

Effect of Knowledge of Green Procurement on Implementation of Green Public Procurement in Secondary Schools in Trans-Nzoia County, Kenya

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Abstract: Procurement of vast amounts of goods and services by public secondary schools in Kenya is increasingly raising concern over the products' impact on the environment. The schools control huge budgets approximated at Kenya shillings 120 billion annually. Thus their impact on the environment cannot be underrated. However, it remains a matter of serious concern that green public procurement has not been embraced by the public secondary schools. It is in this regard that it became imperative to undertake a research to investigate effects of knowledge of green procurement on implementation of green public procurement in public secondary schools in Trans-Nzoia County, Kenya. The study adopted descriptive research design. The target population was 1032 public secondary schools procurement personnel in various procurement committees. Purposive and simple random sampling techniques were used to obtain a sample size of 278 respondents. A closed ended questionnaire was used for data collection. The study attained a response rate of 65%. Using the mean, the variables of interest, that is, knowledge of green procurement and implementation of green procurement was scored below average by the respondents. The study found a significant positive correlation between knowledge of green procurement and implementation of green public procurement ($r = .723, p < .05$) at 95% confidence level. In conclusion, the study endorsed the validity of using knowledge of green procurement, as interventions in the implementation of green public procurement. Further study was recommended on the factors affecting implementation of green public procurement using more rigorous inferential statistics.

Keywords: Knowledge of Green Procurement, Green Procurement, implementation of public green procurement.

1. INTRODUCTION

Green public procurement is becoming the cornerstone of environmental policies worldwide (Tucker, 2008). Since the International Conference on Environment and Development at Rio de Janeiro in 1992, awareness of the role of green public procurement in supporting sustainable consumption and production patterns has strongly increased and is today spreading through the public authorities both as a policy instrument and as a technical tool. Green public procurement (GPP) plays a crucial role in reduction of waste management challenges, spreading of infectious and respiratory diseases, climate change and global warming, loss of biodiversity, exhaustion of resources, and mitigation of land, water and air pollution.

According to Carter (1998), green procurement can be defined as purchasing involvement in the supply chain in order to facilitate recycling and waste reduction. It is the purchasing of products which are environmental friendly, that is, those products which are non-toxic, recyclable, use less energy and have a long lifespan. The main purpose of green procurement is to provide environmental conscious products, construct a resource recycling society, reduce costs associated with production, improve the public image of an organization, improve health of employees, save energy and

to reduce pollution and waste. Green procurement in the public sector is referred to as Green public Procurement. The public and private sectors are active participants in procurement, but the public sector constitutes a large proportion of expenditure compared with the Gross Domestic Product of country. The average percentage of procurement expenditure in developed countries is 16% while the percentage for developing countries is about 20% of Gross Domestic Product (The international Institute for Sustainable Technologies, 2013).

Limited Green Public Procurement in the developing world, specifically in public secondary schools in Kenya, is seen to adversely affect people's health and pollute the environment. Exhaustion of resources and supply difficulties are a common experience in Kenya. Forests and other forms of wildlife are threatened with extinction as human activities take place. Waste management challenges, global warming and climate change are being experienced in most parts of Kenya. According to the Daily Nation newspaper in Kenya (2014), use of firewood for cooking in poorly ventilated homes was behind high chest infections in Laikipia, Samburu, Isiolo and Meru counties hence issue of green public procurement have not been adequately addressed in Kenya and specifically in Trans-Nzoia County.

Statement of the Problem:

Adoption of green public procurement of goods and services plays a vital role in environmental sustainability. According to the European Commission (2004) unavailability of green products hinders procurers from integrating environmental consideration in their procurement practices. Previous studies that have assessed the status of green public procurement even in the greenest countries such as Norway, Denmark, Sweden and Finland reveal that despite efforts to promote environmental consideration in procurement, there is a long way to go before GPP is fully implemented. The findings indicate that 60% of tender documents in the countries contained environmental criteria, but only half of the documents had accurate environmental specifications to result in greener purchases (GPPEU, 2005).

The green schools programme initiated by the Ministry of Environment and Natural Resources in Kenya has not been embraced by the public secondary schools. Production, distribution, storage and use of items are increasingly raising concern over their impact on the environment. The schools are thus grappling with challenges of waste management difficulties, spreading of infectious and respiratory diseases, pollution, loss of biodiversity, exhaustion and supply difficulties of resources. Waste management challenges in public secondary schools in Trans-Nzoia County are observable. Public secondary schools in the County neither have green procurement policies nor do they have procurement personnel with sufficient knowledge of green procurement. Hence the need to fill the research gap by undertaking a study on effects of knowledge of green procurement on implementation of green procurement in public secondary schools in Trans-Nzoia County.

2. LITERATURE REVIEW

Knowledge of procurement process is vital in consideration of the environment when making procurement decisions. Wickenberg (2004) wondered loudly if procurement organizations gave priority to training of their procurement personnel for greener public procurement. According to Testa (2011), organizations need to emphasize on training the key personnel on how to set up a tendering procedure, define requirements, qualify the suppliers, identify the best offer for sustainable value for money. Nissinen (2009) observes that training of the key personnel and creation of awareness in procurement are difficult to design, plan and implement because they are inter-disciplinary. In order to develop an effective "green tender" a public procurement administrator needs to be trained on technical aspects (environmental criteria for product category and their application), legal aspects (how to define the contents and express them in call for tender) and economic aspects (how to evaluate the "environment value" of the offer) and integrate it in monetization of the price.

Faith-Ell (2005) shows that green procurement is affected by inadequate transfer of information on environmental requirement between key actors and lack of a mechanism for the systematic follow up of requirements. Many organizations are unfamiliar with the concept of green procurement or with the options that are available (European Commission, 2004). Wickenberg (2004) wonders if environmental awareness is given priority by procuring entities. Campaigns, sensitization on green public procurement opportunities and training courses for purchasers are actually increasing public bodies to adopt and effectively "use" environmental criteria in their purchasing strategies and decisions (Iraldo, 2007). According to Testa (2011), organizations need to emphasize and implement an effective awareness-raising action on its human resources, both by means of spreading information on green public procurement. Nissinen (2009)

reports that creation of awareness among the key-personnel is difficult to design plan and implement because of its interdisciplinary nature with training of the personnel.

The studies show that lack of knowledge and awareness on the concept of green procurement can be a big hindrance to implementation of Green Public Procurement. While lack of knowledge and awareness can simply be corrected by training the key personnel, organizations have not prioritized the same. Reasons for reluctance by organizations to empower procurement personnel with knowledge of green procurement have not received much attention by researchers. The study on knowledge of green procurement, as a factor affecting green procurement, unveiled reasons why GPP was not embraced in public secondary schools in the county.

Successful implementation of green public procurement can be evidenced by a reduction in costs of waste management, reduced global warming, reduced health costs, reduction in destruction of biodiversity and reduction in utility bills, among others. Specific indicators include support for reuse, recyclability and reduction of waste, improved water and energy efficiency, reduced green house gas emissions, reduced ozone layer depletion substances, a healthier working environment for employees and citizens, good urban sewerage system, existence of sewerage treatment plants, introduction of new technology in sewage treatment, government partnership with the private sector to reduce expenditure and strengthen green markets and industries, evidence of environmental management equipment, tools and studies, and use of specially designed trucks to transport waste.

Strategies developed to achieve green public procurement include research, formulation and domestication of green procurement policy by organizations, government co-ordination and support for green procurement, integration of environmental considerations in tender documents, creation of environmental awareness, and establishment of environmental departments and agencies such as the NEMA (National Environmental Management Authority) in Kenya. Carrying out a self-evaluation is also necessary to identify challenges which require mitigation (European Commission, 2004).

The main stakeholders in implementation of GPP are clients (public secondary schools) and contractors or suppliers. Other stakeholders include designers, procurement administrators, oversight bodies and the general public. Partnering of the public sector with other stakeholders such as suppliers, customers and other same minded organizations to improve green public procurement is critical.

Implementation of green public procurement in both developed and developing countries has not been very successful because of lack of green procurement policies, knowledge of procurement, sufficient procurement professionals, environmental awareness, strong legal structures in procurement, performance measures and rewards, lack of alternative technology. The perception that green products are expensive and that public procurement is an area of waste and corruption has hindered implementation of green public procurement. Some organizations have developed purchasing habits that are insensitive to environmental sustainability. Work pressure is too much for public procurement professionals since they are few. Procurement personnel value economic benefits more that environmental benefits when making procurement decision.

3. METHODOLOGY

This study adopted descriptive research design. The target population in this study was all the procurement personnel in public secondary schools in Trans-Nzoia County who are involved in procurement of goods or services for their schools. With a total of 172 public secondary schools in the county, and taking 6 chairmen of procurement committees per school, a target population of 1032 was arrived at. The sample size of this study was based on (Krejcie,1998), statistical table for determining sample size from a population. A sample size of 278 was obtained using the table. Simple random sampling enabled the researcher give each public secondary school an equal and independent chance of being selected. The questionnaire was used to collect primary data.

In order to ensure content validity, the preliminary questionnaire was pre-tested on a pilot set of respondents for comprehension, logic and relevance. The reliability of the study measures was assessed by Cronbach's alpha coefficients (Sekeran, 2000). Cronbach's alpha coefficients exceeding the 0.7 lower level is acceptable in social research. For this research the reliability coefficients met the criteria since all reliability coefficients of the study variables were above 0.7.

4. RESULTS

The gender distribution of the survey respondents was 46.7% female and 53.3% male. Thus there is gender almost parity in the institutions. For age, 7.5% were in the age bracket 20-30 years, 13.2% in 31-40 years, 36.8% in the bracket 41-50 years and 42.5% were above 50 years. Thus the highest percentage was in the age bracket 41-50 years. The educational level of the respondents indicated that 13.3% had postgraduate qualifications, 73.6% had undergraduate level, and 13.3% had diplomas. It indicates that majority of the respondents had undergraduate degrees. They therefore had no problem in answering the questionnaires. Their responses can thus be relied upon.

The respondents were asked to indicate the length of time they had been involved in procurement of goods or services for the schools. The results showed that 20.9% had below 3 years experience, 33.0% had 4-6 years, 33.0% had 7-9 years, and 13.1% had over 10 years experience. Experience in Procurement On the aspect of what type of procurement committee they are in, 13.2% were in tender preparation, 33.0% in tender evaluation, 20.3% in tender procurement, 20.3% tender inspection and acceptance, and 13.2% in disposal.

Descriptive statistics of mean, standard error, and standard deviation were obtained for the variables implementation of green procurement and knowledge of green procurement. The mean was 1.5281 with SD=.45834 and 1.4599 with SD=.45818 for knowledge of green procurement and implementation of green procurement respectively.

The tool used to collect data on the aforementioned variables was on a 5-point likert scale. Thus the mean values as were all below average. This meant that the respondents indicated that the factor that affected implementation of green procurement (knowledge of green procurement was not prevalent in their schools.

Correlation analysis was done to determine relationships between the study variables. Pearson product moment correlation coefficient was used. The results of the correlation analysis indicated strong significant correlation between implementation of green procurement and knowledge of green procurement ($r=.723$, $p=0.000$).

5. DISCUSSION

The correlation results indicated that the variables knowledge of green procurement was strongly correlating with implementation of green public procurement. There was a positive correlation between the independent variables of knowledge of green procurement and the dependent variable implementation of green public procurement. It can thus be concluded that knowledge of green procurement is a factor that determine implementation of green public procurement. Thus for implementation of green public procurement to be a success, knowledge of green procurement is of the essence. The studies show that lack of knowledge and awareness on the concept of green procurement can be a hindrance to implementation of green public procurement.

This results support findings by Testa (2011) who found that organizations need to emphasize and implement an effective awareness-raising action on its human resources, both by means of spreading information on green public procurement. According to European Commission (2014) strategies developed to achieve desired implementation green public procurement include creation of environmental awareness through dissemination of knowledge on green public procurement.

6. THEORETICAL IMPLICATIONS

This study provides practical implications for scholars. The study successfully extends n knowledge on factors affecting implementation of green public procurement. The findings of the present study established that knowledge of green procurement is the antecedent condition for implementation of green public procurement.

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