

**GREEN PROCUREMENT PRACTICES IN THE PUBLIC
SECTOR: THE CASE OF PARASTATALS IN KENYA**

By

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DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university for examination.

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DEDICATION

This research project is dedicated to my family; Mercy, Cameron and Kangu, their contribution to my life is invaluable.

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LIST OF ABBREVIATIONS

CEC	Commission for Environmental Cooperation
CFCs	Chlorofluorocarbons
CP	Customer pressure
CSR	Corporate Social Responsibility
EMS	Environmental Management System
EU	European Union
EBB	Expected business benefit
GDP	Gross Domestic Product
GJLOS	Governance, Justice, Law and Order Sector
GOP	Government of Philippines
GP	Green Procurement
ISO	International Organization for Standardization
KEMSA	Kenya Medical Supplies Agency
MNC	Multinational Corporations
NGO	Non-governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PPAB	Public Procurement Advisory Board
PPARB	Public Procurement Administration Review Board
PPDA	Public Procurement Disposal Act
PPOA	Public Procurement Oversight Authority
RG	Regulation
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
SR	Social Responsibility
SPSS	Statistical Package for Social Sciences
SWAp	Sector Wide Approach Aid Program
UK	United Kingdom
WHO	World Health organisation

ABSTRACT

Using the OECD (2006) public procurement estimates, the public sector organisations in Kenya is estimated to have procured between US\$ 4.29B and US\$ 7.16B in 2010. Given the rising environmental concerns and awareness among various stakeholders in the supply chain as well as interest groups such as consumer groups, public sector organisations may find it appropriate to adopt green procurement practices. It is not clear, given the absence of legislation in Kenya on green procurement, to what extent public sector organisations are practicing green procurement and if so, the drivers for adopting the same and the challenges they face in the process. This study sought to answer the aforementioned questions.

This study surveyed all parastatals in Kenya with a questionnaire that targeted procurement managers. It found out that green procurement management practices were still low in the public sector in Kenya as most of the practices had a mean of 3 and 4. The mean scores indicated that there were eight factors which the respondents considered important drivers of green procurement. The results of descriptive analysis revealed that the major challenge was insufficient knowledge on concept of green procurement. The study also concludes that the most common driver of green procurement was environmental regulations while the least driver was pressure from shareholders. The study concludes that the most important challenge to the adoption of green procurement is insufficient knowledge on the concept of green procurement while the least challenge was financial resources.

Consequently the research recommended that with the global warming and environmental concerns from all sectors, there is need for the public sector

organisation in Kenya to adopt green procurement practices in order to help in the efforts to conserve the environment.

CHAPTER ONE: INTRODUCTION

1.1 Background

It is now a trend in business for companies to enter into the field of sustainable development. The reasons for companies to be involved in sustainable development are varied. Some are due to the increasing regulatory pressure from government and public demand for a better environment (UNEP, 2002), others concern with the impacts of social and environmental performance on financial performance. It is argued by some that integrating sustainability into business is an approach to achieve corporate competitive advantages (Porter, 1998).

Confronting diverse sustainability issues relates closely to their business activities, (e.g. climate change, ecological degradation, cultural and social problems and so on), companies start to integrate various kinds of sustainability strategies into corporate management system. For instance automobile manufacturing companies emphasise greatly on cleaner energy in addressing climate change while household application companies tend to focus on social responsibilities. Those sustainability strategies cover also different business units and scopes. Some companies work more on recycle and reuse while others try to deal with the problem from a complete product life cycle.

With increase in environmental concerns during the past decade, a consensus is growing that environmental pollution issues accompanying industrial development should be addressed together with supply chain management; thereby contributing to green supply chain management (Sheu, Chou, and Hu, 2005). This section provides a

discussion of the concept of green procurement as well as the practice of procurement in Kenya. The section also provides a discussion of the scope of firms in the study.

1.1.1 Concept of Green Procurement

There has been an increasing awareness of environmental protection worldwide. Due to this, the green trend towards conserving resources and protecting the environment has exerted pressure on companies across the world (Salam, 2008). This pressure has prompted organisations to improve their environmental performance (Zhu and Sarkis, 2006). Consequently, organisations have shown growing concern for the environment. Increasing environmental concern has gradually become part of the overall institutional culture and, in turn, has helped to re-focus the strategies of corporations (Salam, 2008).

According to Salam (2008), the types of environmental impact that are due to the coordinated activity of companies in a supply chain include global warming, reductions in air quality, pollution of waterways and widespread loss of biodiversity. Much of the activities arise from the manufacturing sector which produce and emit unnecessary large wastes rather than investing in better technologies that prevent such generation (King and Lenox, 2002). Hervani, Helms, and Sarkis (2005) add that addressing the influence of supply chain management on the natural environment is a green component to supply chain management.

Arrowsmith, Linarelli, and Wallace (2000) define procurement as the situation where a firm obtains the goods and services that it needs by making a contract with another entity. This is usually a firm from the private sector. According to Bolton (2008), the

use of procurement to promote environmentally sound practices is referred to as green procurement; environmentally preferable purchasing; eco-procurement; environment-orientated procurement; environmentally friendly procurement; environmental procurement; greener purchasing; sustainable procurement; and environmentally responsible procurement. Bolton (2008) notes that despite the variety of terms, they all generally refer to the selection of products and services whose environmental impact are not harmful or the least harmful to the environment and human health when measured against competing products and services.

Lacroix (2008) asserts that green procurement (or affirmative procurement) is the purchase of environmentally preferable products and services in accordance with one or more of the established green procurement preference programs. It is the purchasing of products or services with lower effect on the environment over their whole life cycle than the standard equivalent. The green procurement elements, according to Lacroix (2008), are: recycled content products; energy efficient products and energy efficient standby power devices; alternative fuel vehicles, alternative fuels, and fuel efficient vehicles; bio-based products; non-ozone depleting substances; alternative fuels and fuel efficient vehicles; and environmental protection priority chemicals.

Organisations worldwide are making an effort to purchase products and services that are environmentally friendly. According to Lacroix (2008), both public and private sector organizations are implementing procurement practices that focus on environmental considerations. Public and private sector companies are buying green because it results in a number of benefits. Public sector organizations find that green

procurement policies reduce overall costs, offer significant opportunity to use materials, resources and energy more effectively, improve employee health and stimulate markets for innovative new products and services. For private sector organisations, green procurement policies measure a financial payback from purchasing products and services with lower environmental impacts and from selecting suppliers that are committed to improving their own environmental, health and safety performance (CEC, 2003).

Thai (2001) noted that public procurement is an important function of government because of the sheer magnitude of procurement outlays which has a great impact on the economy. Further, due to many reasons, public procurement has been perceived as an area of waste and corruption (Thai, 2001). Nyiri et al., (2007) noted that public procurement is important as it can be used to drive demand for innovative goods while at the same time improving the level of public services. Wittig (2003) asserted that public procurement plays a very important role in poverty reduction efforts. Arrowsmith et al., (2000) reported that public procurement is important because the government is able to provide goods and services to the public; is important to the firms that deal with the government in providing the services (contractors) such as those in the telecommunications or construction sectors; and for wider economic development, achievement of social and environmental objectives, and integrity of administration.

1.1.2 Public Procurement in Kenya

Currently, there is a Public Procurement Oversight Authority (PPOA) to steer the procurement in the public sector as well as legislative changes including the

enactment of the Public Procurement Act 2005. The Public Procurement and Disposal Act, 2005 created the Public Procurement Oversight Authority (PPOA), the Public Procurement Advisory Board (PPAB) and the continuance of the Public Procurement Complaints, Review and Appeals Board as the Public Procurement Administrative Review Board (PPARB). The PPAB and PPARB are autonomous bodies (PPOA, 2011).

Aketch (2005) reviewed the procurement regime of Kenya's first Sector Wide Approach Aid Program (SWAp), that is, the Ministry of Justice and Constitutional Affairs' Governance, Justice, Law and Order Sector (GJLOS) Reform Program in the context of the then on-going public procurement reform efforts. The author noted that GJLOS's procurement regime was inefficient and unlikely to be effective since it created administrative structures that were not only unwieldy but also run parallel to the national system. Secondly, the author noted that the procurement regime was not sufficiently democratic as it was not accountable to the Kenyan people and did not facilitate the meaningful participation of key stakeholders.

The Public Procurement Disposal Act (PPDA) of 2005 is however silent on green procurement. This means that there is no legislative mandate in Kenya for public or private entities to adopt green procurement measures. Any such adoptions are voluntary and driven by other factors other than legislation. Public sector as used in this study refers to those organisations which the government is a majority shareholder. In the context of this study, they shall include the various parastatals under various ministries in Kenya.

There are currently 127 parastatals and the list of all the 127 is provided as appendix 1. According to Walker and Brammer (2009), the difference between public sector purchasing and the commercial one is that the public sector spends taxes which are subject to public review hence the need for transparency and accountability public sector purchasing processes. Green procurement practice is important is important for public sector organisations because these organisations are not only concerned with reducing cost and achieving value but also with gaining social and environmental benefits (Walker and Brammer, 2009).

1.2 Statement of the Problem

Public procurement has a huge potential. Ssennoga (2006) reported that the value of contestable government procurement the world over was \$2,000 billion in 1998 which was equivalent to 7% of the world GDP and 30% of the world merchandise. More recently, Qin (2009) noted that the procurement in developed countries takes up to 5%-15% of GDP. China's procurement market is worth 20% of GDP (European Union Chamber of Commerce in China, 2010). OECD (2006) research indicates that the aggregate average public procurement spending at all levels (including central, provincial and municipal, etc) are between 12% and 20% of a country's GDP. This explains the magnitude and importance of public procurement.

Using the OECD (2006) public procurement estimates, the public sector organisations in Kenya is estimated to have procured between US\$ 4.29B and US\$ 7.16B in 2010. Given the rising environmental concerns and awareness among various stakeholders in the supply chain as well as interest groups such as consumer groups, public sector organisations may find it appropriate to adopt sustainable or green procurement

practices. It is not clear, given the absence of legislation in Kenya on green procurement, to what extent public sector organisations are practicing green procurement and if so, the drivers for adopting the same and the challenges they face in the process.

Walker and Brammer (2009) noted that little research had investigated sustainable procurement practices, of which green procurement is part of, in the context of the public sector. Some of the studies on green procurement practices in the public sector include Swanson et al., (2005) who focused on the development of tools to assist green procurement policy implementation. Hall and Purchase (2006) study focused on how green procurement can be encouraged when the public sector buys from suppliers in construction industry. Walker and Brammer (2009) investigated sustainable procurement in the UK public sector.

The closest study to the present in Kenya was done by Mwirigi (2007) on green supply chain management practices by manufacturing firms in Kenya but it did not focus on the public sector hence the deviation from the present study. The study also noted that the practice was very low hence the need to establish whether parastatals fare any better. This study is also taking place at a time when environmental awareness is on the increase; if procurement function is handled carelessly it has a potential of causing harm to the environment.

Given the importance of green procurement, the absence of studies on green procurement practices in the public sector in Kenya provide a gap in literature that the present study seeks to bridge. Further, the absence of legislation or government policy

on green procurement provides the need to evaluate how the practice is carried out among public sector institutions given the voluntary nature of the practice. This study therefore seeks to provide a systematic and comprehensive insight into the state of green procurement practice in parastatals in Kenya. The research poses the questions: to what extent have the parastatals in Kenya adopted green procurement practices? What drives parastatals in Kenya to adopt green procurement practices? What challenges do parastatals in Kenya face while adopting green procurement practices?

1.3 Objectives of the study

The objectives of this study are:

- i. To determine the extent to which parastatals in Kenya have adopted green procurement practices.
- ii. To determine the drivers of green procurement adoption in parastatals in Kenya.
- iii. To establish the challenges facing parastatals in adopting green procurement practices.

1.4 Importance of the study

This study has both theoretical and practical contributions. The first theoretical contribution is that the research will add on to the growing body knowledge of green procurement by introducing the practice in developing countries as well as providing evidence of voluntary practice where there is no legislation on the same. The second theoretical contribution is that scholars and academicians will also find this study an invaluable source of reference material for future studies in the area as well as for discussions in the field of procurement management.

Practically, the study will be invaluable to the management of various public sector organisations in Kenya insofar as green procurement practices concerned. The results will be an eye-opener on the practices, drivers and challenges of green procurement in the public sector. This will aid in future adoption of green procurement in other sectors of the economy. Another practical contribution is that other firms wishing to engage in green procurement practices find this study very useful in terms of the challenges they are bound to face in the process and how to mitigate on such challenges. The recommendations here will guide on how firms engaging in green procurement can avert the challenges of adopting green procurement practices.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The procurement of goods, works, and services has a major impact on the successful execution of a project. Studies have shown that procurement plays an important role on economic activity. For instance, Brulhart and Trionfetti (2004) noted that procurement has a tendency to favour relatively local companies over foreign suppliers. Others such as Bovaird (2006) and Gelderman et al., (2006) noted that procurement plays a significant role in strengthening supply relationships between the private and public sectors as well as the processes of tendering and contracting.

Studies have also shown that public procurement can play a significant role in the economy as a stimulus for innovative activity among companies within a region (Brammer and Walker, 2011). Further, public procurement plays an important role in fostering innovation in the private sector (Aho et al., 2006). This is because research in the private sector has shown that value chain activities affect innovation (Prajogo et al., 2008) while those in the public sector show that government procurement is a key part of a demand-oriented innovation policy (Edler and Georghiou, 2007; Aschhoff and Sofka, 2008). Altman (2010) noted that procurement can be used as a tool to promote economic development and capacity of small and medium enterprises. Procurement involves the use of resources which more often have an effect on the environment. This calls for green procurement or sustainable procurement.

The Theory of Planned Behaviour (TPB) has been used by researchers to study consumer decision making process and buying behaviour regarding many issues such as energy conservation (Gupta and Ogden, 2009), environmental friendly

transportation (Lane and Porter, 2007), as well as recycling (Mannetti, Pierro, and Livi (2004). This theory has its roots in Ajzen and Fishbein's Theory of Reasoned Action (TRA) developed in 1980. This theory assumes that human behaviour is quite rational and could relatively be predicted (Ajzen and Fishbein, 2002). The TPB is based on the assumption that people usually behave in a sensible, rational way and consciously consider the consequences of alternative behaviour as well, choosing the one that is most favourable (Ajzen, 2005).

If the state corporations in Kenya are assumed to be individuals buying products in the market, then the TPB can accurately show why they choose to practice green procurement instead of the traditional procurement practices. This theory is therefore applied here to explain the conscious decisions to procure green products and to engage in green procurement practices.

2.2 Global Perspective on Procurement

Public procurement generally accounts for a large share of public expenditure in a domestic economy. It is a key economic activity of governments, accounting for an estimated 15% of gross domestic product (GDP) worldwide on average (OECD, 2008). More recent estimates suggest that the scale of public procurement is between 8 and 25 per cent of GDP for OECD countries and 16 per cent of European Union (EU) GDP (Afonso et al., 2005; OECD, 2009).

A study by Pavel (2006) revealed that the transparency of the Czech public procurement market was not sufficient. It noted that contracting without bidding for small contracts was prevalent and that open bidding concerned less than one third of

the total market. The study also noted that contracting without bidding had a negative influence on the possibility of using competition processes to limit public sector expenditure.

Wittig (2003) also noted that many local and international firms do not participate in public procurement due to governments favouring other supplies or corruption. According to Arrowsmith (2005), public procurement occurs when a public agency purchases goods and/or services from an outside body. Edquist et al., (2000) noted that the goods and services may be either regular, off the shelf-products or innovative products which have been delivered as a result of development carried out by the supplier.

Ohashi (2009) examined the effect of improved transparency in the bidder qualification process, using the experience gained from a case study of municipal public works auctions. A difference-in-differences analysis revealed that improved transparency reduces procurement cost by up to 8%. This finding is robust with regard to the concerns of both endogeneity and sample selectivity. The bidding-function estimates, combined with features of Japanese procurement system, imply that the introduction of transparent practices is insufficient to bring about efficiency in public procurement.

The Philippines Country Procurement Assessment Report revealed that the volume of public expenditure passing through the public procurement system had increased rapidly averaging around Php121 billion [or US\$2.6 billion] per year from 2003 to 2005 (World Bank, 2008). Procurement expenditure jumped up 39% when the

Government's infrastructure program kicked off in 2006, and increased further to Php229 billion [or US\$ 4.98 billion] by 2007 (World Bank, 2008). The increasing trend of budgetary allocation for procurement expenditure was a direct consequence of the increasing focus of the Government of the Philippines (GOP) on extending infrastructure networks and providing more services to the public.

The Armenia Country Procurement Assessment Report noted that about 15 percent of GDP (estimated at over US\$9.2 billion equivalent in 2007 and US\$12.0 billion equivalent in 2008) was spent on public procurement, and this amount was expected to increase in coming years (World Bank, 2009). Public Procurement market in the EU accounts for 14% of gross domestic product (OECD, 2008). The driving characteristic behind public procurement is the need for governments to maintain and develop the type of society demanded by their citizens. Olswang (2011) reported that the size of UK public procurement market was at least 4% of UK GDP or 81 billion in 2007.

Bolton (2006) argues that prior to 1994, the government procurement system in South Africa favoured large and established businesses and it was therefore very difficult for new business to enter the procurement system. This changed in 1994 when government procurement was granted constitutional status. Roose and de la Harpe (2008) concluded that the South African public procurement system complies with the basic principles of good governance with regard to accountability. An assessment by Hanks et al., (2008) in terms of the preferential procurement legislation in South Africa revealed that while all public sector bodies agree with the spirit of the legislation, in certain areas it is felt that the legislation has not been implemented as

effectively as possible. The same assessment reveals that in terms of green procurement in South Africa, very little along the lines of green procurement practices are currently in place despite the development of policies by government bodies to effect green procurement principles and criteria.

A number of studies have also been done on procurement in East Africa. For instance, Basheka (2009) addressed the effects of procurement planning on local governance in Uganda. The study was conducted among key political and administrative stakeholders from 11 local governments in Uganda. Using principal component factor analysis and a subsequent reliability analysis for each of the retained components to pave way for correlation and regression analyses, the results indicated a very significant positive relationship between procurement planning and local governance in Uganda.

The study concluded that the vast resources local governments spend on the function of buying goods, services and works essential for their operations requires adequate procurement planning. Odhiambo and Kamau (2003) presented a comparative analysis of the public procurement system in three East African countries: Kenya, Uganda and Tanzania. The authors noted that Tanzania had moved faster than Kenya and Uganda with the reforms and put in place a legislative framework for public procurement.

2.3 Green Procurement

GP is defined as an environmentally conscious purchasing initiative that tries to ensure that purchased products or materials meet environmental objectives set by the

purchasing firm, such as reducing the sources of wastages, promoting recycling, reuse, resource reduction, and substitution of materials (Min and Galle, 2001). GP ensures that purchasing or supply chain managers consider the issue of sustainability in the purchasing of inputs, in addition to the traditional purchasing criteria of cost, quality, and delivery (Kannan et al., 2008).

According to Salam (2008), the benefits of green procurement include natural conservation because green products are generally produced in a manner that consumes less natural resources and energy or uses them more sustainably from the process of acquiring raw materials, processing and manufacturing parts, transporting, use, and final disposal. Secondly, green procurement leads to waste reduction because green products are generally designed with the intention of reducing the amount of waste created. For example, they may contain recycled material or use less packaging, and the supplier may operate a 'take-back' programme. Thirdly, there are cost benefits related to green procurement. This is because green products consist of natural materials, which can be recycled, reused and also easily disposed of. So an organization can achieve lower waste disposal costs, waste treatment costs and energy costs.

In addition, green products generally require fewer resources to manufacture and operate, so savings can be made on energy, water, fuel and other natural resources. Lastly, the author notes that one another benefit is that it decreases hazardous or toxic level since green products produce lower levels of hazardous and toxic materials in the environment.

2.3.1 Green Procurement Practices

The measures of greenness were outlined by Hamner (2006) who summarized them as seven basic GP activities. These are product content requirements (buyers specify that purchased products must have desirable green attributes such as recycled or reusable items), product content restrictions (buyers specify that purchased products must not contain environmentally undesirable attributes such as lead, CFCs, plastic foam in packaging materials), product content labeling or disclosure (buyers require disclosure of the environmental or safety attributes the contents of the purchased product. Such disclosure can be done using green seals and indicators of relative environmental impact such as scientific certification system offered by various commercial organizations),

supplier questionnaires (buyers send questionnaires to suppliers asking them to provide information about their environmental aspects, activities and/or management systems), supplier environmental management systems (buyers require suppliers to develop and maintain an EMS. However, the buyer does not require the supplier to certify the system), supplier certification (buyers require suppliers to have an EMS that is certified as fully compliant with one of the recognized international standards such as the British Standard 7750, ISO 14001 from the ISO, and the European Union Eco-Management and Audit Scheme), and supplier compliance auditing (buyers audit suppliers to determine their level of compliance with environmental requirements).

ISO 14001 is an internationally recognized Environmental Management System (EMS) standard developed by the International Organization of Standards (ISO). It is designed to be flexible enough to be implemented by any size of company within any

sector, and can be applied to a single site or division that operates at many sites. ISO 14001 does not contain performance requirements (Anbumozhi and Kanda, 2005). It is a tool that helps an organization set, achieve and continually improve on policies and objectives.

2.3.2 Drivers of Green Procurement

Previous research identified numerous drivers that influence firms to adopt GP initiatives. For instance, Rao (2006) stated that customer pressure (CP) and expected business benefits (EBB) are the most influential factors affecting GP. Forman and Jorgensen (2004) affirmed that regulations (RG), CP, social responsibility (SR) and EBB have significant effects on GP. Min and Galle (2001) did a study on green purchasing practices of US firms and discovered that RG and EBB are the most significant drivers. Preuss (2001) RG, SR, and EBB are the most important drivers for GP. Lastly, Carter and Carter (1998) identified CP as the sole driver for GP.

Raman and Peir (2006) conducted interviews with ten small and medium-sized enterprises in Malaysia and found that the main drivers for corporate social responsibility (CSR) activities are waste recycling, paperless technology and the use of biodegradable containers. The professional code of conduct and ethics, CP (for firms who are suppliers to multinational corporations (MNCs)), expected financial returns (especially from recycling), personal values of the owner and reputation are also need to be addressed under CSR. Perry and Singh (2002) have conducted a survey among 91 MNCs in Malaysia and found that the most important determinants of voluntary environmental actions are pressure to conform to corporate head office on environmental criteria, increased workforce environmental awareness, consumers

especially those located in high-income communities, and community NGOs, and the media. These studies emphasis on four main drivers that influence business firms to adopt GP initiatives and they are RG, CP, SR, and EBB.

A study by Lee (2008) on the drivers for the participation of small and medium-sized suppliers in green supply chain initiatives revealed that buyer environmental requirements and support were positively linked to their suppliers' willingness to participate in green supply chain initiatives. The study also revealed that the more slack resources and organizational capabilities suppliers had, the more willingly they *were to participate in those initiatives.*

Walker et al., (2008) explored the factors that drive or hinder organisations to implement green supply chain management initiatives. A literature review identified the main categories of internal and external drivers of green supply chain management practices, including organisational factors, regulation, customers, competitors and society. The study found that internal barriers include cost and lack of legitimacy, whereas external barriers include regulation, poor supplier commitment and industry specific barriers.

Emmett and Sood (2010) noted that there are a number of reasons why green procurement should continue to be promoted within organisations and across value chains. The reasons include: stimulating new product and service innovation for the markets of the 21C; the increasing number of environmentally preferable products and services; opportunities for collaboration; and interest by the investment community and lenders.

2.3.3 Challenges in Adopting Green Procurement

According to Emmett and Sood (2010), several challenges exist for organisations in implementing and stimulating green procurement programmes all across the supply chain. These include uninformed advocacy groups, lack of clear definitions, integration into management systems, educating marketing and sales professionals, potential barriers to trade, changing the ‘only cost’ mindset, among others.

According to Buy-Environmental (2011), challenges to green procurement include price, lack of corporate commitment, insufficient knowledge, availability, no acceptable alternatives, no specifications, and purchasing habits. These challenges are also reported by the Canadian Centre for Pollution Prevention (2008). Lacroix (2008) noted that organisations face several challenges when implementing and stimulating green procurement programs. These include estimating hidden costs and potential savings, misinformed advocacy groups, lack of clear definitions, integration into management system, educating marketing and sales professionals, potential barriers to trade, changing the first cost mindset, and insufficient and incomparable environmental information.

It is often difficult to implement policies due to legislative constraints, accounting methods that do not take into account the unique qualities of green products, poor organization design, and poor procurement practices (Williams, Chambers, Hills, & Dowson, 2007). When implementing green procurement, public sector organizations, are often limited by international and national procurement laws (Driscoll, et al., 2010). These regulations do not allow buyers to introduce irrelevant pre-qualifications to contracts (Williams et al., 2007). The author notes that often times, buyers are concerned that environmental sustainability would be considered an irrelevant pre-

qualification. However, with careful wording and interpretation of the law, buyers can show that environmental sustainability is relevant to the contract.

Monetary constraints are often cited by procurement staff as a barrier to green procurement (Driscoll et al., 2010). Assessment of the costs and benefits of green procurement requires a different type of economics than traditionally used. Organizations need to acknowledge immediate costs, such as higher purchasing prices, as well as long term costs, such as electricity costs and the cost of environmental clean-up (Epstein, 2008). Organizations are often hesitant to purchase environmentally friendly products due to their high initial costs, although the long-term savings may be substantial.

Studies have shown that increasing energy efficiency is often more effective than curtailing energy use of inefficient technologies (Gardner & Stern, 2008) and this often requires the purchase of new equipment and supplies, but results in large financial return. As experience and investments increase overtime, the price of environmentally friendly alternatives is likely to fall (Stern, 2007). In other words, the costs of environmentally friendly products are expected to decrease with experience and scale.

In addition to monetary and legal barriers, poor organizational design, institutional inertia, and poor procurement processes can prevent successful green procurement practice. Scattered and complex procurement functions cause unnecessary work as different departments or organizations work to meet identical needs (Williams et al., 2007). This leads to teams being under-resourced and over-worked. Organizations

should centralize procurement and have one team that creates the procedure, manages contracts, and acts as a liaison with other departments.

It is worth noting that research on green procurement practices is still limited given the fact that this is a new area. Thus, not a lot has been researched on the challenges of green procurement thus the limited number of authors and challenges in this area. Further, most of the studies on green procurement borrow heavily from those of environmental sustainability, corporate social responsibility, and sustainable environmental studies. Finding studies that are purely on green procurement practices is hard and most on the same are on the overall green supply chain management hence the reason for the use of studies on sustainable procurement and green supply chain management in the empirical review that ensues.

2.4 Empirical Studies on Green Procurement

Otanez and Glantz (2011) in their study on social responsibility in tobacco production in Tanzania and Malawi concluded that the tobacco industry uses green supply chains to make tobacco farming in developing countries appear sustainable while continuing to purchase leaf produced with child labour and high rates of deforestation. The study noted that strategies to counter green supply chain schemes include securing implementing protocols for the WHO Framework Convention on Tobacco Control to regulate the companies' practices at the farm level. The methodology used included an analysis of tobacco industry documents, industry websites and interviews with tobacco farmers in Tanzania and tobacco farm workers, farm authorities, trade unionists, government officials and corporate executives from global tobacco leaf companies in Malawi.

Walker and Brammer (2009) investigated sustainable procurement in the United Kingdom public sector. This was done using a questionnaire that drew on established scales for 'Purchasing Social Responsibility' which was developed by Carter and Jennings (2004). The survey was administered across the UK public sector, and 106 responses were received from procurement officers. The analysis of quantitative and qualitative survey data revealed there was significant variation across public sector agencies in the nature of sustainable procurement practice.

Local authorities had particularly strong emphasis on buying from local and small suppliers relative to other sectors, health looked generally lower in many categories and education appeared to have something of an emphasis on environmental aspects of sustainable procurement. Cost was found to be the leading barrier to sustainable procurement, and top management support the leading facilitator.

The major limitation of the study by Walker and Brammer (2007) was the likelihood of selection bias in the sample, with those practitioners engaging in the sustainability agenda being more likely to have responded to the questionnaire. The study however, provided the first survey of sustainable procurement practices across the UK public sector. It also provided a conceptual framework of influences upon the propensity to engage in sustainable procurement practice.

Bergstrom et al., (2005) identified practices in using environmental information when making decisions on what food to procure and purchase. Using a phenomenographic approach, professional purchasing managers at food production companies and

wholesalers in public and commercial food services as well as retailing was interviewed with the aim of identifying practices when using environmental information in decisions on what food to procure for purchasing.

The findings showed that purchasers were dependent on corporate policy when it came to environmental considerations related to food. Purchasers were mainly guided by business parameters with respect to price, quality and service. These factors were given priority over co-operation along the food supply chain. Such co-operation had been shown to have the potential to encourage environmentally friendly purchasing decisions. The study places the issue of the use of and need for environmental information in the food supply chain on the national agenda in Sweden. Thus, the study contributes to increasing the awareness of the importance of professional food purchasers as actors for change towards more environmentally friendly food consumption.

Preuss (2009) explored the ways in which local government authorities in England use their procurement function to foster sustainable development. The study used an exploratory approach. Based on a review of the existing literature, qualitative research into leading local government authorities was undertaken to draw out the multiple ways in which public procurement can support sustainable development. The study found that at an aggregate level, local government procurers had adopted a wide range of initiatives to address all three aspects of sustainability: encouraging first-tier suppliers to make use of small local businesses as their subcontractors on the economic side, contracting with voluntary organisation on the social side or replacing hazardous materials in products and services on the environmental side.

ElTayeb et al., (2010) examined the effect of four drivers, namely regulations (RG), customer pressures (CP), social responsibility (SR), and expected business benefits (EBB) on green purchasing (GP) in the Malaysian manufacturing sector. A population of 569 was drawn from the International Organization for Standardization 14001 certified manufacturing firms in Malaysia. Out of 569 firms, 132 (23.2 percent) positively responded for the mail survey on GP.

The empirical findings of the study suggested that GP is affected by the drivers namely RG, CP, EBB, and firm ownership. The results also suggested that, although Malaysian firms showed a high level of SR, it did not constitute a genuine driver for these firms to adopt GP. The results of the paper provide insights into why Malaysian firms adopt GP activities. It also provides policy makers and managers with a list of drivers that can be used as directions for setting up appropriate policies that encourage firms to adopt GP initiatives.

Rao and Holt (2005) noted that green practices can help to enhance environmental performance. Rao (2002) argued that many large Taiwanese companies had adopted green procurement systems to enhance environmental performance and reduce production costs. Rha (2010) studied the impact of green supply chain practices on supply chain performance and revealed a significant positive relationship between GSCM practices and three supply chain performance parameters namely resource, output, and flexibility. These studies all point to the fact that green procurement, just like other socially responsible practices, have an impact on performance and that green procurement performance can be measured.

In Kenya, a number of studies have been done on procurement in general but very little on green procurement. For instance, Mwirigi (2007) studied green supply chain management practices by manufacturing firms in Kenya. Obiero (2008) studied the challenges in the implementation of the 2005 procurement Act on the Kenya Ministry of Higher Education, Science and Technology. Owuori (2010) reviewed the bid processing time for procurement in donor funded public projects in Kenya. Mogoi (2010) studied the effects of operational management on the procurement of pharmaceutical products in developing countries with a specific focus on Kenya Medical Supplies Agency (KEMSA).

The above review shows that there is an empirical gap to be addressed as far as the practice of green procurement in parastatals in Kenya is concerned. Not many studies have addressed green procurement as a practice in either public or private sector. Where such attempts have been made, it is on overall environmental sustainability or on green supply chain management. In addition, such studies have focused on developed economies. It will be worthwhile to focus on a developing country such as Kenya. Such a perspective would enrich the theory on green procurement practices. This is the gap the present study seeks to address.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

This study adopted a survey design. This design was selected because the study sought to provide a broad overview of green procurement practices in the public sector in Kenya. According to Alreck and Settle (1995), the adoption of survey method is the best as it has the advantage of being suitable for distribution across a wide geographical area and to a large number of organisations.

3.2 Population

The population for the study is all parastatals in Kenya. According to the Office of Public Communications, there were 127 parastatals (or state corporations) in Kenya as at June 2011. The list of these firms is provided as appendix 1.

3.3 Sample and Sampling Technique

Mugenda and Mugenda (2003) noted that a sample size should be at least 10% of the population or be made of at least 30 respondents. Thus, using this method, the sample size should be either 13 parastatals or 30 parastatals. From the population of 127 parastatals, a sample size of 63 (or 50% of the population) was drawn. This is above the minimum recommended sample size hence adequate for the study. The sample firms were drawn using simple random sampling technique from the list provided in appendix 1. This technique has been previously used by other scholars such as Mwirigi (2007).

3.4 Data Collection

Primary data was collected by use of questionnaires. The questionnaire has 4 sections divided into: demographics, green procurement adoption, drivers of green procurement, and challenges of adopting green procurement. A five-point Likert scale was used for questions regarding the specific objectives of the study.

These measures used in this study were tested for content validity and reliability through the pre-testing of the questionnaire. Content validity is the technique used to ensure that the measures adequately quantify the concepts that they are supposed to be tested (Sekaran, 2006). Reliability evaluates accuracy of the measures through assessing the internal stability and consistency of items in each variable (Hair et al., 2005).

Validity of the measures was pre-tested among administrators in the University of Nairobi (UoN) as well as on 5 colleges of the University of Nairobi with the main focus on procurement function. Their responses on the quality of the questions as well as the comprehensibility of the same were taken into consideration and final amendments made before finally administering the questionnaires to the target respondents. The reliability of measures was pre-tested by computing Cronbach's alpha coefficients on the 5 colleges. All the values of the coefficients were checked against the acceptable of 0.60-0.80 to ensure an acceptable level of reliability (Nunnally, 1978).

After the pre-testing, modifications were made in the questionnaire to reduce the possibility of ambiguity of some of the questions of the questionnaire before

administering it to the respondents as per the target firms. After completing the pre-testing process, the survey questionnaire was administered using a combination of methods including drop-and-pick later methods, self-administration, and e-mails.

A 4 week period was given for the data collection period. The respondents were the procurement managers. Where they were not available in the organisation, the Finance/Accounting managers was the respondent. This is because sometimes an organisation might not have a procurement manager and the role may be assumed by the Finance Manager. The procurement managers were used in this study because they have the knowledge of the procurement practices in their organisations more than any other person and therefore provide reliable responses on the same. One questionnaire was sent to each of the organisations.

3.5 Data Analysis

Once the data was collected from the field, it was checked for completeness, coded and entered. The entered data was cleaned for any errors before final analysis. First, scale reliability was performed using Cronbach's alpha ($\alpha = 0.765$).

The demographic data (section 1) is analysed using descriptive statistics especially the percentages. In order to determine the extent to which public sector organisations in Kenya have adopted green procurement practices, an analysis of questions relating to this section is done using mean scores and standard deviations. The mean scores show what green procurement measures have been adopted and which ones have not been adopted.

Further, to establish the drivers of green procurement in the public sector, the retained drivers are analysed using mean scores and standard deviations. The mean scores show the extent to which the drivers are significant or not. Lastly, to determine the challenges of adopting green procurement, the mean scores and standard deviations are used. The means scores explain the extent to which each of the challenges is influential for the public sector organisations in adopting green procurement.

Section 4 of the questionnaire was analysed using factor analysis in order to reduce the factors to only significant ones. This helped in testing the validity of measures used in the study. The Kaiser-Meyer-Olkin measure and the Bartlett's test of sphericity were significant and valid for the questions relating to challenges of green procurement. The instrument therefore passed validity tests. Normally a KMO value of 0.5 and above is considered for analysis (Hair, Black, Babin and Anderson 2010). Therefore questions on adoption of green procurement practices and drivers of green procurement practices were not factor analysed after they failed the KMO value threshold

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of data analysis and the discussion of findings. From the 63 questionnaires administered, 36 were collected and used in the analysis. This shows that the response rate was 57%. This is considered a good response rate given that studies in the same areas have had almost similar or lower response rates. For instance, Walker and Brammer's (2009) response rate was 10%, ElTayeb et al.'s (2009) was 23.2%, Salaam's (2008) was 90%, Chien and Shih's (2007) was 30% while Holt and Ghobadian's (2009) was 13%.

This chapter is organised as follows. Section 4.2 presents results of descriptive analysis on the demographics of the respondents and the companies. Section 4.3 presents the results on the extent of adoption of green procurement practices. Section 4.4 shows the results on the drivers of green procurement while section 4.5 shows the results on the challenges facing adoption of green procurement.

4.2 Sample Characteristics

4.2.1 Number of employees

The study found out that 17% of the companies had a workforce of 100-249, 36% had 250-449 while the remaining 47% had a workforce of over 500 employees. These results are shown in table 4.1. This means that most parastatals are large with over 250 employees.

Table 4.1: Number of employees

No. Of employees	Frequency	Percentage
100-249	6	17
250-449	13	36
500+	17	47
Total	36	100

Source: Research data

4.2.2 Supplier Contract Length

The study revealed that 67% of the firms had on average one year contract length with the suppliers. Further, 28% had contract length not exceeding 2 years while 5% had contracts not exceeding 4 years. These results are shown in table 4.2. This means that most of the supplier contracts are short term contracts of 1 year.

Table 4. 2: Supplier contract length

Contract length	Frequency	Percentage
One year	24	67
Below 2 years	10	28
Below 4 years	2	5
Total	36	100

Source: Research data

4.2.3 Number of suppliers

The study found that for daily operations, 58% of the companies had 1-10 suppliers, 28% had 11-30 suppliers, and 14% had 31-50 suppliers. These results are summarised and presented in table 4.3. This means that most of the parastatals have very few suppliers (less than 10) for their daily operations.

Table 4. 3: Number of suppliers

No. of suppliers	Frequency	Percentage
1-10	21	58
11-30	10	28
31-50	5	14
Total	36	100

Source: Research data

4.2.4 Change in number of suppliers

The study sought to establish whether the number of suppliers had stayed the same, reduced or declined over the past three years. As shown in table 4.4, the study found that 17% of the firms noted that the number had stayed the same, 28% cited that it had reduced while 55% said that it had increased. This means that the number of suppliers has increased over the years for parastatals.

Table 4. 4: Change in number of suppliers

	Frequency	Percentage
Stayed same	6	17
Reduced	10	28
Increased	20	55
Total	36	100

Source: Research data

4.3 Adoption of Green Procurement

The respondents were asked to state the extent to which their organisations had implemented various green procurement measures. The results were analysed in two ways as shown in the following sections

4.3.1 Descriptive Analysis

Table 4.5 shows the results on the extent of adoption of green procurement practices among public corporations in Kenya using the mean scores and standard deviations. As shown, it is noted that most of the organisations were either considering or just initiating implementation of green procurement practices. The most adopted GP practice was; Commitment of GSCM from senior managers which had the highest mean score of 4.67 followed closely by Cross-functional cooperation for environmental improvements with a mean score of 4.03, while the least adopted green procurement practice was ordering via email and Procuring products that are made using recycled materials which had a mean score of 1.81 and 2.03 respectively.

On average, the mean score for the adoption of green procurement practices was 3.19 with a standard deviation of 0.83. This means that the adoption of green procurement practices in the public sector was less than average. Most of these practices have not been adopted yet by the public sector organisations.

Table 4. 5: Adoption of green procurement practices in the public sector

	Mean	Std. Dev
Commitment of GSCM from senior managers	4.6667	.53452
Cross-functional cooperation for environmental improvements	4.0278	.77408
Support for GSCM from mid-level managers	3.9167	.69179
Favouring products which provide information about their effect on the environment	3.8611	.96074
Purchase products that are energy efficient or products which require less energy to manufacture	3.8056	.82183
Environmental management systems exist	3.7222	1.03126
Purchasing energy saving equipment	3.6111	.96445
Design of products to avoid or reduce use of hazardous of products and/or their manufacturing process	3.5556	.90851
Purchasing equipment that is easy to repair	3.5556	.84327
Purchase materials or parts from suppliers who are compliant with environmentally related legislation	3.5556	.93944
Buying products for which the packaging material is bio-degradable or recyclable	3.5556	.90851

Total quality environmental management	3.5000	.87831
Develop the environmental awareness of procurement staff	3.4444	.93944
Providing design specification to suppliers that include environmental requirements for purchased items	3.3333	.89443
Considering suppliers who have acquired or are in the process of acquiring ISO 14000 Certification	3.3333	1.01419
Environmental compliance and auditing programs	3.1111	.94952
Cooperation with suppliers for environmental objectives	3.0278	.94070
Design of products for reuse, recycle, recovery of material, component parts	2.9167	.84092
Design of products for reduced consumption of material/energy	2.5278	.65405
Second-tier supplier environmentally friendly practice evaluation	2.3889	.64488
Develop and maintain a database of suppliers in which information relating to environmental conduct is maintained	2.2778	.81455
Require suppliers to limit packaging to the minimum necessary to protect the items supplied	2.1111	.91894
Environmental audit for suppliers' internal management	2.0833	.64918
Procure products that are made using recycled materials	2.0278	.73625
Ordering via email (paperless ordering)	1.8056	.57666
Average	3.188	0.8332

Key: 1 = not considering it, 2 = planning to consider it, 3 = considering it currently, 4 = initiating implementation, 5 = implementing successful

4.3.2 Factor Analysis

According to Hair et al (2010), for factor analysis to be used, the KMO value which measures sampling adequacy should be greater than 0.5. From appendix 13, the KMO measure is 0.31 indicating that factor analysis is not appropriate for further analysis of the data and hence factor analysis was not done. From the same appendix, we can see that the Bartlett's test of sphericity is significant. That is, its associated probability is less than 0.05. In fact, it is actually 0.000.

4.4 Drivers of Green Procurement Practices

The respondents were further asked to indicate the extent to which they considered enlisted factors in their decision to implement the various green procurement practices. The results are discussed in section 4.4.1 and 4.4.2

4.4.1 Descriptive Analysis

Table 4.6 presents the important drivers of green procurement as noted by the respondents. The mean scores indicate that there are 8 factors which the respondents considered important drivers as their mean scores were 4 or above. These included central governmental environmental regulations (4.39), enterprise environmental mission (4.22), cost of environmentally friendly goods (4.17), requirements by the organisations supplied to (4.17), supplier advances in developing environmentally friendly goods (4.11), possibility of future environmental regulations (4.06), and operational cost savings (4.03). The least important drivers were pressure from shareholders or investors (2.14), exports to other foreign countries (2.44), public opinion or societal expectations (2.53), and sales to foreign customers (2.75). All factors combined had a overall average mean score of 3.495 with a standard deviation of 0.903 this denotes that the drivers of green procurement practices in the public sector was of great importance. The full results are shown in table 4.6

Table 4. 6: Importance of drivers of green procurement

	Mean	Std. Dev
Central governmental environmental regulations	4.3889	.49441
Enterprise's environmental mission	4.2222	.59094
Cost of environmentally friendly goods	4.1667	.94112
Requirements of organisations that you supply to	4.1667	.77460
Supplier's advances in developing environmentally friendly goods	4.1111	.70823
Possible environmental legislation in the future	4.0556	.67377
Regional environmental regulations	4.0278	.73625
Provides operational cost savings	4.0000	.86189
Competitors' green strategies	3.9444	.71492
Cost for disposal of hazardous materials	3.9444	1.14504
Cost of environmentally friendly packaging	3.9444	1.04045
Environmental partnership with suppliers	3.7778	1.01731
In order to reduce the health and safety risk associated with our goods, services or operational practices	3.6667	1.21890
Influence of your own suppliers that provide goods and services to your organization	3.5556	.99841
Maintaining or presenting an environmentally or socially responsible Image	3.4167	1.07902
The CEO (or equivalent) commitment to environmental improvement	3.3889	1.04957

Pressure from green action groups (such as Greenpeace or Friends of the Earth)	3.3056	.70991
Provides new market opportunities	3.2778	.97427
Supplier's advances in developing environmentally friendly packages	3.1389	.63932
Pressure from the insurance industry	3.0556	.92410
Culture of the organisation promotes environmental responsibility	3.0278	1.42400
In order to reduce the public's perceived risk associated with our company	3.0000	1.14642
Encouragement from organisations that you supply goods and services to	2.9167	1.18019
Sales to foreign customers	2.7500	.76997
Public opinion/societal expectation	2.5278	.77408
Exports to other foreign countries	2.4444	.80868
Pressure from shareholders or investors (when applicable)	2.1389	.99003
Average	3.495	0.903

Key: 1 = not at all important, 2 = not important, 3 = not thinking about it, 4 = important, 5 = extremely important

4.4.2 Factor Analysis

The Kaiser-meyer-olkin measure was 0.256 while the Bartlett's test of sphericity was significant. This very low KMO value means that factor analysis technique cannot be used for further analysis of the data (Hair et al., 2010). (See appendix 13)

4.5 Challenges in Adopting Green Procurement Practices

The respondents were asked to state the extent to which they agreed with some of the statements as the challenges facing their organisations.

4.5.1 Descriptive Analysis

Table 4.7 shows the extent to which the respondents agreed with various challenges affecting green procurement adoption in public organisations. The results show that the major challenge was insufficient knowledge on concept of green procurement with a mean of 4.14. This was followed by lack of legal enforcement with a mean of 3.97, others of significance included; short term planning over long term planning,

lack of information, lack of internal communication and lack of support or tailor-made guidance .with means of 3.97,3.91,3.89 and 3.86 respectively

The least challenges came from financial resources (1.91); purchasing habits by organisations (2.11), and top management commitment (2.19). The challenges had an overall mean score of 3.12 with a standard deviation of 0.94 this is an indication that perhaps the process of adopting GP is not an easy one. The full results are shown in table 4.9

Table 4. 7: challenges of green procurement practices adoption

	Mean	Std. Dev
Insufficient knowledge on concept of green procurement	4.1389	1.01848
Lack of government legal enforcement	3.9722	1.05522
Short term planning over long term planning	3.9722	.97060
Lack of information	3.9167	.96732
Lack of internal communication	3.8889	1.06309
Lack of support or tailor-made guidance	3.8611	.83333
Integration into management systems	3.7778	1.04502
Lack of acceptable alternatives to the present product	3.7222	.97427
Lack of clear definitions	3.6944	.62425
Availability of green products in the local market	3.6389	1.04616
Educating marketing and sales professionals	3.3056	1.06421
Uninformed advocacy groups	3.2778	1.00317
Lack of environmental specifications on products offered	3.2778	.77868
Lack of knowledge about the environmental impact of the company	3.2500	1.07902
Inappropriate organisational structure	2.6667	.92582
Changing the 'only cost' mindset	2.5556	.90851
Lack of mid-level management commitment	2.5278	.65405
High prices of green products	2.4722	1.13354
Potential barriers to trade	2.3611	.93052
Lack of market for recyclable materials	2.2222	.76012
Lack of human resources	2.1944	.92023
Lack of top management commitment	2.1944	.92023
Purchasing habits by our organization	2.1111	.85449
Lack of financial resources	1.9167	.96732
Average	3.122	0.937

Key: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree

4.5.2 Factor Analysis

The Kaiser-Meyer-Olkin measure was 0.558 and the Bartlett's test of sphericity was significant. Factor analysis is therefore appropriate to use since the KMO value is greater than 0.5 (Hair et al., 2010). (See appendix 13)

Table 4.8: Challenges in adopting green procurement practices

Factor		Factor Loadings	Sum of Factor loadings
1 Information flow management	Lack of internal communication	.899	5.086
	Lack of financial resources	.853	
	Educating marketing and sales professionals	.772	
	Lack of information	.756	
	Uninformed advocacy groups	.656	
	Lack of support or tailor-made guidance	.617	
	Integration into management systems	.533	
2 Organisational and market challenges	Potential barriers to trade	.834	4.141
	Lack of human resources	.724	
	Purchasing habits by our organization	.717	
	Inappropriate organisational structure	.627	
	Lack of market for recyclable materials	.626	
	High prices of green products	.613	
3 Legislative and Management support	Lack of top management commitment	.828	2.836
	Availability of green products in the local market	.731	
	Lack of mid-level management commitment	.708	
	Lack of relevant legislation	.569	
4 Definitions and Know- how	Lack of acceptable alternatives to the present product	.888	2.181
	Lack of knowledge about the environmental impact of the company	.700	
	Lack of clear definitions	.593	
5 Traditions and environmental constraints	Lack of environmental specifications on products offered	.763	2.092
	Insufficient knowledge on concept of green procurement	.703	
	Changing the 'only cost' mindset	.626	
6 Planning	Short term planning over long term planning	.893	.893
7 Government	Lack of government legal enforcement	.818	.818

Of the 25 challenges, one had an extraction value less than 0.7 and was therefore removed from the final list of variables (see appendix 8). Seven factors which accounted for the challenges were extracted during rotation (see appendix 9). The factor analysis grouped the variables into seven factors as shown in table 4.8 with an attempt being made to give a general name for all challenges grouped under a common factor. From the table, factor 1 has eight important challenges with factor loadings more than 0.7. This factor was named Information flow management which included lack of financial resources, educational marketing and sales professionals among others. Factor 2 was labelled Organisational and market challenges and had four significant challenges which included lack of human resources and Lack of support or tailor-made guidance among others

The other five factors were named as Legislative and Management support, Definitions and Know- how, Traditions and environmental constraints, Planning and Government

From the analysis measures, information flow management systems had the highest factor loading of 5.09 followed by Organisational and market challenges with factor loadings of 4.14 while management support had 2.84. Least loadings were reported on planning with 0.89, and government with 0.82

Therefore successful implementation of GP in firms will largely depend on its ability manage information flow.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of research findings in section 5.2, conclusions of the study in section 5.3, recommendations for policy and practice in section 5.4, limitations of the study in section 5.5, and suggestions for further research in section 5.6.

5.2 Summary of Findings

This study was carried out on public sector organisations in Kenya. The objectives were to determine the green procurement practices; to establish the drivers of green procurement practices; and to determine the challenges facing green procurement adoption.

From the results, it was noted that 17% of the companies had a workforce of 100-249, 36% had a workforce of 250-449 while the remaining 47% had a workforce of over 500 employees. The study revealed that 67% of the firms had on average one year contract length with the suppliers. Further, 28% had contract length not exceeding 2 years while 5% had contracts not exceeding 4 years. The study found that for daily operations, 58% of the companies had 1-10 suppliers, 28% had 11-30 suppliers, and 14% had 31-50 suppliers. On whether the number of suppliers had stayed the same, reduced or declined over the past three years, the study found that in 17% of the firms, the number had stayed the same. This number had reduced in 28% of the firms while it had increased in 55% of the firms.

The study also found that most of the organisations were either considering or just initiating implementation of green procurement practices. This is because most of the practices had a mean of between 3 and 4. This is similar in South Africa as Hanks et al., (2008) notes that very little along the lines of green procurement practices are currently in place despite the campaign to go green. Environmental experts warn that this is measurement levels are not adequate to realise long term environmental impact.

On the drivers of green procurement, the mean scores indicated that there were eight factors which the respondents considered important drivers. These included environmental legislation, enterprise's environmental mission, cost of environmentally friendly goods, requirements by the organisations supplied to, supplier advances in developing environmentally friendly goods, possibility of future environmental regulations, and operational cost savings. The least important drivers were pressure from shareholders or investors, exports, public opinion or societal expectations, and sales to foreign customers, among other drivers. This findings is in general agreement with Walker et al., (2008) a study which found that internal barriers which included cost and lack of legitimacy and external barriers which included regulation, poor supplier commitment and industry specific barriers were of significance in GSCM.

On the challenges of green procurement adoption, the results of descriptive analysis revealed that the major challenge was insufficient knowledge on the concept of green procurement, this finding closely correlate with findings of Buy-Environmental (2011). Other challenges include lack of legal enforcement, short term planning over long term planning, lack of information, lack of internal communication, lack of

support or tailor-made guidance among other challenges. The challenge that had the least impact was lack of financial resources. The factor analysis grouped the variables into seven main challenges which include Information flow management, Organisational and market challenges, Legislative and Management support, Definitions and Know-how, Traditions and environmental constraints, Planning and Government

5.3 Conclusion

This study sought to determine the extent to which parastatals in Kenya have adopted green procurement practices. The results have shown that Kenya still lags behind as far as GP adoption is concerned. Most of these practices are still being considered for adoption. Thus it concludes that the green procurement practices have been, to a low extent, adopted by the public sector organisations in Kenya.

The study wanted to determine the drivers of green procurement adoption in parastatals in Kenya. The results reveal that there were a number of drivers for the adoption of green procurement practices by public sector firms in Kenya. Among these were environmental legislations, enterprise's environmental mission, cost of environmentally friendly goods, requirements by the organisations supplied to, supplier advances in developing environmentally friendly goods, possibility of future environmental regulations, and operational cost savings from adopting green procurement practices. Thus the level of green procurement practices adoption in public sector organisations is affected by a number of factors envisaged in this study.

This study was keen to highlight the challenges facing parastatals in adopting green procurement practices. There were a number of challenges that the study found which

had affected the level of adoption of green procurement practices in the public sector. Some of these challenges were insufficient knowledge on concept of green procurement, lack of legal enforcement, short term planning over long term planning, lack of information, lack of internal communication, and lack of support or tailor-made guidance. The study therefore concludes that a number of challenges have influenced the level of adoption of green procurement practices among public sector organisations in Kenya. Indeed Wittig (2003) noted that many local and international firms do not participate in public procurement due to governments favouring other supplies or corruption.

5.4 Recommendations

The study makes a number of recommendations for policy and for practice. First, with the global warming and environmental concerns from all sectors, there is need for the public sector organisation in Kenya to adopt green procurement practices in order to help in the efforts to conserve the environment. Currently, this is not the case and the major reason is because of lack of knowledge on the same.

Given the limited knowledge on green procurement practices, it is important for public sector organisations to train their staff, and especially the procurement staff, on what green procurement is and the benefits of green procurement for organisations. This way, the staff will be motivated to adopt the practice in the procurement function of their organisations and therefore force the suppliers to follow suit.

There is also need for legislation in this area to enhance green procurement practices in organisations. At the moment, the Public Procurement and Disposal Act 2005 is

silent on green procurement. With legislation in place and enforcement of such laws by relevant agencies such as NEMA, the practice of green procurement would be adopted by most of the organisations in the public sector.

5.5 Limitations of the Study

The study faced a number of limitations. Firstly, as seen from the response rate of 57%, it was hard to get more data from the companies. This can be attributed to the fact that the study focused on the top level managers in the procurement function and given their busy schedules, taking their time to respond to the questionnaires was a major issue.

Secondly, the study depended purely on the questionnaire responses for analysis. It was not possible to get in-depth information on some of the issues which could have been possible if follow-up interviews would be done. The responses are therefore right to the extent of information provided by the respondents.

5.6 Suggestions for Further Research

The study suggests that a more qualitative study with the inclusion of other stakeholders such as NEMA be done. A combination of primary data such as the use of interviews together with questionnaire and the use of focused group discussions could bring out some of the issues which this study might have missed.

Future studies should also focus on whether such green practices translate to value to the firm. This can be done by performing an analysis of the impact of such practices on firm performance by using a number of performance measures.

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APPENDICES

Appendix 1: List of Parastatals

1. Agricultural Development Corporation
2. Agricultural Finance Corporation
3. Agro-Chemical & Food Company Ltd
4. Athi Water Services Board
5. Bomas of Kenya Ltd
6. Capital Markets Authority
7. Catchment Area Advisory Committee
8. Catering Tourism and Training Development Levy Trustees
9. Central Water Services Board
10. Chemilil Sugar Company Limited
11. Coast Development Authority
12. Coast Water Services Board
13. Coffee Board Of Kenya
14. Coffee Research Foundation
15. Commission for Higher Education
16. Communication Commission of Kenya
17. Consolidated Bank of Kenya
18. Cooperative College of Kenya
19. Council for Legal Education
20. Deposit Protection Fund Board
21. East African Portland Cement Co.
22. Egerton University
23. Ewaso Ng'iro South Development Authority
24. Export Processing Zone Authority
25. Export Promotion Council
26. Gilgil Telecommunications industries
27. Higher Education Loans Board
28. Horticultural Crops Development Authority
29. Horticulture Crops Development Authority
30. Industrial and Commercial Development Corporation
31. Industrial Development Bank

32. Investment Promotion Centre
33. Jomo Kenyatta University of Agriculture and Technology
34. KASNEB
35. Kenya Agricultural Research Institute
36. Kenya Airports Authority
37. Kenya Anti-Corruption Commission
38. Kenya Broadcasting Corporation
39. Kenya Bureau of Standards
40. Kenya Bureau of Standards (KEBS)
41. Kenya Civil Aviation Authority
42. Kenya College of Communication & Technology
43. Kenya College of Communications Technology
44. Kenya Dairy Board
45. Kenya Electricity Generating Company
46. Kenya Ferry Services Limited
47. Kenya Forestry Research Institute
48. Kenya Industrial Estates
49. Kenya Industrial Property Institute
50. Kenya Industrial Research & Development Institute
51. Kenya Institute Of Administration
52. Kenya Institute of Public Policy Research and Analysis
53. Kenya Literature Bureau
54. Kenya Marine & Fisheries Research Institute
55. Kenya Maritime Authority
56. Kenya Meat Commission
57. Kenya National Assurance Company
58. Kenya National Examination Council
59. Kenya National Library Service
60. Kenya National Shipping Line
61. Kenya National Trading Corporation Limited
62. Kenya Ordinance Factories Corporation
63. Kenya Pipeline Company Ltd
64. Kenya Plant Health Inspectorate Services

65. Kenya Ports Authority
66. Kenya Post Office Savings Bank
67. Kenya Railways Corporation
68. Kenya Re-insurance Corporation
69. Kenya Revenue Authority
70. Kenya Roads Board
71. Kenya Safari Lodges & Hotels
72. Kenya Seed Company Ltd
73. Kenya Sisal Board
74. Kenya Sugar Board
75. Kenya Sugar Research Foundation
76. Kenya Tourist Board
77. Kenya Tourist Development Corporation
78. Kenya Utalii College
79. Kenya Water Institute
80. Kenya Wildlife Service
81. Kenya Wine Agencies Limited
82. Kenyatta International Conference Centre
83. Kenyatta University
84. Kerio Valley Development Authority
85. Lake Basin Development Authority
86. Lake Victoria South Water Service Board
87. Lake Victoria South Water Service Board
88. Local Authority Provident Fund
89. Maseno university
90. Moi University
91. National Aids Control Council
92. National Bank of Kenya
93. National Cereals and Produce Board
94. National Council for Law Reporting
95. National Environmental Management Authority
96. National Hospital Insurance Fund
97. National Housing Corporation

98. National Irrigation Board
99. National Museums of Kenya
100. National Oil Corporation of Kenya Ltd
101. National Social Security Fund(NSSF)
102. National Water Conservation and Pipeline Corporation
103. National Co-ordinating Agency for Population and Development
104. New K.C.C
105. NGO's Co-ordination Bureau
106. Numerical Machining Complex
107. Numerical Machining Complex
108. Nyayo Tea Zones Development Corporation
109. Nzoia Sugar Company
110. Pest Control Products Board
111. Postal Corporation of Kenya
112. Pyrethrum Board of Kenya
113. Retirement Benefits Authority
114. Rift Valley Water Services Board
115. School Equipment Production Unit
116. South Nyanza Sugar Company
117. Sports Stadia Management Board
118. Tana and Athi Rivers Development Authority
119. Tea Board Of Kenya
120. Tea Research Foundation Of Kenya
121. Teachers Service Commission
122. Telkom (k) Ltd
123. University of Nairobi
124. University of Nairobi Enterprises & Services Ltd
125. Water Resources Management Authority
126. Water Services Regulatory Board
127. Western University College of Science and Technology

Source: Office of Public Communications (Office of Government Spokesman:

Online Portal at <http://www.communication.go.ke/parastatals>



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Nairobi, Kenya

Introductory Letter

July 2011

Dear Respondent,

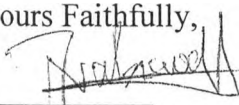
I am an MBA student at the School of Business, University of Nairobi. I'm currently undertaking my research project entitled "**Green Procurement Practices in the Public Sector: The Case of Parastatals in Kenya**". The attached questionnaire is for gathering data, which will be useful in the mentioned research.


You have been selected as one of the respondents in this study. I therefore request you to kindly facilitate the collection of the required data by answering the questions herein.

Please note that the information sought is purely for academic purposes and will be treated with utmost confidentiality. I promise that a copy of the final report will be available to you on demand.

Your cooperation will be highly appreciated.

Yours Faithfully,


Khisa Joel Nabiswa
Student


Odock Stephen
Lecturer, Department of Management Science



Appendix 3: Green Procurement Practices Questionnaire

Section 1: Demographics

1. Name of organisation
.....
2. Job title
.....
3. How many employees are there in your organisation?
1-99 []
100-249 []
250-499 []
500+ []
4. Which ministry does your organisation falls under?
.....
5. What is your average contract length with suppliers (in years?)
One year { }
Less than 2 years { }
Less than 4 years { }
4 years or above { }
6. How many suppliers does your company have for daily operations?
1 to 10 { }
11 to 30 { }
31 to 50 { }
51 and above { }
7. Has the number of suppliers to your organisation changed in the last 3 years? How?
Stayed same []
Reduced []
Increased []

Section 2: Adoption of Green Procurement Practices

8. The following questions focus on **green procurement practices** in your organisation. To what extent has your organisation implemented the following green procurement measures? Use this scale: (1 = not considering it, 2 = planning to consider it, 3 = considering it currently, 4 = initiating implementation, 5 = implementing successfully).

Practice	1	2	3	4	5
Providing design specification to suppliers that include environmental requirements for purchased items					
Cooperation with suppliers for environmental objectives					
Environmental audit for suppliers' internal management					
Second-tier supplier environmentally friendly practice evaluation					
Design of products for reduced consumption of material/energy					
Design of products for reuse, recycle, recovery of material, component parts					
Design of products to avoid or reduce use of hazardous of products and/or their manufacturing process					
Commitment of GSCM from senior managers					
Support for GSCM from mid-level managers					
Cross-functional cooperation for environmental improvements					
Total quality environmental management					
Environmental compliance and auditing programs					
ISO 14001 certification					
Environmental management systems exist					
Procure products that are made using recycled materials					
Ordering via email (paperless ordering)					
Purchasing equipment that is easy to repair					
Develop the environmental awareness of procurement staff					
Favouring products which provide information about their effect on the environment					
Require suppliers to limit packaging to the minimum necessary to protect the items supplied					
Purchase materials or parts from suppliers who are compliant with environmentally related legislation					
Purchase products that are energy efficient or products which require less energy to manufacture					
Considering suppliers who have acquired or are in the process of acquiring ISO 14000 Certification					
Buying products for which the packaging material is bio-degradable or recyclable					
Develop and maintain a database of suppliers in which information relating to environmental conduct is maintained					
Purchasing energy saving equipment					
Other(s) (please specify)					

Section 3: Drivers of green procurement practices

9. How important do you consider the following factors as influencing your decisions to implement green procurement practices in the organisation? Use the scale below: (1 = not at all important, 2 = not important, 3 = not thinking about it, 4 = important, 5 = extremely important).

Driver	1	2	3	4	5
Central governmental environmental regulations					
Regional environmental regulations					
Possible environmental legislation in the future					
Exports to other foreign countries					
Sales to foreign customers					
Supplier's advances in developing environmentally friendly goods					
Supplier's advances in developing environmentally friendly packages					
Environmental partnership with suppliers					
Competitors' green strategies					
Industrial professional group activities					
Enterprise's environmental mission					
Cost for disposal of hazardous materials					
Cost of environmentally friendly goods					
Cost of environmentally friendly packaging					
In order to reduce the health and safety risk associated with our goods, services or operational practices					
In order to reduce the public's perceived risk associated with our company					
Culture of the organisation promotes environmental responsibility					
The CEO (or equivalent) commitment to environmental improvement					
Pressure from employees					
Provides new market opportunities					
Provides operational cost savings					
Requirements of organisations that you supply to					
Encouragement from organisations that you supply goods and services to					
Pressure from individual consumers/service users					
Influence of your own suppliers that provide goods and services to your organisation					
Maintaining or presenting an environmentally or socially responsible Image					
Public opinion/societal expectation					
Pressure from green action groups (such as Greenpeace or Friends of the Earth)					
Pressure from the insurance industry					
Pressure from shareholders or investors (when applicable)					
Other(s) (please specify)					

Section 4: Challenges in Adopting Green Procurement Practices

To what extent do you agree that the following are the challenges facing your organisation as far as adoption of green procurement practices is concerned? Use the following key: (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree).

	1	2	3	4	5
Uninformed advocacy groups					
Lack of financial resources					
Lack of human resources					
Lack of top management commitment					
Lack of mid-level management commitment					
Lack of internal communication					
Inappropriate organisational structure					
Lack of support or tailor-made guidance					
Lack of information					
Lack of knowledge about the environmental impact of the company					
Lack of government legal enforcement					
Lack of market for recyclable materials					
Short term planning over long term planning					
Lack of clear definitions					
Integration into management systems					
Educating marketing and sales professionals					
Potential barriers to trade					
Changing the 'only cost' mindset					
Lack of relevant legislation					
High prices of green products					
Insufficient knowledge on concept of green procurement					
Availability of green products in the local market					
Lack of acceptable alternatives to the present product					
Lack of environmental specifications on products offered					
Purchasing habits by our organisation					
Other(s) (please specify)					

Thank you for your participation.

Appendix 4: Green Procurement Practices Initial Solution

	Initial	Extraction
Providing design specification to suppliers that include environmental requirements for purchased items	1.000	.818
Cooperation with suppliers for environmental objectives	1.000	.786
Environmental audit for suppliers' internal management	1.000	.821
Second-tier supplier environmentally friendly practice evaluation	1.000	.781
Design of products for reduced consumption of material/energy	1.000	.731
Design of products for reuse, recycle, recovery of material, component parts	1.000	.845
Design of products to avoid or reduce use of hazardous of products and/or their manufacturing process	1.000	.828
Commitment of GSCM from senior managers	1.000	.726
Support for GSCM from mid-level managers	1.000	.939
Cross-functional cooperation for environmental improvements	1.000	.888
Total quality environmental management	1.000	.770
Environmental compliance and auditing programs	1.000	.911
ISO 14001 certification	1.000	.653
Environmental management systems exist	1.000	.805
Procure products that are made using recycled materials	1.000	.874
Ordering via email (paperless ordering)	1.000	.893
Purchasing equipment that is easy to repair	1.000	.811
Develop the environmental awareness of procurement staff	1.000	.888
Favouring products which provide information about their effect on the environment	1.000	.838
Require suppliers to limit packaging to the minimum necessary to protect the items supplied	1.000	.916
Purchase materials or parts from suppliers who are compliant with environmentally related legislation	1.000	.872
Purchase products that are energy efficient or products which require less energy to manufacture	1.000	.795
Considering suppliers who have acquired or are in the process of acquiring ISO 14000 Certification	1.000	.851
Buying products for which the packaging material is bio-degradable or recyclable	1.000	.844
Develop and maintain a database of suppliers in which information relating to environmental conduct is maintained	1.000	.829
Purchasing energy saving equipment	1.000	.840
Extraction Method: Principal Component Analysis.		

Appendix 5: GPP Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.177	16.066	16.066	4.177	16.066	16.066	2.768	10.646	10.646
2	3.650	14.039	30.105	3.650	14.039	30.105	2.569	9.879	20.525
3	2.990	11.501	41.606	2.990	11.501	41.606	2.427	9.333	29.858
4	2.318	8.915	50.521	2.318	8.915	50.521	2.391	9.198	39.056
5	1.765	6.788	57.309	1.765	6.788	57.309	2.323	8.935	47.990
6	1.697	6.528	63.837	1.697	6.528	63.837	1.982	7.625	55.615
7	1.440	5.539	69.376	1.440	5.539	69.376	1.890	7.269	62.884
8	1.335	5.133	74.509	1.335	5.133	74.509	1.867	7.179	70.064
9	1.135	4.366	78.876	1.135	4.366	78.876	1.677	6.450	76.514
10	1.042	4.008	82.883	1.042	4.008	82.883	1.656	6.370	82.883
11	.797	3.064	85.948						
12	.687	2.642	88.590						
13	.588	2.263	90.854						
14	.450	1.732	92.586						
15	.376	1.448	94.034						
16	.366	1.409	95.442						
17	.232	.893	96.335						
18	.205	.789	97.124						
19	.181	.696	97.820						
20	.158	.606	98.426						
21	.154	.593	99.019						
22	.096	.369	99.387						
23	.075	.288	99.675						
24	.039	.151	99.826						
25	.033	.125	99.952						
26	.013	.048	100.000						

Extraction Method: Principal Component Analysis.

Appendix 6: Drivers of GPP Initial Solution

	Initial	Extraction
Central governmental environmental regulations	1.000	.733
Regional environmental regulations	1.000	.835
Possible environmental legislation in the future	1.000	.758
Exports to other foreign countries	1.000	.886
Sales to foreign customers	1.000	.889
Supplier's advances in developing environmentally friendly goods	1.000	.782
Supplier's advances in developing environmentally friendly packages	1.000	.827
Environmental partnership with suppliers	1.000	.884
Competitors' green strategies	1.000	.792
Industrial professional group activities	1.000	.668
Enterprise's environmental mission	1.000	.808
Cost for disposal of hazardous materials	1.000	.813
Cost of environmentally friendly goods	1.000	.831
Cost of environmentally friendly packaging	1.000	.825
In order to reduce the health and safety risk associated with our goods, services or operational practices	1.000	.807
In order to reduce the public's perceived risk associated with our company	1.000	.832
Culture of the organisation promotes environmental responsibility	1.000	.839
The CEO (or equivalent) commitment to environmental improvement	1.000	.786
Pressure from employees	1.000	.678
Provides new market opportunities	1.000	.818
Provides operational cost savings	1.000	.831
Requirements of organisations that you supply to	1.000	.797
Encouragement from organisations that you supply goods and services to	1.000	.811
Pressure from individual consumers/service users	1.000	.690
Influence of your own suppliers that provide goods and services to your organization	1.000	.886
Maintaining or presenting an environmentally or socially responsible image	1.000	.817
Public opinion/societal expectation	1.000	.883
Pressure from green action groups (such as Greenpeace or Friends of the Earth)	1.000	.817
Pressure from the insurance industry	1.000	.769
Pressure from shareholders or investors (when applicable)	1.000	.941

Appendix 7: Drivers Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.953	19.842	19.842	5.953	19.842	19.842	4.583	15.276	15.276
2	4.096	13.654	33.497	4.096	13.654	33.497	2.859	9.529	24.806
3	3.748	12.493	45.989	3.748	12.493	45.989	2.817	9.389	34.194
4	2.205	7.350	53.340	2.205	7.350	53.340	2.714	9.046	43.240
5	1.961	6.537	59.877	1.961	6.537	59.877	2.531	8.437	51.678
6	1.755	5.850	65.727	1.755	5.850	65.727	2.075	6.917	58.594
7	1.308	4.358	70.086	1.308	4.358	70.086	1.969	6.562	65.156
8	1.152	3.841	73.926	1.152	3.841	73.926	1.778	5.926	71.082
9	1.090	3.634	77.561	1.090	3.634	77.561	1.601	5.336	76.418
10	1.065	3.551	81.111	1.065	3.551	81.111	1.408	4.694	81.111
11	.840	2.801	83.912						
12	.732	2.440	86.352						
13	.684	2.281	88.633						
14	.559	1.864	90.497						
15	.483	1.611	92.107						
16	.438	1.462	93.569						
17	.346	1.154	94.723						
18	.343	1.144	95.867						
19	.278	.927	96.794						
20	.227	.756	97.550						
21	.196	.654	98.203						
22	.134	.445	98.648						
23	.124	.414	99.062						
24	.082	.274	99.336						
25	.072	.239	99.575						
26	.043	.145	99.720						
27	.042	.139	99.859						
28	.030	.100	99.959						
29	.008	.026	99.985						
30	.004	.015	100.000						

Extraction Method: Principal Component Analysis.

Appendix 8: Challenges of GPP Initial Solution

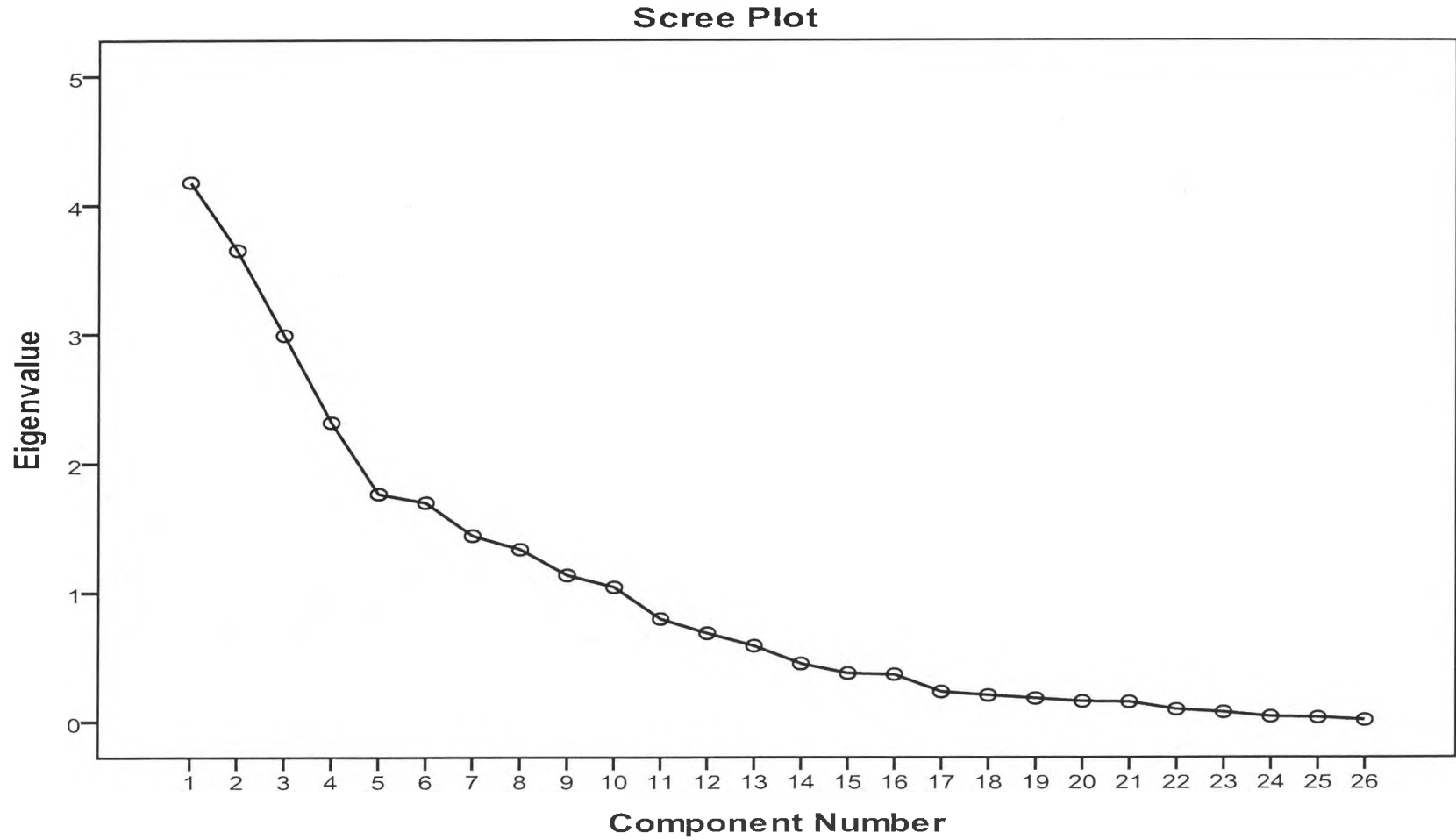
	Initial	Extraction
Uninformed advocacy groups	1.000	.809
Lack of financial resources	1.000	.907
Lack of human resources	1.000	.810
Lack of top management commitment	1.000	.830
Lack of mid-level management commitment	1.000	.816
Lack of internal communication	1.000	.842
Inappropriate organisational structure	1.000	.851
Lack of support or tailor-made guidance	1.000	.862
Lack of information	1.000	.888
Lack of knowledge about the environmental impact of the company	1.000	.833
Lack of government legal enforcement	1.000	.849
Lack of market for recyclable materials	1.000	.743
Short term planning over long term planning	1.000	.740
Lack of clear definitions	1.000	.727
Integration into management systems	1.000	.728
Educating marketing and sales professionals	1.000	.823
Potential barriers to trade	1.000	.821
Changing the 'only cost' mindset	1.000	.716
Lack of relevant legislation	1.000	.694
High prices of green products	1.000	.815
Insufficient knowledge on concept of green procurement	1.000	.753
Availability of green products in the local market	1.000	.804
Lack of acceptable alternatives to the present product	1.000	.852
Lack of environmental specifications on products offered	1.000	.781
Purchasing habits by our organisation	1.000	.744

Appendix 9: Challenges of GPP Total Variance Explained

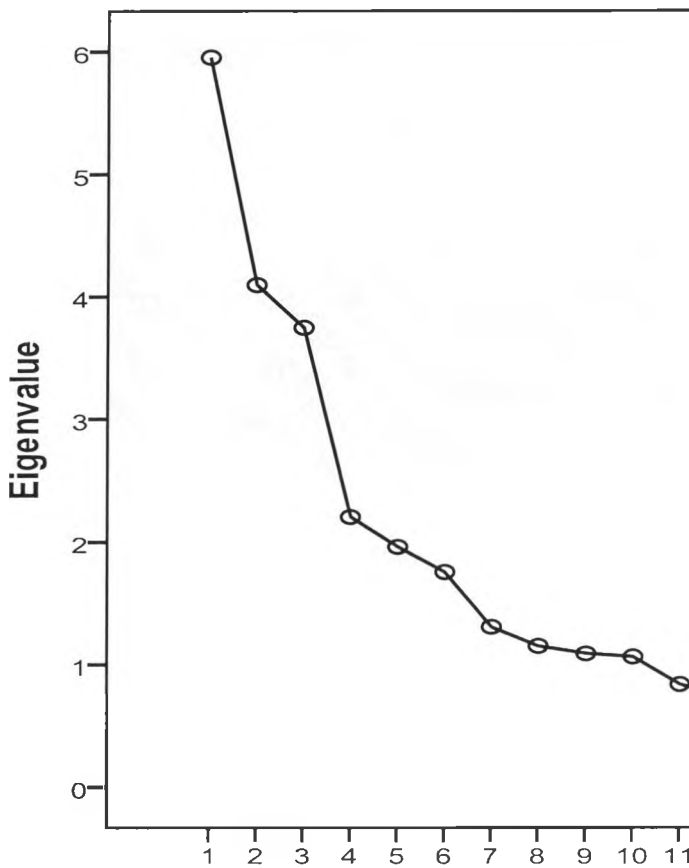
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.477	25.908	25.908	6.477	25.908	25.908	4.244	16.976	16.976
2	3.948	15.791	41.699	3.948	15.791	41.699	3.890	15.558	32.534
3	3.026	12.106	53.804	3.026	12.106	53.804	2.971	11.886	44.420
4	2.085	8.342	62.146	2.085	8.342	62.146	2.884	11.535	55.955
5	1.982	7.927	70.073	1.982	7.927	70.073	2.136	8.543	64.499
6	1.349	5.398	75.470	1.349	5.398	75.470	2.075	8.298	72.797
7	1.170	4.679	80.150	1.170	4.679	80.150	1.838	7.353	80.150
8	.812	3.247	83.397						
9	.660	2.642	86.039						
10	.642	2.569	88.608						
11	.516	2.063	90.671						
12	.450	1.799	92.471						
13	.379	1.514	93.985						
14	.282	1.127	95.112						
15	.262	1.047	96.159						
16	.232	.928	97.087						
17	.172	.689	97.776						
18	.153	.611	98.387						
19	.116	.465	98.852						
20	.092	.369	99.221						
21	.073	.294	99.515						
22	.040	.159	99.674						
23	.035	.140	99.815						
24	.026	.104	99.919						
25	.020	.081	100.000						

Extraction Method: Principal Component Analysis.

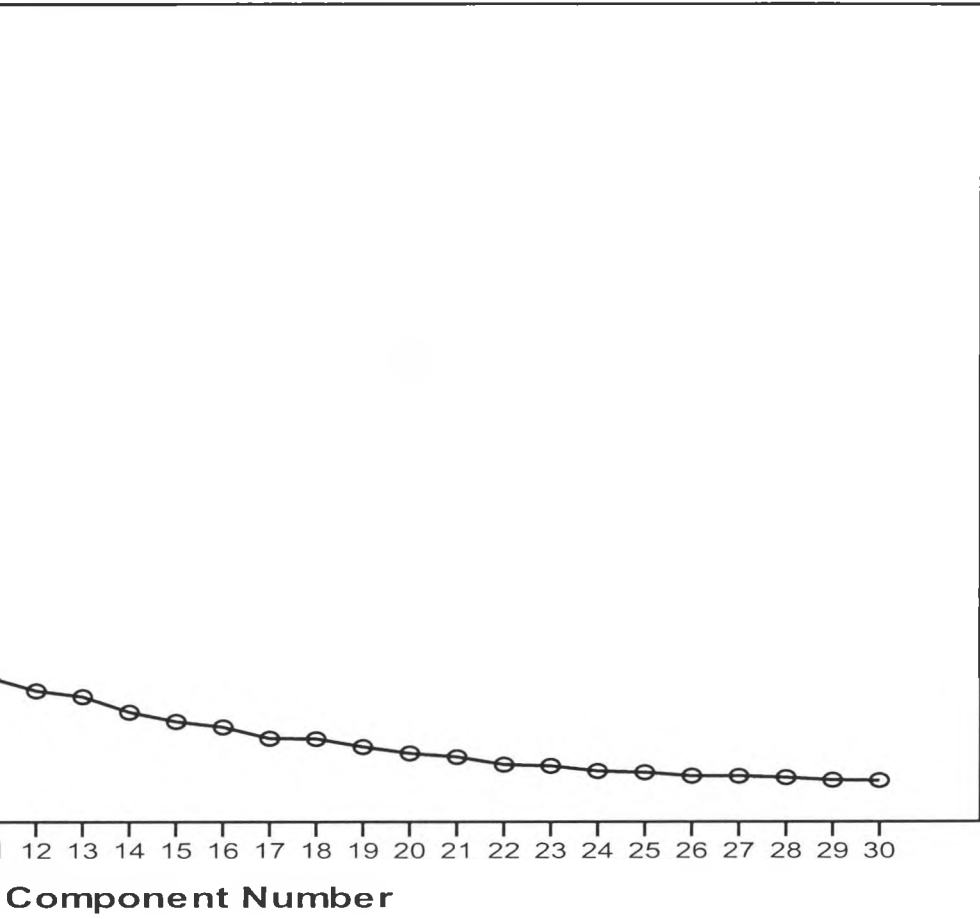
Appendix 10: GP Practices Scree Plot



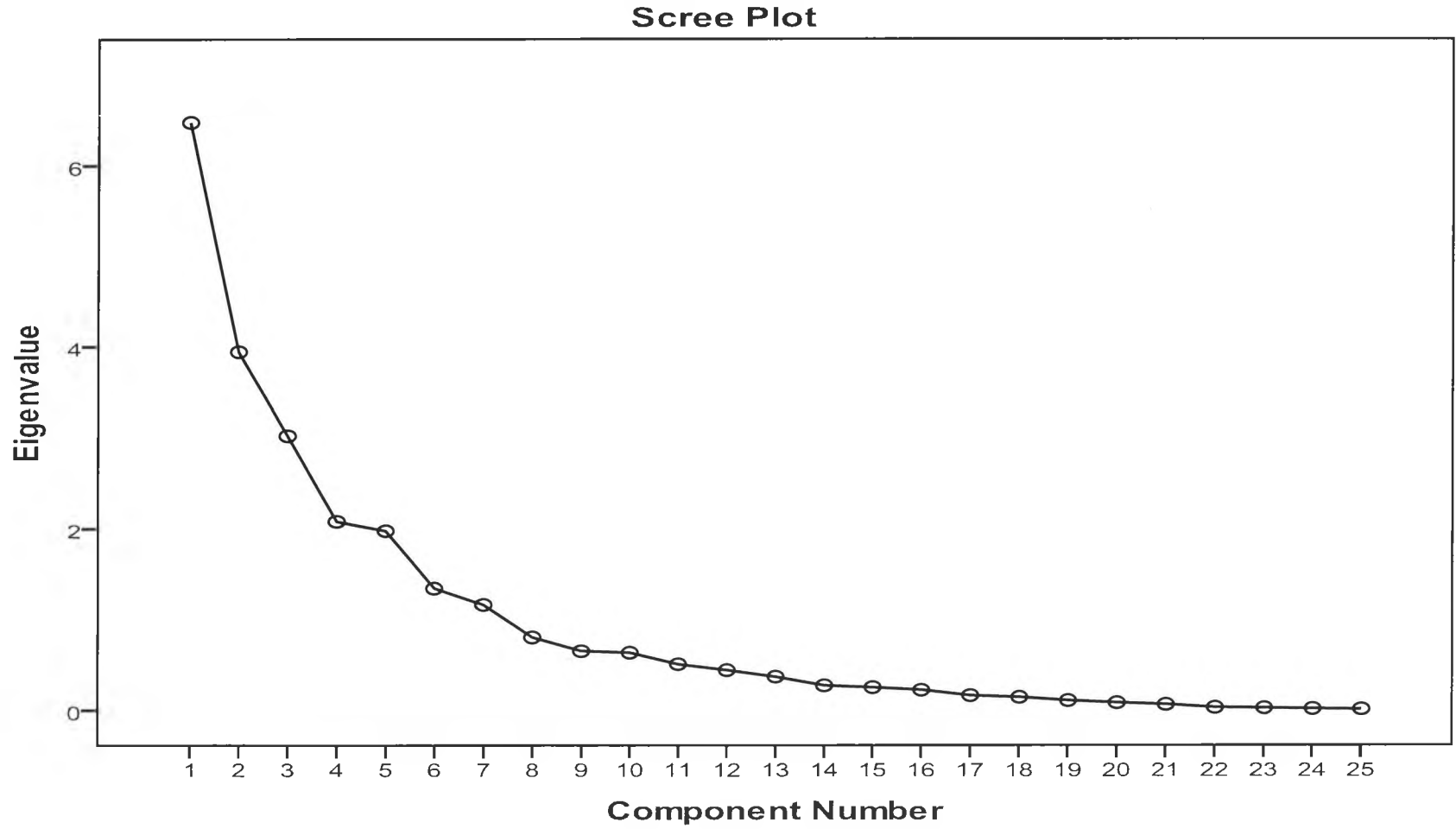
Appendix 11: Drivers scree plot



Scree Plot



Appendix 12: Challenges of GP Scree Plot



Appendix 13: KMO and Bartlett's Tests

KMO and Bartlett's Test – Green Procurement Practices

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.318
Bartlett's Test of Sphericity	Approx. Chi-Square	555.350
	df	325
	Sig.	.000

KMO and Bartlett's Test – Drivers of Green Procurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.256
Bartlett's Test of Sphericity	Approx. Chi-Square	767.209
	df	435
	Sig.	.000

KMO and Bartlett's Test – Challenges of Green Procurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.558
Bartlett's Test of Sphericity	Approx. Chi-Square	678.018
	df	300
	Sig.	.000

Appendix 14: Component Matrix – Green Procurement Practices

	Component									
	1	2	3	4	5	6	7	8	9	10
Environmental compliance and auditing programs	.839	-	-	.112	-	.139	.012	.091	-	.079
		.301	.132		.035				.228	
Design of products for reuse, recycle, recovery of material, component parts	.711	-	.101	-	.214	-	-	-	.103	.005
		.020		.009		.104	.146	.490		
Environmental audit for suppliers' internal management	.640	.085	-	-	.186	-	-	-	-	-
			.282	.179		.392	.029	.313	.023	.073
Second-tier supplier environmentally friendly practice evaluation	.634	.319	-	.303	-	-	.153	.189	.322	-
			.045		.093	.107				.014
Support for GSCM from mid-level managers	.579	-	-	-	-	.257	.179	.367	.447	-
		.059	.137	.101	.364					.072
Considering suppliers who have acquired or are in the process of acquiring ISO 14000 Certification	.579	.051	-	-	.215	.369	.446	-	-	.182
			.158	.076				.029	.260	
ISO 14001 certification	.527	-	.232	-	-	.095	-	-	.165	-
		.118		.324	.005		.175	.002		.368
Buying products for which the packaging material is bio-degradable or recyclable	-	.323	.405	.046	-	.064	-	.407	.069	-
	.507				.312		.208			.045
Favouring products which provide information about their effect on the environment	-	.267	.353	-	.448	.259	.055	.157	.017	-
	.493			.181						.265
Develop the environmental awareness of procurement staff	.361	.746	-	.236	.036	.080	-	.053	.048	-
			.195				.058			.303
Purchasing energy saving equipment	.235	.681	.096	-	.132	-	.396	-	.095	.092
			.102			.263		.201		
Purchasing equipment that is easy to repair	-	.636	.173	.094	.300	.008	.312	.149	.158	.305
	.200									
Purchase materials or parts from suppliers who are compliant with environmentally related legislation	.243	.596	.043	.091	-	.081	-	.430	-	.281
					.015		.384		.168	
Cooperation with suppliers for environmental objectives	.243	-	.742	.087	-	-	-	-	.017	.129
		.322			.095	.118	.152	.040		
Develop and maintain a database of suppliers in which information relating to environmental conduct is maintained	.011	.131	.716	.373	.111	-	-	-	-	-
						.202	.045	.238	.074	.205

Require suppliers to limit packaging to the minimum necessary to protect the items supplied	.123	-	.542	.507	.094	-	-	.435	-	-
		.002				.310	.142		.085	.168
Design of products for reduced consumption of material/energy	.288	-	.514	-	-	.045	.180	.080	-	-
		.476		.302	.107				.058	.103
Ordering via email (paperless ordering)	.205	-	-	-	.162	.458	.199	.047	.506	.217
		.486	.170	.079						
Environmental management systems exist	.117	.338	.467	-	.074	.113	-	-	.249	.333
			.426				.209	.207		
Design of products to avoid or reduce use of hazardous of products and/or their manufacturing process	.238	.050	.349	.643	-	.088	.019	-	.051	.176
					.397			.185		
Providing design specification to suppliers that include environmental requirements for purchased items	.015	-	-	.567	.423	-	.129	.057	.225	.189
		.439	.115			.073				
Cross-functional cooperation for environmental improvements	.297	.336	.288	-	.289	-	-	.288	-	.093
			.533			.289	.139		.205	
Purchase products that are energy efficient or products which require less energy to manufacture	-	.246	.036	-	-	-	-	-	-	.273
	.079			.247	.705	.241	.132	.016	.136	
Total quality environmental management	.029	.392	.220	-	-	.640	-	-	.193	-
			.080	.108			.248	.121		.161
Commitment of GSCM from senior managers	.106	-	.226	-	-	-	.518	.216	-	-
		.075		.322	.248	.368			.037	.202
Procure products that are made using recycled materials	.220	.501	-	.260	-	.250	.120	-	-	-
		.034			.160			.132	.588	.199
Extraction Method: Principal Component Analysis.										
a. 10 components extracted.										

Appendix 15: Component Matrix – Drivers of Green Procurement

	Component									
	1	2	3	4	5	6	7	8	9	10
Sales to foreign customers	-.787	.080	-.068	-.221	-.267	.108	.084	.215	.272	.001
Supplier's advances in developing environmentally friendly packages	.776	-.093	-.137	-.035	-.007	-.104	-.123	.230	-.340	.038
In order to reduce the public's perceived risk associated with our company	.747	-.284	.353	-.035	-.001	-.058	-.212	-.011	-.125	.068
Public opinion/societal expectation	-.716	.144	.233	.338	.136	-.059	.049	.130	-.362	-.090
Pressure from the insurance industry	.708	.035	.069	.419	-.270	.010	.061	.057	-.040	.066
Influence of your own suppliers that provide goods and services to your organisation	.694	.077	-.478	-.101	-.219	-.089	-.151	.130	.129	-.219
Cost of environmentally friendly packaging	.668	-.236	-.307	.100	-.033	.217	.106	.253	-.061	.303
Encouragement from organisations that you supply goods and services to	-.650	.227	-.457	.050	.221	.086	.187	-.109	.112	.098
Industrial professional group activities	.441	.316	-.080	.347	.294	.025	.064	-.210	.184	.280
Cost of environmentally friendly goods	-.179	.768	.108	.165	-.154	.089	-.132	.213	-.257	-.099
Environmental partnership with suppliers	-.294	.755	-.065	-.102	-.347	-.022	-.161	-.217	-.134	-.025

Culture of the organisation promotes environmental responsibility	.469	.575	.165	-.255	.212	.242	-.193	.030	.227	-.051
Maintaining or presenting an environmentally or socially responsible Image	-.034	-.564	-.058	-.159	.131	.412	-.419	.257	.187	.075
Pressure from shareholders or investors (when applicable)	.430	.562	-.253	-.263	-.262	-.399	.185	.142	.115	.106
Pressure from individual consumers/service users	-.186	.515	-.035	.284	-.445	.047	-.275	-.129	-.123	.022
Supplier's advances in developing environmentally friendly goods	.256	.464	.419	-.110	-.073	.460	.176	.198	-.107	-.124
Regional environmental regulations	.152	.373	-.620	.123	.332	.344	.069	.093	.045	.172
Possible environmental legislation in the future	-.163	.428	-.612	.243	.036	-.150	-.047	.238	.115	.139
Competitors' green strategies	.412	.237	.595	.292	-.180	-.018	.068	.048	.093	.279
Central governmental environmental regulations	-.137	.177	.543	.137	.325	-.077	.467	.119	.140	.072
In order to reduce the health and safety risk associated with our goods, services or operational practices	.318	.047	.518	.006	.333	-.358	-.193	-.284	.165	-.226
Enterprise's environmental mission	.386	.188	-.516	.170	.044	.360	.070	-.294	-.023	-.325
Pressure from employees	.160	.256	.203	-.624	-.068	.072	.324	.154	.130	-.019

Exports to other foreign countries	-.060	.074	.461	.545	-.334	-.137	-.118	.100	.453	.086
Requirements of organisations that you supply to	.184	.428	.492	-.515	-.062	.231	-.094	-.079	.032	-.007
Provides new market opportunities	.303	.388	.012	.367	.451	.174	-.076	.034	.198	-.402
Provides operational cost savings	-.300	-.145	.501	.213	.006	.619	-.062	.035	-.129	.137
Pressure from green action groups (such as Greenpeace or Friends of the Earth)	.481	-.244	.022	.175	-.210	.090	.586	-.098	-.155	-.257
Cost for disposal of hazardous materials	-.079	.244	.151	.027	.499	-.378	-.097	.513	-.188	-.157
The CEO (or equivalent) commitment to environmental improvement	.140	.410	.054	-.244	.397	-.086	-.041	-.311	-.257	.455
Extraction Method: Principal Component Analysis.										
a. 10 components extracted.										

Appendix 16: Component Matrix – Challenges of Green Procurement

Component Matrix ^a							
	Component						
	1	2	3	4	5	6	7
Inappropriate organisational structure	.770	.086	-.303	.171	-.004	.323	.160
High prices of green products	.733	.118	.237	.153	-.423	.066	.042
Potential barriers to trade	.731	.376	.114	.009	-.145	.111	.314
Availability of green products in the local market	-.707	-.235	.425	-.042	-.088	.102	.222
Lack of top management commitment	.706	.331	-.180	.031	-.022	-.048	-.432
Educating marketing and sales professionals	.692	-.524	.002	.112	.206	-.099	.074
Uninformed advocacy groups	-.648	.249	-.086	.306	-.131	.293	-.351
Lack of relevant legislation	-.619	-.179	-.278	-.181	.005	-.054	.407
Lack of support or tailor-made guidance	-.590	.481	-.157	.083	-.039	.414	.277
Lack of market for recyclable materials	.572	.397	.214	-.144	-.417	-.121	.056
Purchasing habits by our organisation	.530	.374	-.395	.028	-.058	-.280	.292
Lack of financial resources	.304	-.801	.188	-.168	.084	.220	.233
Lack of internal communication	-.548	.636	.158	.146	-.230	-.135	-.144
Lack of human resources	.567	.574	-.069	.147	.279	.041	.231
Lack of mid-level management commitment	.438	.508	-.381	-.323	.154	.176	-.250
Lack of acceptable alternatives to the present product	.137	.089	.750	-.215	-.191	.402	-.133
Lack of knowledge about the environmental impact of the company	.357	-.446	.648	.171	-.139	-.016	-.195
Lack of clear definitions	.389	.212	.604	-.119	.312	.188	.135
Integration into management systems	-.278	.541	.562	.013	.198	.017	.059
Insufficient knowledge on concept of green procurement	-.089	.223	.097	-.680	.470	-.044	-.015
Changing the 'only cost' mindset	.345	-.186	.229	.648	.282	.102	.010
Lack of environmental specifications on products offered	.070	.302	.470	-.559	-.153	-.353	.055
Lack of information	-.378	.475	.269	.532	-.210	-.219	.268
Short term planning over long term planning	-.143	.376	.091	.105	.275	.695	-.014
Lack of government legal enforcement	.003	.049	.323	.331	.576	-.544	-.077
Extraction Method: Principal Component Analysis.							
a. 7 components extracted.							

Appendix 17: Rotated component matrix – Green Procurement Practices

	Component									
	1	2	3	4	5	6	7	8	9	10
Design of products for reuse, recycle, recovery of material, component parts	.865	.170	.113	.149	.020	.139	.016	-.015	-.066	-.094
Environmental audit for suppliers' internal management	.840	-.126	.107	-.157	.010	-.139	.082	.156	-.006	.117
Require suppliers to limit packaging to the minimum necessary to protect the items supplied	-.166	.842	.153	-.030	-.056	-.194	.040	.282	-.175	.052
Develop and maintain a database of suppliers in which information relating to environmental conduct is maintained	.106	.817	-.243	.035	.187	.145	.104	-.082	-.091	.085
Cooperation with suppliers for environmental objectives	.137	.659	.001	.477	-.099	.080	-.241	.039	.156	.074
Design of products to avoid or reduce use of hazardous of products and/or their manufacturing process	.026	.590	.303	.156	.093	-.010	.212	-.408	.272	-.265
Support for GSCM from mid-level managers	.051	-.179	.897	.128	-.118	.171	-.059	-.026	.041	.186
Second-tier supplier environmentally friendly practice evaluation	.287	.209	.739	-.152	.243	-.049	.143	.048	-.033	-.002
Environmental compliance and auditing programs	.466	-.006	.491	.425	-.339	-.215	.302	.114	-.035	-.075
Ordering via email (paperless ordering)	-.058	.124	-.007	.909	-.078	.084	-.015	-.013	-.183	.022
Design of products for reduced consumption of material/energy	.087	.203	.069	.603	-.225	.105	-.146	.042	.012	.478
Considering suppliers who have acquired or are in the process of acquiring ISO 14000 Certification	.308	-.338	.286	.499	.208	-.091	.468	.063	-.190	-.004

Purchasing equipment that is easy to repair	-.242	.042	.025
Purchasing energy saving equipment	.331	.013	.079
Buying products for which the packaging material is bio-degradable or recyclable	-.418	.187	-.228
Total quality environmental management	-.112	.005	.121
Environmental management systems exist	.213	.066	-.080
Providing design specification to suppliers that include environmental requirements for purchased items	.027	.174	.127
ISO 14001 certification	.388	.099	.256
Procure products that are made using recycled materials	.037	.083	-.007
Develop the environmental awareness of procurement staff	.185	.062	.378
Cross-functional cooperation for environmental improvements	.231	.044	-.073
Purchase materials or parts from suppliers who are compliant with environmentally related legislation	-.107	.138	.285
Purchase products that are energy efficient or products which require less energy to manufacture	-.094	-.022	.007
Favouring products which provide information about their effect on the environment	-.431	.046	-.378
Commitment of GSCM from senior managers	-.034	.048	.131

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

.088	.825	.029	.049	.183	-.108	-.117
-.180	.765	.059	.202	.107	.080	.208
-.034	.477	.246	.088	-.396	.232	.273
.026	.064	.809	.180	-.037	-.005	-.224
.232	.406	.552	-.275	.268	.257	-.107
.123	.010	-.515	-.255	-.259	-.503	-.324
.149	-.286	.434	-.069	.182	-.112	.289
-.055	.085	.103	.912	.001	.104	-.049
-.498	.247	.262	.522	.170	-.122	-.118
.085	.219	.103	-.023	.834	.081	.241
-.123	.169	.112	.279	.639	.228	-.407
-.124	.020	.032	.014	.078	.867	.103
-.018	.277	.408	-.018	.217	-.448	.123
.099	.107	-.163	-.030	.064	.149	.794

a. Rotation converged in 13 iterations.

Appendix 18: Rotated Component Matrix – Drivers of Green Procurement

	Component									
	1	2	3	4	5	6	7	8	9	10
Supplier's advances in developing environmentally friendly packages	.836	-.080	.031	.243	.061	-.168	.126	.104	.055	.014
In order to reduce the public's perceived risk associated with our company	.811	-.232	.130	-.034	-.036	.109	-.275	-.066	.081	-.060
Encouragement from organisations that you supply goods and services to	-.761	.089	-.223	.016	.143	-.167	.313	.019	.167	-.001
Sales to foreign customers	-.752	.135	.115	-.039	-.327	.035	.226	-.009	-.319	-.173
Pressure from the insurance industry	.689	.085	-.033	.108	.210	.368	.109	-.144	-.048	.246
Cost of environmentally friendly packaging	.629	-.311	-.020	.117	.141	.021	.518	-.168	.046	.015
Environmental partnership with suppliers	-.305	.828	.210	.173	-.014	-.057	-.024	-.074	.146	-.012
Pressure from individual consumers/service users	-.063	.795	-.070	-.006	.037	.163	.054	-.125	-.015	-.049
Cost of environmentally friendly goods	-.088	.769	.248	-.049	.152	.086	.137	.343	.008	.029
Requirements of organisations that you supply to	.065	.194	.801	-.062	-.039	.017	-.253	-.063	.166	-.115
Pressure from employees	-.072	-.131	.749	.235	-.152	-.054	.025	.012	.019	.113
Supplier's advances in developing environmentally friendly goods	.179	.235	.723	-.245	.203	.113	.095	.099	-.048	.194
Culture of the organisation promotes environmental responsibility	.188	.121	.647	.161	.477	.078	-.097	.035	.206	-.240
Provides operational cost savings	-.062	.050	.144	-.865	-.054	.188	.084	-.053	-.056	-.067
Pressure from shareholders or investors (when applicable)	.161	.234	.321	.821	-.005	.103	.168	.039	.152	.137

Influence of your own suppliers that provide goods and services to your organisation	.513	.014	.055
Provides new market opportunities	.075	.048	.086
Enterprise's environmental mission	.155	.119	-.049
Regional environmental regulations	-.069	.033	-.010
Industrial professional group activities	.190	-.025	-.048
Exports to other foreign countries	-.013	.185	-.116
Competitors' green strategies	.398	.132	.269
Central governmental environmental regulations	-.258	-.212	.257
In order to reduce the health and safety risk associated with our goods, services or operational practices	.197	-.138	.098
Possible environmental legislation in the future	-.252	.293	-.278
Cost for disposal of hazardous materials	.004	-.001	.024
Public opinion/societal expectation	-.426	.342	-.249
The CEO (or equivalent) commitment to environmental improvement	.041	.108	.196
Pressure from green action groups (such as Greenpeace or Friends of the Earth)	.382	-.224	.034
Maintaining or presenting an environmentally or socially responsible Image	.109	-.424	-.032

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

625	.302	-.154	.123	-.189	-.234	-.094
013	.839	.115	-.140	.254	-.035	.023
127	.678	-.324	.146	-.351	-.046	.202
153	.592	-.176	.588	-.003	.267	-.086
135	.516	.323	.082	-.077	.472	.071
083	-.017	.861	-.165	-.018	-.240	-.062
107	-.005	.686	-.090	.017	.170	.154
205	.027	.439	-.109	.390	.182	.350
062	.185	.210	-.770	.169	.188	-.018
420	.264	.039	.475	.187	.069	-.139
091	.073	-.027	-.086	.883	.052	-.090
465	-.148	.019	-.015	.506	-.022	.167
050	.033	-.130	-.048	.085	.838	-.047
005	.095	-.007	.045	-.222	-.220	.715
332	-.030	-.139	.145	-.129	-.267	-.620

Appendix 19: Rotated Component Matrix – Challenges of Green Procurement

Rotated Component Matrix^a

	Component						
	1	2	3	4	5	6	7
Lack of internal communication	.899	-.099	-.056	.028	.132	-.016	.046
Lack of financial resources	-.853	-.068	-.302	.248	-.107	-.065	-.082
Educating marketing and sales professionals	-.772	.238	.148	.075	-.229	-.106	.282
Lack of information	.756	.222	-.377	.028	-.192	-.069	.288
Uninformed advocacy groups	.656	-.480	.007	-.030	-.297	.099	-.220
Lack of support or tailor-made guidance	.617	-.005	-.317	-.186	-.089	.390	-.431
Integration into management systems	.533	.055	-.187	.373	.237	.397	.232
Potential barriers to trade	-.088	.834	.203	.266	.000	.029	-.072
Lack of human resources	.065	.724	.323	-.016	-.052	.393	.142
Purchasing habits by our organisation	-.019	.717	.284	-.368	.065	-.086	.058
Inappropriate organisational structure	-.347	.627	.384	-.003	-.364	.097	-.219
Lack of market for recyclable materials	.100	.626	.276	.343	.239	-.297	-.045
High prices of green products	-.116	.613	.259	.464	-.167	-.338	-.034
Lack of top management commitment	-.053	.349	.828	.095	-.036	-.068	.063
Availability of green products in the local market	.197	-.426	-.731	.201	.078	.017	-.055
Lack of mid-level management commitment	.014	.296	.708	-.125	.229	.295	-.270
Lack of relevant legislation	.057	-.237	-.569	-.491	.154	.034	-.212
Lack of acceptable alternatives to the present product	.044	.013	-.046	.888	.159	.071	-.169
Lack of knowledge about the environmental impact of the company	-.348	-.064	-.034	.700	-.177	-.303	.307
Lack of clear definitions	-.138	.338	-.001	.593	.167	.421	.192
Lack of environmental specifications on products offered	.134	.193	-.046	.325	.763	-.136	.128
Insufficient knowledge on concept of green procurement	-.093	-.104	.074	-.018	.703	.483	.003
Changing the 'only cost' mindset	-.201	.151	.025	.245	-.626	.157	.419
Short term planning over long term planning	.183	-.049	.068	.015	-.056	.893	.163
Lack of government legal enforcement	.042	-.051	-.004	-.010	.005	.218	.818

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

Rotated Component Matrix^a

	Component						
	1	2	3	4	5	6	7
Lack of internal communication	.899	-.099	-.056	.028	.132	-.016	.046
Lack of financial resources	-.853	-.068	-.302	.248	-.107	-.065	-.082
Educating marketing and sales professionals	-.772	.238	.148	.075	-.229	-.106	.282
Lack of information	.756	.222	-.377	.028	-.192	-.069	.288
Uninformed advocacy groups	.656	-.480	.007	-.030	-.297	.099	-.220
Lack of support or tailor-made guidance	.617	-.005	-.317	-.186	-.089	.390	-.431
Integration into management systems	.533	.055	-.187	.373	.237	.397	.232
Potential barriers to trade	-.088	.834	.203	.266	.000	.029	-.072
Lack of human resources	.065	.724	.323	-.016	-.052	.393	.142
Purchasing habits by our organisation	-.019	.717	.284	-.368	.065	-.086	.058
Inappropriate organisational structure	-.347	.627	.384	-.003	-.364	.097	-.219
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Lack of relevant legislation	.057	-.237	-.569	-.491	.154	.034	-.212
Lack of acceptable alternatives to the present product	.044	.013	-.046	.888	.159	.071	-.169
Lack of knowledge about the environmental impact of the company	-.348	-.064	-.034	.700	-.177	-.303	.307
Lack of clear definitions	-.138	.338	-.001	.593	.167	.421	.192
Lack of environmental specifications on products offered	.134	.193	-.046	.325	.763	-.136	.128
Insufficient knowledge on concept of green procurement	-.093	-.104	.074	-.018	.703	.483	.003
Changing the 'only cost' mindset	-.201	.151	.025	.245	-.626	.157	.419
Short term planning over long term planning	.183	-.049	.068	.015	-.056	.893	.163
Lack of government legal enforcement	.042	-.051	-.004	-.010	.005	.218	.818

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.