

## CHALLENGES FACING IMPLEMENTATION OF GREEN PROCUREMENT IN MANUFACTURING SECTOR IN KENYA: A CASE STUDY OF UNGA LIMITED KENYA

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### ABSTRACT

Green procurement refers to acquisition of products and services with smaller-than-average environmental footprints. This study analyzed the challenges facing the implementation of green procurement in manufacturing sector in Kenya, a case study of Unga Limited Kenya. In addressing the latter, the research aimed at establishing how organizational structure, legal and regulatory framework, cost of green procurement and firm resources capacity affect the implementation of green procurement in manufacturing sector. The beneficiaries will include; the management, employees and stakeholders in Unga Limited Kenya. Descriptive research design was used and a stratified random sampling method to pick a sample of the respondents who were provided with the questionnaires. The target population comprised 126 employees from Unga Limited Kenya. A sample of 56 respondents from within each group in proportions that each group bear to the population as whole was taken using Slovin's formula:  $n=N/(1+Ne^2)$ . The data collected were analyzed by use of descriptive and inferential statistics. The quantitative data generated was keyed in and analyzed by use of Statistical Package of Social Sciences (SPSS) to generate information which was being presented using tables, charts, frequencies and percentages. The linear regression model was used to show the relationship between the dependent variable and the independent variables. The findings indicated that, currently there is lack of Structural and organizational change to support implementation of green procurement, poor legal and regulatory framework. Moreover, the cost of green procurement is relatively high and the resources required to implement green procurement are limited in manufacturing sector. The study recommended that, the organization and other stakeholders should ensure that there is Structural and organizational change to support; implementation of green procurement, improvement of legal and regulatory framework on environment, reduction of cost associated with green procurement and allocation of resources necessary for effective implementation of green procurement.

**Keywords:** *Challenges Facing Implementation of Green Procurement*

### Introduction

According to Coddington, (2013) green procurement is the purchasing of products or services which have a lower impact on the environment over their whole life cycle than the standard equivalent. It involves the integration of environmental issues into purchasing decisions based on price, performance and quality. Increasing costs of waste management, worker safety and public health concerns , and the emergence of acute and chronic environmental problems both locally and globally are just a few of the issues spurring on local communities to improve the environmental characteristics of their operations (Maignan, Hillebrand & McAlister, 2012) In the private sector, a large literature has explored engagement with sustainability in supply chain management and has highlighted benefits in the form of risk reduction and performance enhancement (Zhu, Sarkis & Geng, 2009). Sustainability in supply chain management requires a company or organization to carry out an assessment of the environmental consequences of a product at all the various stages of its lifecycle. This means considering the costs of securing raw materials, and manufacturing, transporting, storing, handling, using and disposing of the product (Zhu *et al.*, 2009).

Green procurement is rooted in the principle of pollution prevention, which strives to eliminate or to reduce risks to human health and the environment (Bolton, 2010). It means evaluating purchases based on a variety of criteria, ranging from the necessity of the purchase in the first place to the options available for its eventual disposal (Berger & Luckmann, 2007). In spite of the development of encouraging policy frameworks internationally relatively little research has addressed implementation of green procurement in a pharmaceutical sector context (Walker & Brammer, 2009). According to Odhiambo, (2008) many private firms in Kenya are working to improve the environmental performance of their operations and products and green procurement has been a logical extension of this work. Similar to public buyers, private sector organizations have in the last two decades adopted green procurement practices for specific products (e.g., recycled-content office paper, renewable energy, paints, cleaners, etc.), with a few others have developed green procurement policies that cover a wider range of products, services and environmental issues (Odhiambo, 2008). As the business benefits of these efforts become better known, green procurement is continuing to grow in the private sector (Lucas, 2007).

For manufacturing and process-oriented firms, green procurement practices look at the materials, substances and chemicals in the products and services they provide (Theyel, 2010). Subsequently, this approach looks beyond the company's "gates" to include the materials, substances and chemicals its suppliers use. According to Stephen & Helen, (2011) the ongoing efforts to reduce costs, leading companies in Kenya use life-cycle assessment and material tracking tools to identify materials, substances and chemicals in their products that pose significant environmental, health and safety risks and re-design their products to reduce or eliminate such materials. The Kenya government has put in place a wide range of policy, institutional and legislative to govern all business activities to ensure there is protection of the environment (Odhiambo, 2008)

## Statement of the Problem

According to Marron, (2013) environmental issues have become a subject of critical concern for businesses in recent years worldwide. Environmental obligations have grown substantially as society becomes more conscious of its environment and legislation relating to the environment is increasing in number that requires companies to be environmentally responsible (Zhu, Sarkis & Geng, 2009). In light of increasing costs of waste management, environmental degradation, public health concerns, climate change, resource depletion, and persistent global poverty, the supply management profession is increasingly being called upon to contribute to broader organizational goals of sustainable development through the inclusion of social and environmental criteria within procurement processes (Srivastava, 2013). According to Faith-Ell, Balfors & Folkeson, (2010) environmental sustainability is still among the issues included in the eight international development goals (The Millennium Development Goals) that were established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. According to Kenya Solid Waste Management (2013), industrial wastes constitute about 23% of the total waste generated in the Nairobi city, only about 25% of the estimated 1,500 tonnes of solid waste generated daily get collected.

Given the above scenario, the government of Kenya has put into place Environmental Management and Coordination Act (EMCA) 1999 that provides for the establishment of an appropriate legal and institutional framework for the management of the environment and related matters. All organizations within the country are obliged to comply with the Act (Martin, 2012). According to Kenya Solid Waste Management (2013), industrial wastes constitute about 23% of the total waste generated in the Nairobi city, only about 25% of the estimated 1,500 tonnes of solid waste generated daily get collected. This statistics indicate that environmental issues have not been fully addresses and that there are still challenges facing effective implementation of green procurement in Kenya. Recent research has shown that green procurement is related to a variety of positive benefit for both individuals and organizations; these includes eliminating the cost of waste and/or hazardous material management, positive public relations, improved employee health, reduced solid waste, conservation of water and protection of natural resources (Martinsons, 2010). Despite the important role green procurement plays in ensuring environmental performance and public health and safety, most of the studies on this subject had been conducted in developed countries, yet not much research had been conducted in Kenya leading to insufficient empirical literature on green procurement (Stephen & Helen, 2011) It was against this background that this inquiry sought to analyze challenges facing implementation of green procurement in manufacturing sector in Kenya. This research study provided valuable and unique contribution to green procurement literature. Green procurement research within manufacturing sector is particularly important considering recent studies indicate a rise in costs of waste management, worker safety and public health concerns both locally and globally, implying that it is an area that still needs addressing (Jayaraman *et al.*, 2013). Hence, the study mitigated the gaps in research by analyzing the challenges facing implementation of green procurement in manufacturing sector in Kenya.

## Objectives of the Study

### General Objective

To analyze challenges facing implementation of green procurement in manufacturing sector in Kenya.

### Specific Objectives

- i. To analyze the effect of organizational structure on implementation of green procurement in manufacturing sector in Kenya.
- ii. To establish the extent to which legal and regulatory framework affects the implementation of green procurement in manufacturing sector in Kenya.
- iii. To explore the effects of cost of green procurement on implementation of green procurement in manufacturing sector in Kenya.
- iv. To determine how firm resources capacity affect implementation of green procurement in manufacturing sector in Kenya.

### Literature Review

#### Systems Theory

Systems theory describes the interrelatedness of all parts of an organization and how one change in one area can affect multiple other parts (Li & Geiser, 2009). According to Walker & Brammer, (2009) organization act as systems interacting with their environment. Any equilibrium is constantly changing as the organization adapts to its changing environment. The foundation of systems theory is that all the components of an organization are interrelated, and that changing one variable might impact many others (Maignan *et al.*, 2012). Organizations are viewed as open systems, continually interacting with their environment. They are in a state of dynamic equilibrium as they adapt to environmental changes. According to Lozano and Valles, (2013) system theory views organizational structure as the established pattern of relationships among the parts of the organization. Of particular importance are the patterns in relationships and duties. These include themes of 1) integration (the way activities are coordinated), 2) differentiation (the way tasks are divided), 3) the structure of the hierarchical relationships (authority systems), and 4) the formalized policies, procedures, and controls that guide the organization (administrative systems) (Maignan *et al.*, 2012).

According to Menon and Menon, (2013) the relationship between the environment and organizational structure is especially important. Organizations are open systems and depend on their environment for support. The relationship between an organization and its environment is characterized by a two-way flow of information and energy (Marron, 2013). Most organizations attempt to influence their environment. While Stafford and Harthman, (2010) were among the first to explain the adoption of practices within the environmental context, several scholars have subsequently investigated the positive impact of these institutional pressures on green procurement (Zhu *et al.*, 2009). Jayaraman, Klassen and Linton, (2013) state that senior management support plays a pivotal role in the institutionalization of responsible behavior. This theory leads to H<sub>1</sub>: changes in organizational structure affect the implementation of green procurement.

#### Institutional Theory

The institutional theory is the traditional approach that is used to examine elements of public procurement (Obanda, 2010). Scott (2004) identifies three pillars of institutions as regulatory,

normative and cultural cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as basis for compliance. According to Scott, (2004) institutions are composed of cultural-cognitive and regulative elements that, together with associated activities and resources give meaning to life.

The normative pillar refers to norms (how things should be done) and values (the preferred or desirable), social obligation being the basis of compliance (Preuss, 2013). The cultural-cognitive pillar rests on shared understanding (common beliefs, symbols, shared understanding). According to Stephen & Helen, (2011) the Kenyan Government has put in place a wide range of policy, institutional and legislative frameworks to address the major causes of environmental degradation and negative impacts on ecosystems emanating from industrial and economic development programmes. This theory links the H<sub>2</sub>: Legal and regulatory framework affect implementation of green procurement.

### **Transaction Cost Economics (TCE) Theory**

Transaction Cost Economics is a central theory in the field of Strategy (Stephen & Helen, 2011). It addresses questions about why firms exist in the first place (i.e., to minimize transaction costs), how firms define their boundaries, and how they ought to govern operations (Daddi *et al.*, 2010). According to Lozano and Valles, (2013) TCE was originally developed to help to determine the efficiency in producing goods and services at low cost to ensure low prices to customers. Yet, Walker and Brammer, (2009) already addressed the importance of transaction costs in organizations when analyzing bidding process. Parties have to bid for the right quality of goods and services and the award has to go to the bidder offering the lowest price.

Walker and Brammer, (2009) argues that the problems associated with contracting solutions in the types of environments encountered in manufacturing sector transactions are likely to be difficult to tackle. Competitive bidding can indeed be an effective way of determining the lowest cost supplier in supply of green products. Uncertainty about cost, prices and demand conditions of green products leave long-term and short term contracts for manufacturing of green products and services in pharmaceutical industry inevitably incomplete (Srivastava, 2013). This theory is linked to H<sub>3</sub>: Cost of green procurement affect implementation of green procurement.

### **The Resource-Based View Theory**

The resource-based view of the firm emphasizes that valuable, rare, imperfectly imitable, and non-substitutable firm's resources result in competitive advantage (Miles & Covin, 2010). These resources can consist of assets, capabilities, organizational processes, information, etc. and are classified into tangible and intangible resources (Dickinson *et al.*, 2010). The theoretical mainstays are that resources that are entirely controlled or owned by the focal organization should be cultivated in order to enhance their contribution to the organization's competitive advantage in its industrial context (Hoffman & Sandelands, 2005).

The NRBV extends the resource-based view by highlighting that the environment might be a constraining factor impacting sustainable competitive advantage and accordingly suggest that firms, which manage the environmental link better than others, might generate more sustainable competitive advantage (Li & Geiser, 2009). This theory links the H<sub>4</sub>: Firm resources capacity affect implementation of green procurement

## Empirical Review

Stephen and Helen, (2011) study proposed a conceptual framework that explains the implementation (or lack thereof) of green procurement. The propositions steamed from, firstly, a differentiated materialist viewpoint on organizational culture to understand the level of desire exhibited by the organization and by the procurement department (Theyel, 2010). Secondly, the study drew upon the resource-based view of the firm to explain how the procurement manager's capability to respond to a given level of desire moderates the degree to which that desire is realized in the organization's procurement activity (Stafford *et al.*, 2010).

The framework drew upon the political theory of the firm as defined by Miles and Covin, (2010) to explain a lack of or illegitimate engagement in GP activities and that effort to remedy any misalignment between organizational subcultures and/or the procurement manager's inability to respond due to a lack of resources is a potential solution (Barney, 2001; Lucas, 2007). The principal contribution to extant literature lies in exploring the workings inside the organization, how the effects of organizational culture influence implementation of GP (Polonsky, 2009).

Scholars have contributed to understanding of SERP from a variety of perspectives (Dickinson *et al.*, 2010). However, these contributions remain haphazard with a weak theoretical base (Seuring & Muller, 2008). Furthermore, scholars have examined the implementation of SERP as a problem that exists between the buyer and supplier (Preuss, 2009). However, studies at this level of analysis assume, if only implicitly, that organizations, regardless of size and multiple locations, act as coherent entities. Therefore, they overlook the friction and disunity at lower levels of analysis that may influence the problem of SERP implementation before it emerges in the buyer-supplier relationship at the organizational level of analysis (Emilsson & Hjelm, 2013). In comparison with the disjointed literature on organizational culture, the RBV is coherent despite minor levels of conflict (Rimington *et al.*, 2010). Mainstream definitions, however, have not strayed significantly from Bolton, (2010) original assertion that resources are "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness". This definition is adopted in the current study (Min & Galle, 2011). Corporate support plays a pivotal role in the institutionalization of responsible behaviour (Maignan *et al.*, 2012). Maignan and McAlister, (2012) reported how senior management made conspicuous efforts to the implementation of green procurement in the organization.

Faith-Ell *et al.*, (2010) conducted a study on Green Purchasing Strategies: Trends and Implications. The findings of the study were; the biggest challenge to the effective implementation of green purchasing is the cost and income, and the environment friendly packaging is the key to the success of the project. Zhu *et al.*, (2009) also noted the importance of dedicating (physical) resources successful implementation of green procurement. An organization's top leadership sets the ethical tone." Indeed, the issue which lies at the core is in, namely, senior management's function as a repository of institutionalized authority affording the manager the ability (dutiful, discretionary and perhaps even involuntary) to mould an organization's culture (Polonsky, 2009).

## Research Methodology

### Data Collection Methods

A descriptive research design was used in this study. Hoffman & Sandelands, (2005) define descriptive design as a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. The choice of this design was appropriate for this study since it utilized a questionnaire as a tool of data collection and helped to analyze challenges facing implementation of green procurement in manufacturing sector in Kenya. Again it is restricted to fact finding and may result in the formulation of important principles of knowledge and solutions to significant problems (Kothari, 2008). The study collected quantitative data using a self-administered questionnaire. Nevertheless, where it proved difficult for the respondents to complete filling the questionnaires immediately, the questionnaires were left with the respondents and picked later. A cover letter from JKUAT NCBD was taken along to enable the administering of the questionnaire. The respondents were assured of confidentiality of their responses and that the responses were not handled by any other person but rather were being used purely for academic purposes. Each questionnaire was coded and only the researcher knew which person responded. The coding technique was only used for the purpose of matching returned, completed questionnaires with those delivered to the respondents.

According to Kothari (2004) a representative sample is one which is at least 10% of the population thus the choice of 56 respondents which was considered as representative which was selected by use of Slovin's formula:  $n = \frac{N}{1 + Ne^2}$  as follows:

Where;  $n$  = sample size

$N$  = total population i.e. 126 employees

$e$  = Error tolerance. The study confidence level was 90% which will give a margin error of 0.1

Therefore;  $n = \frac{126}{1 + 126 \cdot 0.1^2}$

$n = \frac{126}{2.26}$

$n = 55.75$

$n = 56$

The sample size was 56 employees.

To determine the sample size of each category of employees in Unga Limited, proportionate stratified sampling will be used.

For Lower Management (LM)

$$LM = \frac{71 \times 56}{126} = 31 \text{ employees}$$

For Middle management (MM)

$$\text{MM} = \frac{42 \times 56}{126} = 19 \text{ employees}$$

For Top management (TM)

$$\text{MM} = \frac{13 \times 56}{126} = 6 \text{ employees}$$

The respondent from every subgroup was then selected for inclusion in the sample size using simple random sampling. This was to ensure that the sampling units had equal chance in the study.

**Table 13: 1 Sample size**

Strata	Population (Frequency)	Sample frame
Lower Management	71	6
Middle Management	42	19
Top Management	13	31
<b>Total</b>	<b>126</b>	<b>56</b>

Salant and Dillman, (1994) noted, however, that the sample size must be increased when using stratified samples to maintain necessary precision. Therefore, the study administered more than 56 questionnaires in the field to cater for discrepancies such as uncollected or incomplete questionnaire.

## Discussion

The study established that cost of green procurement had a significant negative effect on implementation of green procurement in manufacturing sector. The results suggest that the cost of green procurement affect implementation of green procurement. The fundamental issue is that all markets are set up to focus on purchase price of green products but unpacking all the ancillary costs in relation to running/replacing/maintaining a product is difficult for buyers. The finding of this study suggested that Organizational structure had a positive effect on implementation of green procurement. This poses a challenge in implementation of green procurement in manufacturing sector. To overcome this challenge there is need for reconfiguring the structure of the organization and its services to enable different kinds of skill sharing and professional relationships to emerge, engaging staff in new ways. Reviewing the organization's procurement structure and identifying a programme of structural and organizational change will ensure normal working practices are aligned with your sustainable procurement policy

The research found out that Legal and regulatory framework has a positive effect on implementation of green procurement. This indicated that there is a notable absence of regulation

to mandate government and business green purchasing activities. A supportive legal & regulatory framework on environment management enhances effective implementation of green procurement.

The research findings showed a strong combined correlation  $r$ - value of 0.794,  $R^2$  value of 0.631 which means that 63.1% of the corresponding variation in implementation of green procurement can be explained or predicted by (organizational structure, legal and regulatory framework, Cost of green procurement and Firm resource capacity). Test of overall significance of the four variables jointly organizational structure, legal and regulatory framework, Cost of green procurement and Firm resource capacity using ANOVA, at 0.05 significance found the model to be significant.

### Conclusions

Based on the research findings it is logical to conclude that effective implementation of green procurement in manufacturing sector can be enhanced. Given the backdrop that the implementation of green procurement in manufacturing sector is poor, the findings indicated that currently there is lack of Structural and organizational change to support implementation of green procurement, poor legal and regulatory framework, cost of green procurement is relatively high and the resources required to implement green procurement are limited in manufacturing sector. It is logical to articulate that the current phenomenon of poor implementation of green procurement in manufacturing sector can be reversed if the government and other stakeholders ensure that there is Structural and organizational change to support implementation of green procurement, improvement of legal and regulatory framework on environment, reduction of cost associated with green procurement and allocation of resources necessary for effective implementation of green procurement.

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