incremental environmental improvements. ISO14001 standard shares many common features with its predecessor ISO 9000. These both standards do not focus on the outcomes such as pollution etc. but focuses on processes in the supply chain. ISO14001 (2015) describes about the basic elements of environmental management systems (EMS). ISO 14001, 2015 Environmental management system specifications (2002) describes that, An EMS integrates environmental management into organizational overall management system by identifying the policies, environmental targets, measurements for producing a regulated environmental performance. A continual improvement cycle is established through this process. According to the study performed by Russo (2001) provides a strong correlation between the green management system and green results. Environmental Protective Agency (EPA) as stated that environmental management system is an effective tool for preventing the environmental pollutions. EPA (2001) also mentioned that the intent of this standard ISO 14001 (2015) is to maintain a systematic management plan which is designed to identify and reduce the environmental impacts from an

organization, products and services. Melnyk, et al. (2003) mentioned in their study on assessing the impact of environmental management systems on corporate and environmental performance the effect environmental management systems have on the implementations of ―environmental options like green waste reducing techniques and operation performance on lean results that is. lead time, quality and cost, later this was supported by Bergmiller and McCright (2009).

Johansson and Winroth (2009) indicated that employee's involvement is a key for developing or implementing the environmental performance within the firm. The Green manufacturing relies on long term thinking because the environmental impacts created by industries have been for many years, so a sudden change will cause more investment on their capital but if a longer time frame is considered it is accountable. According to Atlas and Florida (1998), when a proper organizational approach is established the initial step of choosing options for green manufacturing is making an inventory of operations, inputs used and the wastes generated. The inputs used may be energy, raw materials and water. The waste generated includes off-specification products, solid wastes, inputs returned to their suppliers. They also stated that other non-product outputs are sent to recycling treatment or discharged into the environment. The second step of choosing the option for green manufacturing process is selecting the important non-product output and focusing on the waste streams in the products (Atlas and Florida, 1998). The third step proposed by Atlas and Florida was generating the options to reduce the non-product outputs at their origin. They also categorized these options has product changes, process changes, input changes, increased internal re-use of wastes and better housekeeping. In the next step these options are evaluated for their environmental advantage, technical feasibility and employee accessibility. These evaluations lead to improving in different options, mainly in two different categories which are housekeeping and input changes.

The last step proposed by Atlas and Florida was the rapid implementation of these options.

2.18 Green Packaging

According to Jiange (2008), the sustainable development is majorly influenced by increasing in solid waste, to overcome this problem the green packaging process is practiced which discusses about the whole process of packaging life cycle. According to Ninlawn, et al. (2010) Green packaging can be practiced by using a green packaging material, promoting recycling and reuse programs and cooperate with vendor to standardize the packaging. The system evaluation indicators are used to monitor and control the packaging system (Zhang and Liu, 2009). A lean supply chain is a dynamic ecosystem which adds value to the entire network by working together smoothly and by delivering the products and services according to the customer requirements in a cost-effective manner.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter of study outlines the techniques and analytical tools that were used in the study to achieve the objectives of the study. This chapter discusses the research design, research approach, population of the study, sample size and sampling techniques, data collection and data analysis.

3.2 Research Design

The research design will be outlined to help in structuring and designing this research in order for it to be aligned with the stated objectives of this work. The research design adopted will help in giving the appropriate responses to the questionnaire which governed the study. Also, observations and interviews will be used as confirmation to the answers and facts gathered already from this field of study. Every research can be broadly categorized under any three major types according to its purpose; exploratory, descriptive and explanatory research (Cavana *et al*, 2009). Schindler (2003), gives a similar categorization by stating that research can function as providing data and information for obtaining certain conclusions (reporting), describing and defining a phenomenon (descriptive) and trying to explain a phenomenon (predictive). The study will employ explanatory research to explore the extent of sustainable procurement practices. This research also seeks to explain the relationships found among key variables raised as hypothesis within the theories obtained; hence an explanatory research.

3.3 Research Approach

A mixed method approach was adopted for the study in terms of research approach. According to Blaikie (2009), this approach combines quantitative and qualitative methods and studying a phenomenon. The study adapted this type of approach because, of the belief that it improves the validity and credibility of research findings (Patton, 1990).

3.4 Target Population

A separate collection of entities or objects known to have comparable features is identified as a study population. The study population is a distinct group of entities that can be considered as a population, and all the constituents of that population have unique similarities. The target population for this study is all employers in procurement department of Coca-Cola Company limited.

3.5 Sample Size and Sampling Techniques

Purposive and random sampling techniques were adapted for the study because related works adapted the methods of sampling. Also, these methods suite the research because the researcher knew her targeted respondents from the population and randomly selected all the respondents from the target population to administer questionnaires. The study performs a survey on 30 employees (both staff and managers) from the procurement department. This method has earlier been used by other researchers, such as Mwirigi (2007).

3.6 Data Sources

The researcher sourced information from primary source only. The primary source involved the use of research instrument, i.e. questionnaire. This questionnaire comprised of open-ended questions and closed-ended questions. It also included semi-structured, and structured questions which the researcher self-administered to the respondents at their offices.

3.7 Data Collection

The study relied on primary data that was collected using a self-administered questionnaire and interviews that consist of both open and closed ended questions, using a 5-point Likert scale that elicited specific responses. After responses have been collected from respondents, the researcher then coded and analyzed the result using software such as Statistical Package for Social Sciences (SPSS) software and MS excel.

3.8 Data Analysis

The quantitative aspect of the data was analyzed with the use of descriptive and inferential statistics. In doing so, the data collected was analyzed using mean score, standard deviation and ranked to ease interpretation and understanding. Statistical Package for Social Sciences (SPSS) software and MS excel aided the conduct of the analysis. The researcher also made use of graph, charts, percentages, bar charts, among others for easy interpretation of results.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, the researchers grouped data from the field, analyzed and interpreted them for clearer understanding. The data analyzed here is collected from respondents in the establishment Coca-Cola through the administration of questionnaires. The chapter seeks to present the research findings and analyzes these findings using statistical approaches that fit the purpose of the study. It also interprets the data into more realistic information for further processing in other to arrive at conclusive evidence. This chapter goes ahead to discuss the outcome of the analyzed data gathered from the survey.

4.2 Summary of Actual Data Collected

The above is the summary of questionnaires distributed and retrieved from respondents at Coco-Cola procurement unit. A total of thirty (30) questionnaires were distributed and twenty-seven (27) questionnaires were received representing 90% of the total number respondents. Three (3) questionnaires were left out representing 10%. This means that, the analysis was performed on the twenty-seven questionnaires that were retrieved from respondents.

Table 4.1 Data summary from the establishment

Questionnaires Distributed	Frequency	Percentage (%)
Received	27	90
Remainder	3	10
TOTAL	30	100

Source: Field Survey, 2019

4.3 Demographic Profile of Respondents

The demographic profile of the respondents through the questionnaires administered specifically focused on their sex, age, educational qualification, position and work experience within the organization. The results as presented in Table 4.1 indicate that

37.6% of the respondents were female while a sizeable percentage of 62.4% were male. With regards to the age group of the respondents, only 17.7% of the total respondents were above the age group of 45 and 82.3% where below the group of 45. With regards to the assessment of academic qualifications revealed that participants with PhD degree were 2.1%, Master's degree 13.9%, bachelor's degree 74.8%, HND qualification being 8.2% and other qualifications represents 2.0%. The assessment of position revealed that 32.4% of the total participants were procurement managers, 52% sales managers and 6.6% production managers. About the duration of employment, 63.8% of the respondents had worked in the establishment for a period of less than 5 years and with 34.1% between 6 to 10 years and 22.1% above 10 years. This implies that majority of the respondents have stayed longer in the organization and therefore would have much knowledge about the green procurement practices within the organization. A summary of the demographic profile of respondents is as shown on Table 4.1.

Table 4.2: Demographic Profile of the Respondents

VARIABLE		PERCENT
Sex	Male	62.4
	Female	37.6
Age	18-25 years	3.6
	26-35 years	36.6
	36-45	42.1
	Above 43	17.7
Educational Qualification	Doctorate Degree	2.1
	Master's Degree	13.9
	Bachelor's Degree	74.8
	Higher National Diploma	8.2
	Other Qualification	2.0
Position	Procurement Manager	32.4
	Sales Manager	52.0
	Production Manager	6.6
	Other	9.0
Duration of Employment	Below 5 years	43.8
	6 – 10 years	34.1
	11 - 15 years	22.1

Source: Field Survey, 2019

4.4 Analysis of the Objectives of the Study

On a scale of 1 to 5, where (1) very small extent (2) small extent (3) moderate extent (4) large extent (5) very large extent, the respondents were required to provide data on the extent of green procurement practices implemented by the company. Supplier selection, lean supply, supplier development and e-procurement are the green procurement practices adapted by the company with composite means and standard deviation (m=3.918, std=.914; m=3.954, std=0.8075; m=3.891, std=0.8464 and m=3.844, std=0.86) respectively. The findings concur with results from Carter (2000), who also opined that, these four (4) practices identified improves company performance when interlinked with the supply chain performance of the company. To gain competitive advantage lean supply practice is adapted by the company as one of its procurement practices. Lean practices improve quality and productivity by way of eliminating waste out of all facets of an operation, from the procurement of raw materials to the shipment of finished goods. The company's' adaption of e-procurement has the company in leveraging technology to achieve corporate priorities that have a positive impact to the performance. These findings are like that of Musau (2015) who deduced that technological advancement has been promoted as one way of improving procurement efficiency and effectiveness. Lastly, in terms of procurement practices supplier development was also adapted by Coca-Cola. This is also an important factor in the procurement process as suppliers are key stakeholders in the procurement process of the company and therefore there is the need to develop skills and capabilities of the suppliers to match the requirement(s) of the organization.

4.4.1 Green Procurement Practices in Coca-Cola Company Limited

The foremost objective is to assess the extent to which green procurement is practiced in Coca-Cola Company Limited. Table 4.3 gives a summary of the findings as indicated below.

Table 4.3: The Extent of Green Procurement Practices

Lean supply	**Mean**	**Std dev**	**Ranking**
Avoiding overstocking	4.333	.9034	1st
Appropriate use of transport mode	3.923	.7892	4th
Eliminating delays in delivery	3.909	.8123	3rd
Decreasing defects	3.891	.8237	2nd
Avoiding over processing	3.713	.7089	5th
Composite mean and std deviation	**3.954**	**.8075**	
Supplier Selection			
Green designed products	4.111	.9342	2nd
Energy conservation	4.001	.9053	3rd
Green Materials (recycle, re-use, reduce, re-furbish)	3.988	.8966	5th
Green packaging material	3.881	.8743	6th
Reduction in use of harmful substance	3.819	.8976	4th
Suppliers to have ISO 14001certification	3.713	.9765	1st
Composite mean and std deviation	**3.918**	**.9141**	
Supplier Development	**Mean**	**Std dev**	**Ranking**
Supplier relationship management	4.028	.9123	1st
Supplier investments (financial, machinery, technology)	3.987	.8961	3rd
Supplier visits	3.971	.8735	4th
Frequent communication on green procurement KPI's	3.812	.7899	6th
Supplier trainings	3.675	.7091	5th
Rewards/Awards for improvements	3.870	.8972	2nd
Composite mean and std deviation	**3.891**	**.8464**	
E-Procurement	**Mean**	**Std dev**	**Ranking**
E-sourcing (soliciting of bids)	4.012	.9834	1st
Electronic information exchange with suppliers	3.939	.8941	3rd
E-bidding (reverse auction)	3.910	.9233	2nd
Electronic supplier database	3.876	.8131	4th
E-evaluation of bids	3.712	.8013	5th
E-payment	3.617	.7231	6th
Composite mean and std deviation	**3.844**	**.8564**	

Source: Field Data, 2019

4.4.2 Challenges in Practicing Green Procurement

The researcher sought to identify challenges that inhibit the implementation of green procurement in the organization. The Table below presents a summary of the responses. The findings are, on a scale of 1 to 5, where (1) strongly disagree (2) disagree (3) undecided (4) agree (5) strongly agree, the respondents were asked to indicate the challenges faced in implementing green procurement.

Table 4.4: Challenges in Implementing Green Procurement

	Mean	Std dev	Ranking
Lack of enough finances to support the implementation	4.231	.7016	7th
High cost of green products	4.123	.7891	4th
Lack of internal competence and training on green procurement	4.000	.7167	6th
Lack of appropriate technology	3.945	.7893	3rd
Lack of top management support	3.841	.9124	1st
Unavailability of green materials in the market	3.678	.7789	5th
Resistance from suppliers	3.653	.8245	2nd
Lack of clear benefits from implementing Green Procurement	3.500	.6271	9th
Lack of metrics (KPI) to measure and monitor performance	3.451	.6753	8th
Lack of government incentives in implementing green procurement	3.035	.5515	10th

Source: Field Data, (2019)

Respondents were of the view that the lack of appropriate technology was a challenge in the implementation of green procurement within Coca-Cola Limited with a mean of 3.95 and standard deviation of 0.79. The findings of this study were also opined by Walker and Brammer (2009), who enumerated that the procurement process of a firm is negatively

affected by the absence of clear knowledge on environmental matters. Suppliers resistance is also identified as a major challenge to the successful implementation of green procurement within the company. This challenge recorded a mean of 3.7 and a standard deviation of 0.8. this could be attributed to the unavailability of alternatives or suppliers ignores on the importance of green procurement to the present product by the suppliers. Similar findings were concurred by Genovese (2013) who pointed out that there existed lack of sincerity on the part of suppliers on their commitment to green issues. Also, amongst all the obstacles deduced from the study the lack of management support of and corporate leadership support was ranked the highest hindrance to the successful implementation of green procurement with a mean of 3.8 and standard deviation of 0.9 and on the 4.2 mean and 0.7 standard deviation respectively. This indicates that for a implementation of green procurement in the company the institutional leadership must have a buy in on green matters. Cost has also been sighted by scholars as challenge to GP particularly, when businesses are shifting from the old culture to green culture (Hoffman, 2008). Also lack of clear benefits from implementing green procurement with (m=3.5, std=0.63) affects the implementation of green procurement. The finding agrees with the literature review; where adoption of GP practices may not have monetary gains in the short term and therefore businesses may be reluctant to go green (Nidumolu, 2009).

4.4.3 Measures that can be adopted to improve the implementation of green procurement

The researcher sought to identify the measures that can be adopted to improve the implementation of green procurement. The findings are, on a scale of 1 to 5, where (1) very small extent (2) small extent (3) moderate extent (4) large extent (5) very large extent, the respondents were required to point measures that can be used in improving implementing green procurement.

The Table presents a summary of the responses;

Table 4.5: Measures to improve the implementing Green Procurement

Measures	Mean	Std dev	Ranking
Appropriate technology	4.234	.9354	1st
Voice of customer	4.120	.8211	4th
Organization culture on green practices	4.072	.8789	3rd
Presence of new markets for green products	4.045	.8891	2nd
Top management support	4.034	.8167	5th
Government regulations	4.021	.7123	9th
Collaborative partnerships with suppliers	3.967	.7983	6th
Appropriate risk management system	3.751	.7882	7th
Adoption of environmental standards	3.738	.7031	10th
Government incentives and rewards	3.613	.7131	8th

Source: Field data, (2019)

Respondents posited that top management support of green procurement would ensure a successful implementation of green procurement this is because, respondents were of the view that a major challenge to green procurement is the lack of management support and therefore in putting in place measures the leadership is the key success to implementation of green procurement by the company. The findings agree to that of Klassen (2006) who opined that commitment by the leadership of business positively affected the orientation of the business towards green issues which agrees with similar studies conducted by Anis et al. (2013). With a standard deviation of 0.7 and a mean score of 3.6 respondents were of the view that government incentives and rewards is a measure that could enable the company to implement green procurement. The findings

are in support of the findings of Jung et al. (2012), who deduced that support from the Chinese government especially in the construction industry was critical in companies going green. The other measures includes government regulations with a (m=4.0, std=0.7), organization culture on green practices with (m=4.1, std=0.88), presence of new markets for green products with (4.0, std=0.89), adoption of environmental standards with (m=3.7, std=0,7), and appropriate risk management system (m=3.8, std=0.79). The study also concurred that with the appropriate technology the company would attach importance to green procurement issues as it recorded a means of 4.2 and a standard deviation of 0.93. This is because the technological advancement helps in green procurement by way of creating a paperless society.

Since suppliers are primary stakeholders in the implementation of green procurement, respondents opined that, collaborative partnership with suppliers would ensure the implementation of green procurement is without hindrance and indicates how green procurement is a vehicle for value creation. This involves creating synergies with stakeholders who are involved in creating value along the supply chain up to the end consumer.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction to Chapter Five

This chapter covers the summary of the data analyzed and conclusions to the study. Recommendations have also been given by the researcher through a thorough analysis of the findings and implications of the study.

5.2 Summary of Chapter Five

Analysis of data from respondents in the firm revealed that green procurement plays a very important role at the establishment but still faces challenges with delay deliveries, inadequate fund and so on. The study found out that, Coca-Cola aligned its overall corporate strategy to that of its procurement and therefore considers some specific green procurement practices in its daily activities. The results concur with the findings of Carter (2000), who opined that green procurement is now at the core of the day-to-day functioning of manufacturing organizations. Practices such as supplier selection was identified as it in turns improves the performance of the company. Also, at Coca-Cola another practice adapted was the electronic way of procurement term as "e-procurement" which creates a paperless environment through the automation of the procurement process.

Lean supply is also another green procurement practice that is adopted by the company. Supplier development is also practiced, and it enables the exchange of information that improves the performance of the organization. Furthermore, the findings also revealed that there were delays in the implementation of green procurement policy which affects the achievement of organizational goal. The researchers found that there is little

awareness of the presence of green procurement policies in the organization which requires further management attention.

5.3 Conclusion

The researchers believe that the findings from this study would be eminent in creating awareness for the firms to know the impact of green procurement on the achievement of organizational goals and objectives and create awareness for the needed attention to be given to green procurement in every organization. The researcher believes that Coca-Cola has not really made any great impact or significant improvement embracing the sustainability of Green Procurement into consideration. Also, the researcher believes that if Coca-Cola take Green procurement more seriously and invest more into it, it will help bring out the potential challenges existing in its practice and work towards helping improve its sustainability. Finally, it's obvious that green procurement is very important in any firm and should be given the maximum attention especial during its implementation stage.

5.4 Recommendations

The following are the key aspects of the case study that I believe would require further attention:

I. The establishment of guidelines, standards and codes of code and ethics must by a priority of established government entities, agencies and departments in ensuring sustainable green procurement. Therefore, it must not only be seen at the corporate level but also at the national level.

II. It is also recommended that at all levels of stakeholder engagement there must be collaborations of actions plans from all stakeholders. In tandem with these efforts, management at the top level must put in place measures that seeks to

encourage owners of assets and facilities to take in account green procurement in improving sustainability performance.

III. We would like to recommend that, management could often abreast the employees and the procurement staff on the presence of some functions that exist which the workers are unaware of. This would boost the performance of the firm from the contributions of other employees if awareness is created for a better understanding green procurement and its implementation for achieving organizational goal and objective (EPA, 2001).

IV. With regards to the challenges the firm faces in the implementation of green procurement, we observe from the table that the challenges can have severe adverse effects on the performance the organization in meeting its goals and objectives, hence require cogent attention, we recommend that the management of the firm should pay attention for the necessary steps for them to effectively maximize utilization of green procurement in the achievement of organizational goals and objectives.

REFERENCES

Arney, L., Yadav, P., Miller, R., & Wilkerson, T. (2014). Improving procurement practices in developing country health programs. *Ann Arbor: William Davidson Institute, University of Michigan.*

Bacallan, James J. "Greening the supply chain." Business and Environment 6.5 (2000): 11 12.

Bhattacharyya, Ranjan, et al. "Long-term farmyard manure application effects on properties of a silty clay loam soil under irrigated wheat–soybean rotation." *Soil and Tillage Research* 94.2 (2007): 386-396.

Cacciari, M., Salam, G. P., & Soyez, G. (2008). The anti-kt jet clustering algorithm. *Journal of High Energy Physics*, *2008*(04), 063.

Caniëls, M. C., Gehrsitz, M. H., & Semeijn, J. (2013). Participation of suppliers in greening supply chains: An empirical analysis of German automotive suppliers. *Journal of Purchasing and supply management*, *19*(3), 134-143.

Drosten, Christian, et al. "Identification of a novel coronavirus in patients with severe acute respiratory syndrome." *New England journal of medicine* 348.20 (2003): 1967-1976.

Emmett, Stuart, and Vivek Sood. Green supply chains: an action manifesto. John Wiley & Sons, 2010.

Ferrer, Geraldo, and D. Clay Whybark. "Material planning for a remanufacturing facility." *Production and Operations Management* 10.2 (2001): 112-124.

Gebauer, Judith, Carrie Beam, and Arie Segev. "Impact of the Internet on Procurement." *Acquisition Review Quarterly* 5.2 (1998): 167-184.

Gunning, M., and R. Veeke. "Inkoopbeleid: basis voor doelgerichte actie." Tijdschrift voor Inkoop & Logistiek 9.6 (1993).

Hussein, K. H., et al. "Maximum photovoltaic power tracking: an algorithm for rapidly changing atmospheric conditions." *IEE Proceedings-Generation, Transmission and Distribution* 142.1 (1995): 59-64.

Khan, Z., Lehtomäki, J. J., DaSilva, L. A., & Latva-aho, M. (2011). Autonomous sensing order selection strategies exploiting channel access information. *IEEE Transactions on Mobile Computing*, 12(2), 274-288.

Lawler, E. E. (2000). Rewarding excellence: Pay strategies for the new economy. San Francisco, CA: Jossey-Bass.

Lawler, Edward E. Rewarding excellence: Pay strategies for the new economy. San Francisco, CA: Jossey-Bass, 2000.

Lu, Shin-Ying, and Liang-Chy Chien. "A polymer-stabilized single-layer color cholesteric liquid crystal display with anisotropic reflection." *Applied Physics Letters* 91.13 (2007): 131119.

Mann, Matthias, Ronald C. Hendrickson, and Akhilesh Pandey. "Analysis of proteins and proteomes by mass spectrometry." *Annual review of biochemistry* 70.1 (2001): 437-473.

Marchese, J., Ponce, M., Ochoa, N. A., Prádanos, P., Palacio, L., & Hernández, A. (2003). Fouling behaviour of polyethersulfone UF membranes made with different PVP. *Journal of Membrane Science*, 211(1), 1-11.

Markley, Melissa J., and Lenita Davis. "Exploring future competitive advantage through sustainable supply chains." *International Journal of Physical Distribution & Logistics Management* 37.9 (2007): 763-774.

Martha, T., & Houston, P. (2010). Purchasing: The key to successful green strategy. *China Logistics & Purchasing*, *7*, 20-22.

McCrudden, C. (2007). *Buying social justice: Equality, government procurement, & legal change*. Oxford University Press on Demand.

McKee, R., & Ross, D. (2005). From lean manufacturing to lean supply chain: a foundation for change. *Published by Intentia. www. intentia. com*.

Mutisya, F. M., & Kinoti, J. (2017). Effect of Green Supply Chain Practices On Performance of Large Chemical Manufacturing Firms in Nairobi County Kenya. *International Journal of Supply Chain Management*, *2*(2), 1-21.

Mwacharo, F. (2015). Green procurement in Kenyan hospitals: exploring the awareness and opportunities for Kenyan hospitals to implement green procurement.

Mwacharo, Fiona. (2005)"Green procurement in Kenyan hospitals: exploring the awareness and opportunities for Kenyan hospitals to implement green procurement.".

Nissinen, Ari, K. Parikka-Alhola, and H. Rita. "Environmental criteria in the public purchases above the EU threshold values by three Nordic countries: 2003 and 2005." Ecological Economics 68.6 (2009): 1838-1849.

Palmujoki, Antti, Katriina Parikka- Alhola, and Ari Ekroos. "Green public procurement: analysis on the use of environmental criteria in contracts." *Review of European Community & International Environmental Law* 19.2 (2010): 250-262.

Parikka-Alhola, Katriina, Ari Nissinen, and Ari Ekroos. "Green award criteria in the most economically advantageous tender in public purchasing." Advancing Public Procurement: Practices, Innovation and Knowledge-Sharing; Thai, KV, Piga, G., Eds (2006): 257-279.

Parikka-Alhola, Katriina. "Promoting environmentally sound furniture by green public procurement." *Ecological economics* 68.1-2 (2008): 472-485.

Pio, C. A., et al. "Chemical composition of atmospheric aerosols during the 2003 summer intense forest fire period." Atmospheric Environment 42.32 (2008): 7530-7543.

Preuss, Holger. The Economics of the Olympic Games: Hosting the Games 1972-2000. Walla Walla Press, 2000.

Roberts, Alasdair. "A great and revolutionary law? The first four years of India's Right to Information Act." Public Administration Review 70.6 (2010): 925-933.

Russo, M. V. (2009). Explaining the impact of ISO 14001 on emission performance: a dynamic capabilities perspective on process and learning. *Business Strategy and the Environment*, *18*(5), 307-319.

Salaria, N. (2012). Meaning of the term descriptive survey research method. *International journal of transformations in business management*, *1*(6), 1-7.

Saunders, M. N. (2011). *Research methods for business students, 5/e*. Pearson Education India.

Selvaraj, R. K. (2011). A Study on the Implementation of Green Supply Chain-A Comparative Analysis between Small Scale Industries in India and Developed Nations.

Testa, Francesco, et al. "Drawbacks and opportunities of green public procurement: an effective tool for sustainable production." Journal of Cleaner Production 112 (2016): 1893-1900.

Tur, Mehmet K., et al. "Recombinant CD64-specific single chain immunotoxin exhibits specific cytotoxicity against acute myeloid leukemia cells." Cancer research 63.23 (2003): 8414-8419.

Van Weele, Leonardus A., et al. "Operator station for manufacturing process control system." U.S. Patent No. 5,631,825. 20 May 1997.

Zhu, Q., Sarkis, J., & Lai, K. H. (2009). Green supply chain management implications for “closing the loop”. *Transportation Research Part E: Logistics and Transportation Review*, *44*(1), 1-18.

APPENDIX

TOPIC: ASSESSING THE PRACTICE OF GREEN PROCUREMENT IN COCA-COLA COMPANY LIMITED

This project is only for academic purpose and in partial fulfillments of the required for the award of Degree in MSc Procurement Management. Any information volunteered will be treated as confidential. I will be grateful if you could spare me few minutes of your precious time to assist me answer this questionnaire. Please tick or circle where necessary.

SECTION A: DEMOGRAPHIC PROFILE

1. Gender Male ( ) Female ( )

2. Age Group
    a. 18-25
    b. 26-35
    c. 36-45
    d. Above

3. Qualification
    a. PhD
    b. MSc
    c. BSc
    d. HND
    e. Other ……

4. Position in the organization
    a. Procurement manager
    b. Sales manager
    c. Production manager
    d. Others

5. Working experience
    a. Below 5 years
    b. 6-10 years
    c. 11-15 years

SECTION B

GREEN PROCUREMENT PRACTICES AT COCA-COLA COMPANY LTD

Listed below are some of the attributes of the Green Procurement practices adopted by firms. Please rank by a tick in the appropriate box the extent to which they are practiced using the following rating; 5 = to a very large extent, 4 = Large extent, 3 = Moderate extent, 2 = Small extent, 1 = Very small extent

Supplier Selection	**5**	**4**	**3**	**2**	**1**
Green designed products					
Green Materials (recycle, re-use, reduce, re-furbish)					
Green packaging material					
Energy conservation					
Reduction in use of harmful substance					
Suppliers to have ISO 14001certification					
E-Procurement					
Electronic supplier database					
e-sourcing (soliciting of bids)					
e-bidding (reverse auction)					
e-evaluation of bids					
e-payment					
Electronic information exchange with suppliers					
Lean supply					
Eliminating delays in delivery					
Avoiding overstocking					
Appropriate use of transport mode					
Avoiding over processing					
Decreasing defects					
Supplier Development					
Supplier relationship management					
Supplier investments (financial, machinery, technology)					
Supplier visits					
Frequent communication on green procurement KPI's					
Supplier trainings					
Rewards/Awards for improvements					

Any other ……

SECTION C

CHALLENGES THAT EXIST IN PRACTICING GREEN PROCUREMENT

Listed below are some of the challenges/ barriers which prevent firms from adopting Green Procurement practices. Please rank by a tick in the appropriate box the extent to which you agree with these challenges using the following rating; 5 = strongly agree, 4 = Agree, 3 = Undecided 2 = Disagree, 1 = Strongly Disagree.

No.	Challenges in Implementing Green Procurement	5	4	3	2	1
1	Lack of appropriate technology					
2	Resistance from suppliers					
3	Lack of enough finances to support the implementation					
4	Lack of top management support					
5	Lack of internal competence and training on green procurement					
6	Lack of clear benefits from implementing Green Procurement					
7	Lack of metrics (KPI) to measure and monitor performance					
8	Lack of government incentives in implementing green procurement					
9	Unavailability of green materials in the market					
10	High cost of green products					

11. Any other …….

SECTION D

CONTROL MEASURES FOR ENSURING GREEN PROCUREMENT

On a scale of 1 to 5, with 5 being strongly disagree to strongly agree, how would you rate the following statements?

1=Strongly Disagree 2= Disagree 3=Neutral 4=Agree 5=Strongly agree

No.	**Measures**	**5**	**4**	**3**	**2**	**1**
1	Appropriate technology					
2	Collaborative partnerships with suppliers					
3	Government regulations					
4	Top management support					
5	Government incentives and rewards					
6	Voice of customer					
7	Appropriate risk management system					
8	Adoption of environmental standards					
9	Organization culture on green practices					
10	Presence of new markets for green products					

11. Any other? ……