

**INFLUENCE OF GREEN PROCUREMENT PRACTICES ON QUALITY SERVICE  
DELIVERY IN NYAMIRA COUNTY GOVERNMENT, KENYA**

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*Abstract*

*The purpose of this study was to investigate the influence of green procurement on quality service delivery in Nyamira County. This was necessitated by lack of proper legislation in the procurement Act as to issues of green procurement. The study therefore aimed to determine the influence of environment-based design specifications on quality service delivery; establish the influence of environmental audit on quality service delivery; and assess the influence of availability of environmental management system on quality service delivery in Nyamira County. The study employed a case study research design and targeted procurement officers at the County offices in Nyamira and selected staff of firms supplying goods and services to the county. It also targeted the Chief procurement officer at the County. Simple random sampling was used to select employees of the county and contractor firms while purposive sampling was used on chief procurement officer. Questionnaires was administered on both employees; interview schedule was given to chief procurement officer and document checklist was also part of the data collection instruments. Data was analyzed using descriptive analysis; Pearson's correlations and regression analysis to test hypotheses was also used. The data was then presented in tables with the aid of SPSS. The results show that design specification ( $\beta=.173$ ,  $t=2.661$ ,  $p<0.004$ ); environmental audit ( $\beta=.324$ ,  $t=4.473$ ,  $p<0.001$ ); and environmental management systems ( $\beta=.352$ ,  $t=5.209$ ,  $p<0.001$ ); all had significant influence on quality service delivery at Nyamira County. The study therefore recommends that: Nyamira County management should provide specific and workable design specification to suppliers that include environmental requirements for purchased items. This will help in building the tenets and practice of green procurement for better service quality in the County. Nyamira County management should create mechanisms for a clear environmental audit for suppliers' internal and external management. It should also invest in environmental management systems to help to improve the practice of green procurement for better service quality in the County. Finally, the national government should proactively encourage the use of green procurement and in that regard should sponsor a bill that makes it mandatory to employ the use of green procurement in all county and national offices.*

*Keywords: Green procurement, environmental management system, environmental audit, design*

## **I. INTRODUCTION**

### **1.1 Background of the Study**

Oboth (2001) argued that all statutes and laws have not been able to keenly define service delivery but noted that service is a means via which supplies are rendered to the public. Hemsing (1995) described service delivery as a decision made deliberately to offer goods and services to people who require and need it.

Globally, governments are confronted with increasing demands from their users brought about by changes such as devolution, technological change, public-private partnerships and globalization. Consequently, public sector agencies and authorities are required to respond and adapt in a manner that meets these challenges. such transformations are often associated with building capacity and proper implementation of programmes, which has become a central theme for public policy (Hall, 2013), embracing a wide range of areas such as environmental concerns, healthcare and increasingly, public procurement and particularly the proper implementation of existing public procurement policy and regulations. According to United Nations Development Program (UNDP) report (2014), public procurement of goods, services and works represent a considerable proportion of a nation's expenditure, accounting for around 15% of the world's GDP and in some developing countries, may be as much as 70%. In recent years, attention has been paid towards the importance of public procurement in stimulating national, regional and local development. A consequence of this interest has been a realization that if public procurement is to fulfill its potential as a driver of social and economic improvements, there is need to focus on effective and proper implementation of Public procurement policy and regulation (OECD, 2009). With time procurement has evolved to include new aspects like strategic sourcing, e-procurement and 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 organizations across the world (Salam, 2008). This pressure has prompted organizations to improve their environmental performance (Zhu and Sarkis, 2006). Consequently, organizations have shown growing concern for the environment (Salam, 2008).

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) noted that green procurement is the acquisition of environmentally friendly products and services within the context of the tenets of green procurement programs. It is the purchasing of products or services with lower effect on the environment over their whole life cycle than the standard equivalent. However, little is known about green procurement as employed by public entities like counties and how the procurement affects service delivery of these counties; hence the need for the present study.

Further, the Public Procurement Disposal Act (PPDA) of 2012 is 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 organizations which the government is a majority shareholder. there is thus a need to look at the influence of green procurement on service delivery in Nyamira County.

### **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 2008 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) are between 12% and 20% of a country's GDP. This explains the magnitude and importance of public procurement.

Walker and Brammer (2009) noted that little research had investigated the influence of sustainable procurement practices on procurement performance, 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 Counties hence the deviation from the present study. The study also noted that the

practice was very low hence the need to establish whether counties 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.

### **1.3 Research Objectives**

#### **1.3.1 General Objective**

To establish the influence of green procurement on quality service delivery in Nyamira County

#### **1.3.2 Specific Objectives**

- i. To determine the influence of environment-based design specifications on quality service delivery in Nyamira County
- ii. To determine the influence of environmental audit on quality service delivery in Nyamira County
- iii. To establish the influence of availability of environmental management system on quality service delivery in Nyamira County

### **1.4 Hypotheses**

H<sub>01</sub>: Environment-based design specifications do not have a significant influence on quality service delivery in Nyamira County

H<sub>02</sub>: Environmental audit does not have a significant influence on quality service delivery in Nyamira County

H<sub>03</sub>: Availability of environmental management system does not have a significant influence on quality service delivery in Nyamira County

## **II. LITERATURE REVIEW**

### **2.1 Theoretical Review**

#### **2.1.1 Theory of Planned Behaviour**

This study was based on the theory of planned behavior as propagated by Ajzen (1991). Ajzen (1991) defined the Theory of Planned Behavior (TPB), as that attitude on the way to creating a behavior, and subjective norms, coupled with perceived control, that taken together profile an individual's behavioral intents and behaviors. TPB is basically an extension of the theory of reasoned action (TRA) that considered a person or group of persons and what reasons they made to accrue in a bid to finally make a decision that then shaped a behavior or action. The TPB extension is characterized by accumulation of perceived behavioral controls to the model, that comprise of attitude, subjective norms, behavioral intention, together with actual behavior (Madden, Ellen, & Ajzen, 1992; Yi et al., 2015). TRA is thus a model for the forecast of behavioral intention, straddling predictions of attitude and forecasts of behavior. If the counties in Kenya

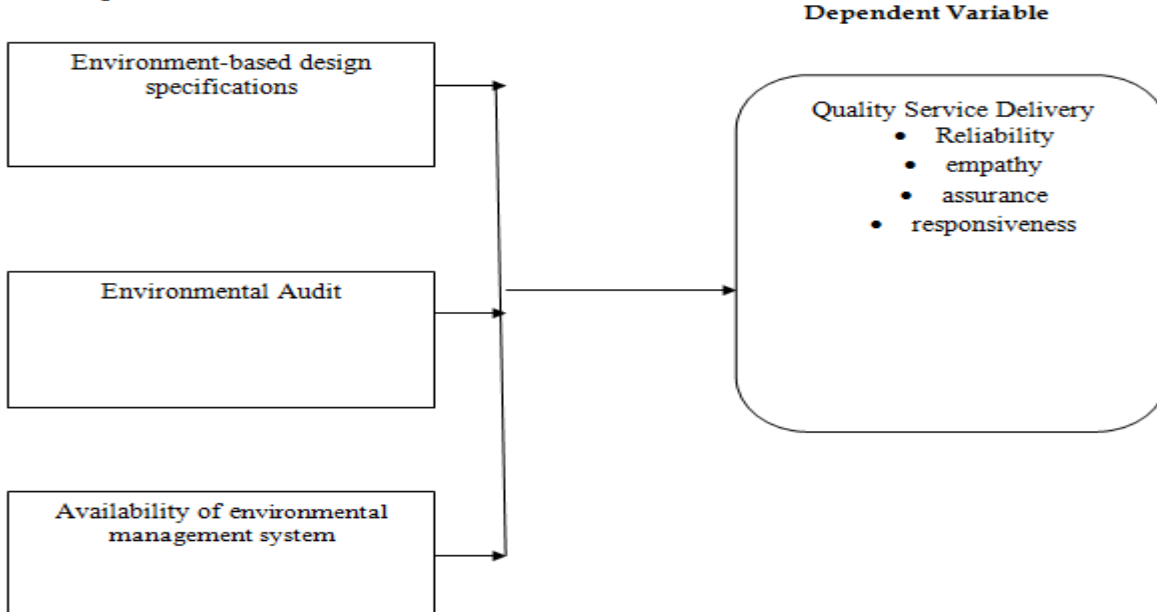
are assumed to be individuals buying products in the market, then the TPB can accurately show why they choose to practice green procurement instead of the traditional procurement practices. This theory is therefore applied here to explain the conscious decisions to procure green products and to engage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

### **2.1.2 Gap Model**

Parasuraman et al, (1985) proposed that service quality is a function of the differences between expectation and performance along the quality dimensions. They developed a service quality model based on gap analysis. The various gaps visualized in the model are:

Gap1: Difference between consumers' expectation and management's perceptions of those expectations that does, not know what consumers expect. Gap2: Difference between managements' perceptions of consumer's expectations and service quality specifications, that is, improper service-quality standards. Gap3: Difference between service quality specifications and service actually delivered, that is, the service performance gap. Gap4: Difference between service delivery and the communications to consumers about service delivery, that is, whether promises match delivery? Gap5: Difference between consumer expectations and perceived service. This gap depends on size and direction of the four gaps associated with the delivery of service quality on the marketer's side. This exploratory research was refined with the subsequent scale named SERVQUAL for measuring customers' perceptions of service quality (Parasuraman et al, 1988). At this point, the original ten dimensions of service quality collapsed into five dimensions: reliability, responsiveness, tangibles, assurance (communication, competence, credibility, courtesy, and security) and empathy which capture access and understanding or knowing the customers.

**2.2 Conceptual Framework**  
**Independent Variables- Green Procurement**



**2.3 Empirical Review**

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.

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. 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 county governments 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 was 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.

### **III. RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The study applied a case study research design; as such it was an intensive descriptive and holistic analysis of Nyamira County. It was an investigation of single entity in order to gain insight into the larger cases. According to Oso (2005) in a case where the number of organizations that can be investigated are few, a small sample is available and an in-depth analysis is necessary, a case study is the most appropriate. The study aimed to investigate the influence of green procurement on quality service delivery in Nyamira County

#### **3.2 Target Population**

The population of the study consisted of the 20 employees in the procurement office at the Nyamira County office. It targeted the 322 firms that supply their services to the County and the senior procurement officer (1) of the county bringing the total number of targeted population to 361.

#### **3.3 Sampling Procedure and Sample Size**

The researcher drew the sample by simple random sampling in selecting 11 procurement employees of Nyamira County and 96 suppliers of goods and services to the county bringing the total to 108 respondents. The sample frame constituted 30% of target population; a



percentage that Kothari (2014) says is acceptable. Purposive sampling was used to select the County chief Procurement officer as he/she had judgemental information based on his status and expertise in procurement matters at the county.

### **3.4 Data Collection Instruments**

Data was collected using questionnaires, document checklist and interview schedule. A structured Likert scale type questionnaire was used. According to Kothari (2014) likert scale questionnaire is best for measuring attitudes. A structured questionnaire is preferred for collecting data. To measure quality service delivery, the SERVEQUAL model by Parashuma (1998) was also used. The questionnaire was administered to Nyamira County procurement officers and supplying employees. An interview schedule to elicit in depth responses that was relevant for the study was employed. The interview schedule also works best for few respondents, even one. The interview schedule was administered on the chief procurement officer, Nyamira County. The researcher used document checklist to carry out a critical analysis of recorded information relating to public procurement and Disposal Act and green procurement.

### **3.5 Data Analysis**

The researcher analysed data using descriptive analysis. Data from the interview schedule was analysed using narrative analysis with people's quoted words rendered verbatim based on the variables of the study. Data was then described quantitatively using descriptive statistics which include frequencies, and percentages through tables. This was done with the aid of a computer programme-Statistical Package for Social Sciences (SPSS) version 22 for windows. Pearson's correlation analysis and regression analysis was used to test the hypotheses.

Regression Model

$$Y_0 = \beta_0 + \beta_1 (X_1) + \beta_2 (X_2) + \beta_3 (X_3) + e$$

Where the variables are defined as:

$Y_0$ - QSD

$X_1$ - design

$X_2$ - environmental audit

$X_3$ - environmental system

e- Error term

## **IV. RESULTS AND DISCUSSION**

### **4.1 Dimensions of Quality Service Delivery**

This part utilized the renowned SERVQUAL model to test the scores of expectations and perceptions of Nyamira County. See Tables 1 for the results

**Table 1 SERVQUAL Scores of Quality Dimensions**

Dimensions	N	SERVQUAL Scores (Average)	Sig. (p)	Relative Importance (Weights) of Quality Dimensions stated by Staff (%)	Weighted SERVQUAL Score
Tangibles	106	-.63000	.006	15.77290	-0.12334
Reliability	106	-.61020	.000	26.62948	-0.16035
Responsiveness	106	-.53050	.000	19.18326	-0.11809
Assurance	106	-.61850	.004	19.27490	-0.13642
Empathy	106	-.82720	.002	14.13944	-0.13774
Total un-weighted SERVQUAL score		-.64328			
Total weighted SERVQUAL score					-0.65097

Table 1 highlights the total SERVQUAL scores offered in line with the five dimensions of tangibility, reliability, responsiveness, assurance and empathy. Based on the measured quality variables, empathy posts the highest negative SERVQUAL scores at -.82720. Applicably, in comparison with other dimensions, acceptable level of empathic situation is lower. Further, based on the Nyamira County staff rating of the service quality dimensions and specifically about the quality improvement, the most improved and significant dimension to which highest rating 26.62948 (26.63 percent) is allocated is the reliability factor. Then assurance and responsiveness follow each other with empathy being the least important dimension as expected. Also, this is agreed to in literature (Appelbaum et al, 2008; Bennebroek-Gravenhorst et al, 2006) who in their studies observed that empathy posted the lowest negative rating in companies because they argued, empathy was categorized more by emotional and demonstrative needs to which the staffers were reluctant to engross themselves in when it came to customer interaction.

#### 4.2 Correlation Analysis

Pearson's Correlation Analysis was conducted to check for the relationship between the variables. See Table 2 for the results

**Table 2 Pearson correlation Results**

		Quality Service Delivery	Environmental Audit	Environmental management systems	Design Specification
Quality Service delivery	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	106			
Environmental Audit	Pearson Correlation	.625**	1		
	Sig. (2-tailed)	.000			
	N	106	106		
Environmental management systems	Pearson Correlation	.548**	.400**	1	
	Sig. (2-tailed)	.000	.000		
	N	106	106	106	
Design Specification	Pearson Correlation	.721**	.358**	.501**	1
	Sig. (2-tailed)	.000	.005	.000	
	N	106	106	106	106

Pearson correlation analysis was done to inspect the relationship between the two notable variables in the study. The constructs were measured via summated scales from both the strategic green procurement constructs and the quality service delivery constructs. In explaining the r-values, Wong and Hiew (2005), had observed that the correlation coefficient value ( $r$ ) that is scored from 0.10 to 0.29 is taken as weak, then from 0.30 to 0.49 is taken as a medium score whereas that from 0.50 to 1.0 is taken as strong an acceptable. Nevertheless, based on the study by Field (2005), correlation coefficient must not surpass 0.8, to keep away multicollinearity problems. Subsequently, the highest correlation coefficient for the present study is 0.721 which does not surpass 0.8, and hence there exist no multicollinearity problem in this research (Table 2).

All the independent variables had a positive correlation with the dependent variable with Design Specification of green procurement process having the highest correlation of ( $r=0.721$ ,  $p < 0.01$ ) followed by Environmental Audit in green procurement process with a correlation of ( $r=0.625$   $p < 0.01$ ) while Environmental management systems had the least correlation of ( $r=0.548$   $p < 0.01$ ). This shows that all the variables (Design Specification, Environmental Audit and management) are statistically significant at the 99% confidence interval level 2-tailed and applicably have a positive relationship with the dependent variable (Quality service delivery).

### 4.3 Regression Analysis Results

As a portion of the results analysis, Regression Analysis was done to test the hypotheses. The results is as seen on Tables 3 and 4

**Table 3 Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Sts. Error of the Estimate
1	.852 <sup>a</sup>	.768	.743	.176

a. Predictors: (Constant), Environmental management systems, Design Specification, Environmental Audit

b. Dependent Variable: Quality Service Delivery

From Table 3 it can be observed that the R value was .852 exhibiting a positive direction of the results. Hence, the R value at .852 shows a stronger relationship amid observed and predicted values in a positive direction. The coefficient of determination R<sup>2</sup> value was 0.743. This shows that 74.3 per cent of the alteration in dependent variable (Quality Service Delivery) was explained and predicted by independent variables (Environmental management systems, Design Specification, Environmental Audit)

**Table 4 Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.727	.351	.287	7.108	.000
Design Specification	.278	.074	.173	2.661	.004
Environmental Audit	.284	.085	.324	4.473	.000
Systems	.329	.069	.352	5.209	.000

a. Dependent Variable: Quality Service Delivery

From table 4, the t-value of constant produced (t = 7.108) was significant at .000 per cent level (Sig. F < 0.05), thus confirming the fitness of the model. Therefore, there is statistically significant relationship between Environmental management systems, Design Specification, Environmental Audit, and Quality Service Delivery.

### 4.9 Summary of Hypotheses Testing Results

From: Regression Model

$$QSD = \beta_0 + \beta_1 (X_1) + \beta_2 (X_2) + \beta_3 (X_3) + e$$

Thus,

$$QSD = 2.717 + .163 (X_1) + .314 (X_2) + .342 (X_3)$$

Thus,

**Table 5 Summary of Hypotheses Testing Results**

Hypotheses	Coefficient Values	Conclusion
H <sub>01</sub> : Design Specification has no statistically significant effect on quality service delivery at Nyamira County;	$\beta_1 = .173$ P=0.004	Rejected
H <sub>02</sub> : Environmental Audit has no statistically significant effect on quality service delivery at Nyamira County	$B_2 = .324$ P=0.000	Rejected
H <sub>03</sub> : Environmental management systems have no statistically significant effect on quality service delivery at Nyamira County	$B_2 = .352$ P=0.000	Rejected

## V. CONCLUSSIONS AND RECOMMENDATIONS

Based on the objectives and findings of the study, the following are the conclusions; Based on the first objective, It can therefore be concluded that Design Specification was a significant influence on quality service delivery at Nyamira County. Based on the second objective, it can therefore be concluded that Environmental Audit of procurement process was a significant influence on quality service delivery at Nyamira County. Based on the third objective, it can therefore be concluded that environmental management systems in the green procurement process was a significant influence on quality service delivery at Nyamira County. Thus, based on the objectives and conclusions, this study recommends; Nyamira County management should provide specific and workable design specification to suppliers that include environmental requirements for purchased items. This will help in building the tenets and practice of green procurement for better service quality in the County. Also, the County management should offer cooperation with suppliers for environmental objectives. Nyamira County management should create mechanisms for a clear environmental audit for suppliers' internal and external management. The audit will help to spur growth in the practice of green procurement for better service quality in the County.

Nyamira County management should invest in environmental management systems to help to improve the practice of green procurement for better service quality in the County. The national government should proactively encourage the use of green procurement and in that regard should sponsor a bill that makes it mandatory to employ the use of green procurement in all county and national offices.

## REFERENCES

- [1] Afonso, A., Schuknecht, L., and Tanzi, V. (2005). Public sector efficiency: an international comparison. *Public Choice*, 123(3/4), 321-47.
- [2] Aho, E., Cornu, J., Georghiu, L., and Subira, A. (2006). Creating an innovative Europe. Aho Group Report, European Communities, Belgium.
- [3] Ajzen, I. (2005). *Attitudes, personality and behaviour*. McGraw-Hill Education.
- [4] Ajzen, I., and Fishbein, M. (2002). *Understanding attitudes and predicting social behaviour*. New Jersey: Prentice Hall.
- [5] Aketch, J.M.M. (2005). Development partners and governance of public procurement in Kenya: enhancing democracy in the administration of aid. *Global Administrative Law: National and International Accountability Mechanisms for Global Regulatory Governance Conference*, NYU School of Law, Institute for International Law and Justice, April 22-23. Retrieved on 31/05/2011 from <http://www.iili.org/gal/documents/AkechPaper000.pdf>
- [6] Altman, M. (2010). Promoting economic development & capacity through procurement. Presentation to the 3rd Annual Tshwane International Trade and Infrastructure Investment Conference CSIR ICC 24 May.
- [7] Arrowsmith, S., Linarelli, J., and Wallace, D. Jr. (2000). *Regulating public procurement: national and international perspectives*. Kluwer Law International: The Hague.
- [8] Aschhoff, B., Sofka, W. (2008). Innovation on demand - can public procurement drive market success of innovations? *Research Policy*, 38(3), 1235-47.
- [9] Basheka, B.C. (2009). Procurement planning and local governance in Uganda: a factor analysis approach. *International Journal of Procurement Management*, 2(2), 191-209.
- [10] Bergstrom, K., Soler, C., and Shanahan, H. (2005). Professional food purchasers' practice in using environmental information. *British Food Journal*. 107(5), 306-319.
- [11] Bolton, P. (2006). Government procurement as a policy tool in South Africa. *Journal Of Public Procurement*, 6(3), 193-217. Retrieved on 31/01/2018 [Online] from <http://www.ippa.ws/IPPC2/JOPP63/Article1Bolton.pdf>
- [12] Bolton, P. (2008). Incorporating environmental considerations into government procurement in South Africa. *Journal of South African Law*, 31-51.
- [13] Bovaird, T. (2006). Developing new forms of partnership with the 'market' in the procurement of public services. *Public Administration*, 84(1), 81-102.
- [14] Brammer, S., and Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management*, 31(4), 452 - 476.
- [15] Brulhart, M., and Trionfetti, F. (2004). Public expenditure, international specialisation and agglomeration. *European Economic Review*, 48(4), 851-81.
- [16] CEC (2003). The North American green purchasing initiative. Retrieved on 16th March, 2011 from <http://www.cec.org/Storage/50/4267NAGPI-brochure.en.pdf>

- [17] Driscoll, T., Halliday, A., Rastad, J., and Stock, R. (2010). Green Procurement Practices in the London Borough of Croydon. Available [http://www.wpi.edu/Pubs/E-project/Available/E-proiect-043010-091503/unrestricted/Croydon Final Report1.pdf](http://www.wpi.edu/Pubs/E-project/Available/E-proiect-043010-091503/unrestricted/Croydon%20Final%20Report1.pdf)
- [18] Edler, J., and Georghiou, L. (2007). Public procurement and innovation - resurrecting the demand side. *Research Policy*, 36(7), 949-63.
- [19] Edquist, C., Hommen, L., Tshipouri, L. (Eds.) (2000). *Public Technology Procurement and Innovation*. Kluwer Academic.
- [20] Eltayeb, T.K., Zailani, S., and Jayaraman, K. (2010). The examination on the drivers for green purchasing adoption among EMS 14001 certified companies in Malaysia. *Journal of Manufacturing Technology Management*, 21(2), 206- 225.
- [21] Emmett, S., and Sood, V. (2010). *Green supply chains: an action manifesto*. West Sussex: John Willey and Sons.
- [22] Epstein, M. J. (2008). *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental, and Economic Impacts*. Sheffield S38G6, U.K.: Greenleaf Publishing Limited.
- [23] Gardner, G. T. & Stern, P. C. (2008). The Short List: The Most Effective Actions U.S. Households Can Take to Curb Climate Change. *Environment*, 50(5), 12- 24.
- [24] Gelderman, C.J., Ghijsen, P.W., and Brugman, M.J. (2006). Public procurement and EU tendering directives - explaining non-compliance. *International Journal of Public Sector Management*, 19(7), 702-14.
- [25] Gupta, S. and Ogden, D.T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing*. 6, 91-110.
- [26] Hair, J.F., Black, W.C, Babin, B.J., Anderson, R.E., and Tatham, R.L. (2005). *Multivariate data Analysis*. Upper Saddle River, NJ: Prentice Hall.
- [27] Hair, J.F, Black, W.C, Babin, B.J, Anderson, R.E (2010). *Multivariate Data Analysis A Global Perspective*. Pearson 7th Ed pp 91 -151
- [28] Hall, M. and Purchase, D. (2006). Building or bodging? Attitudes to sustainability in UK public sector housing construction development. *Sustainable Development*, 14(3), 205-18.
- [29] King, A. and Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science*, 48(2): 289-99.
- [30] Lacroix, R.N. (2008). Green procurement and entrepreneurship. Retrieved on 16/01/2018 from <http://kallithea.hua.gr/epixeirein/hmerida7/lacroix.pdf>
- [31] Lane, B. And Porter, S. (2007). The adoption of cleaner vehicles in the UK: exploring the consumer attitude-action gap. *Journal of Cleaner Production*. 15, 1085- 1092.
- [32] Lee, S. (2008). Drivers for the participation of small and medium-sized suppliers in green supply chain initiatives. *Supply Chain Management: An International Journal*, 13(3), 185-198.

- [33] Mannetti, L., Pierro, A., and Livi, S. (2004). Recycling: planned and self-expressive behaviour. *Journal of Environmental Psychology*, 24, 227-236.
- [34] Mogoi, S.O. (2010). Effects of operational management practices on the procurement of pharmaceutical products in developing countries: a case of Kenya Medical Supplies Agency (KEMSA). Unpublished MBA Project, University of Nairobi.
- [35] Mwirigi, P.M. (2007). Green supply chain management practices by manufacturing firms in Kenya. Unpublished MBA Project, University of Nairobi.
- [36] Nunnally, J.C. (1978). *Psychometric Theory*, McGraw-Hill, New York, NY.
- [37] Nyiri, L., Osimo, D., Ozcivelek, R., Centeno, C., and Cabrera, M. (2007). Public procurement for the promotion of R&D and innovation in ICT. Institute for Prospective Technological Studies.
- [38] Obiero, M. (2008). The challenges in the implementation of the 2005 procurement Act on the Kenyan Ministry of Higher Education, Science and Technology. Unpublished MBA Project, University of Nairobi
- [39] Odhiambo, W., and Kamau, P. (2003). Public Procurement: Lessons from Kenya, Tanzania and Uganda. In Ssenoga, F. (2006). Examining discriminatory procurement practices in developing countries. *Journal of Public Procurement*, 6(3): 218-249.
- [40] OECD (2008). Fighting cartels in public procurement. October Policy Brief. Available online from <http://www.oecd.org/dataoecd/45/63/41505296.pdf>
- [41] OECD (2009). OECD in Figures, OECD, Paris. OECD Publication, "Why is procurement important?", December 2006, Page 3, viewed April 12 2011
- [42] Ohashi, H. (2009). Effects of transparency in procurement practices on government expenditure: a case study of municipal public works. *Review of Industrial Organization*, 34(3), 267-285.
- [43] Owuori, P.J. (2010). Procurement in donor-financed public projects in Kenya: a review of the bid processing time. Unpublished MBA Project, University of Nairobi.
- [44] Pavel, J. Ing. (2006). Public procurement market transparency indicators in the Czech Republic. Prague: Transparency International, Czech Republic.
- [45] Prajogo, D.I., McDermott, P., and Goh, M. (2008). Impact of value chain activities on quality and innovation. *International Journal of Operations & Production Management*, 28(7), 615-35.
- [46] Preuss, L. (2009). Addressing sustainable development through public procurement: the case of local government. *Supply Chain Management: An International Journal*, 14(3), 213-223.
- [47] Public Procurement Oversight Authority (2009). The long term policy framework for public procurement in Kenya. Draft Zero. Retrieved on 16th March, 2011 from <http://www.uneskenya.com/download/Draft Zero Long Term Public Procurement Policy%20-%20Revision3 .pdf>



- [48] Rao, P. (2006). "Greening of suppliers/in-bound logistics in the South East Asian context", in Sarkis, J. (Ed.), *Greening the Supply Chain*, Chapter 11, Springer, London, pp. 189-204.
- [49] Rao, P. (2002). Greening the supply chain: A new initiative in South East Asia. *International Journal of Operations and Production Management*, 22 (5), 632- 655.
- [50] Rao, P., and Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations & Production Management*, 25(9), 898-916.
- [51] Salam, M.A. (2008). Green procurement adoption in manufacturing supply chain. *Proceedings of the 9th Asia Pasific Industrial Engineering & Management Systems Conference*. Nusa Dua, Bali - INDONESIA December 3rd - 5th, 2008.
- [52] Sennoga, F. (2006). Examining discriminatory procurement practices in developing countries. *Journal of Public Procurement*, 6(3): 218-249.
- [53] Thai, K.V. (2001). Public procurement re-examined. *Journal of Public Procurement*, 1(1); 9-50.
- [54] Walker, H. and Brammer, S. (2009). Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal* 14(2): 128 – 137.