



**FACTORS AFFECTING THE IMPLEMENTATION OF GREEN PROCUREMENT IN THE AUTOMOBILE ASSEMBLING INDUSTRY IN KENYA: A CASE STUDY OF ISUZU MOTORS**

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**ABSTRACT**

*This study aimed at analysing the factors hindering the implementation of green procurement within the automobile industry in Kenya basing it in a case study of Isuzu Kenya. 118 correspondents were targeted and this was adjusted to only 91 sample size respondents. Descriptive research design was engaged and a stratified random sampling method was used to pick a sample of the respondents that were provided with questionnaires to fill. The target population comprised 118 employees. The sample size was selected using Slovin's formula. The data collected was analysed by use of descriptive and inferential statistics. The quantitative data generated was keyed in and analysed by use of Statistical Package of Social Sciences (SPSS) to generate information which was 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. From the findings in the study, it was without doubt that, presently, there lacked structural and organizational models that support green procurement implementation within entities. Moreover, the cost of green procurement was considered relatively high and thus acting as a stumbling block to firms that may wish to court green procurement. Resources essential for the implementation of green procurement were scarcely available and extremely limited thus hindering green procurement implementation. The study recommended that it is fundamental for organizations and all affected stakeholders that there exists support mechanisms and structures that support the implementation of green procurement. Decision making should be well articulated and those affected mostly should play a pivotal role in making changes. Policies and procedures must be embraced and put in place if green procurement is to be a success, a reduction in costs related to green procurement and proper allocation of resources is fundamental in successful implementation of green procurement. Significantly, the role of employees and their capabilities define how effective implementation of green procurement is.*

**Key Words:** Organization Structure, Procurement Policies, Cost Of Green Procurement, Firm Resources Capacity

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## INTRODUCTION

Today's business environment is characterized by increasing uncertainties and environmental management has become a topic of mutual concern for businesses, governments and consumers due to increasing high levels of industrialization (Arnaud, 2014). Green supply chain management (GSCM) is an emerging field motivated by the need for environmental consciousness (Zhu, Sarkis, & Geng, 2015). Green Procurement has emerged as an important new innovation that helps organizations develop "win-win" strategies that achieve profit and market share objectives by lowering their environmental risks and impacts, while raising their ecological efficiency (Hoffman & Sandelands, 2015). Despite the tangible and intangible benefit associated with green procurement, nothing much has been done in Kenya, the study therefore seeks to determine challenges facing the implementation of green procurement in the automobile assembling industry in Kenya.

There has been increasing emphasis on environment-friendly corporate activity in today's business world and many progressive companies are embracing green procurement management. The rise in greenhouse emissions and pollution of the environments by firms has precipitated the need for organizations to realign their supply chain operations with a view of conserving the scarce resources (Hsu & Hu, 2008).

The automotive industry in Kenya contributes a lot towards the economic growth of the country and provision of employment opportunities among the Kenyan citizens. Kenya's automotive retail and distribution sector is rapidly expanding due to infrastructure development, increasing incomes and access to credit facilities (Njoroge, 2017). The Automotive industry in Kenya is primarily involved in the retail and distribution of motor vehicles. There are a number of motor vehicle dealers operating in the country, with the most established being Toyota

(East Africa), Cooper Motor Corporation (CMC), General Motors (GM), Simba Colt and DT Dobie with Honda Motors which established its operations in Kenya in January 2013 as Division of Trans Africa Motors (TAM).

Since its inception in Kenya in 1975, Isuzu Motors initially General Motors East Africa (GMEA) has engaged in motor assembly and sale of trucks and buses. It is the largest manufacturer of commercial vehicles in eastern Africa with a more than fifteen models. GMEA is ISO 9001:2008 (quality management systems) and ISO 14001:2004 (environment management systems) the best known testimonials to world class quality and environment standards respectively. In addition, GMEA also meets Isuzu Japan Manufacturing Systems Quality Certification and complies with GM corporation corporate audit requirements.

Isuzu Motors rides on the more than 40 years' heritage and stride that has been made by GMEA. GMEA brags of over thirty years of experience in local assembly and service. Vehicles are engineered to satisfy local operating standards with up to 50% local content on a number of their models. Isuzu continues to develop and modify designs to meet customer requirements. There is an ultra-modern service Centre with state of the art equipment and skilled personnel to provide customers with additional services. In addition, there are additional support services to support the entire east African region dealer networks. The company has partnered with a number of east African countries particularly Tanzania and Uganda so as to increase its customers.

### Statement of the Problem

There is an increase in sensitizing people on the essence of protecting the environment worldwide. Issues relating to the environment are extremely sensitive and play a critical role in meeting entity set goals. Due to this, it is becoming a norm for entities to enter into business sustainable development

programs so as to survive. Some entities enter into this practice as a result of pressure from environmental bodies such as UNEP and the government, while others are forced by the public which is constantly demanding for a better environment to live and work in. According to Zhu, Sarkis, & Geng (2015), organizations pay more attention to the effect their activities cause to the environment and how this reflects on their corporate social responsibility.

Green procurement is rooted in the principle of pollution eradication. This thrives to reduce or totally eliminate risks to the environment and its habitat. 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. Mass-produced automobiles just like most mass-produced commodities entail the use of a wide variety and vast quantities of resources. In addition, there is the need for great amounts of human labour and mechanical power, and the generation of copious waste products.

Zhu, Sarkis, & Geng (2015) noted that Vehicle assembly plants themselves are major pollutants in America with fabrication of one car producing 29 tons of waste and 1,207 million cubic yards of polluted air. In recent years, the automotive industry in several developed countries in Europe has been a major purchaser of iron and steel (30 percent), lead for batteries (46 percent), aluminium (23 percent), and platinum for exhaust fume control (41 percent) which all release sulphuric acid and other smokestack emissions into the air upon processing (Atlas & Florida, 2018).

According to Kenya waste management (2013), less than 25% of more than 2000 tonnes of waste

produced by motor vehicle assembling plants within Nairobi city and its environs is collected and disposed-off well. The remaining percentage which is more than 75% is either left exposed or dumped wrongly posing danger to humans and the environment at large (Kenya Solid Waste Management (2013).

Isuzu Kenya is located in Nairobi near Nairobi river with about 30-60% of its waste generated is not collected. The company has no established formal systems for collection and recycling of tyres with the exception of rethreading. As such the bulk of the tyres are informally collected and often illegally burnt in the open to recover steel for recycling. This emits harmful gases causing air pollution and soil contamination arising from the residues. The company also produces Industrial waste in its manufacturing process which is both hazardous and non-hazardous waste. These wastes include chemical solvents, paints, sand paper, industrial by-products, metals, waste and radio-active waste (UNEP & UN-Habitat - Kenya, 2017).

Currently, most of the hazardous industrial waste is not pre-treated before reuse, recycling or disposal. This poses health risks to the handlers and causing damage to the environment as most of it ends up in river streams within Nairobi and its environs. The study therefore sought to determine the factors affecting the implementation of green procurement in the automobile assembling industry in Kenya.

### **Objectives of the study**

The general objective of this study to explore the factors affecting the implementation of green procurement in the automobile assembling industry in Kenya. The specific objectives were:-

- To analyse the effects of cost of green procurement services and products in the implementation of green procurement in the automobile assembling industry in Kenya
- To establish the extent to which organizational resources capability affects the adoption of green

procurement in the automobile assembling industry in Kenya

- To explore the effects of organizational structure on the implementation of green procurement in the automobile assembling industry in Kenya
- To find out how procurement policies affect the adoption of green procurement within the automobile industry in Kenya

The research hypothesis were;

H01: Cost of green procurement has no significant effect on implementation of green procurement in the automobile assembling industry in Kenya?

H02: Organizational resources have no significant effect on implementation of green procurement in the automobile assembling industry in Kenya?

H03: Organizational structure has no significant effect on implementation of green procurement in the automobile assembling industry in Kenya?

H04: Procurement policies have no significant effect on implementation of green procurement in the automobile assembling industry in Kenya?

## LITERATURE REVIEW

### Resource Based View Theory

The resource-based view holds that firms can earn sustainable super normal returns if and only if they have superior resources which are protected by some form of isolating mechanism preventing their diffusion within the industry (Vellero, 2008). According to this theory, an organization needs to selfishly guard resources that are rare, valuable and hard to substitute which are behind their competitive advantage. Resources refer to assets, processes, information and knowledge an entity owns and controls so as to improve its efficiency and effectiveness (Douma, 2012).

Resource-Based View (RBV) provides a good theoretical foundation to discuss the contribution of resources and capabilities to a firm's performance. The theory gives an insight on the relations among internal resources, capabilities and performance. The

principal idea of the RBV is perhaps one of the most influential frameworks for environmental management (Vellero, 2008).

### Transaction Cost Economics (TCE) Theory

The term "transaction cost" is frequently thought to have been coined by Ronald Coase, who used it to develop a theoretical framework for predicting when certain economic tasks would be performed by firms, and when they would be performed on the market (Douma, 2012). The term transaction cost reasoning became most widely known through Oliver E. Williamson's *Transaction Cost Economics*. Today, transaction cost economics is used to explain a number of different behaviours. Often this involves considering a "transaction" not only the obvious cases of buying and selling, but also day-to-day emotional interactions, informal gift exchanges (Klaes, 2018).

### System Theory

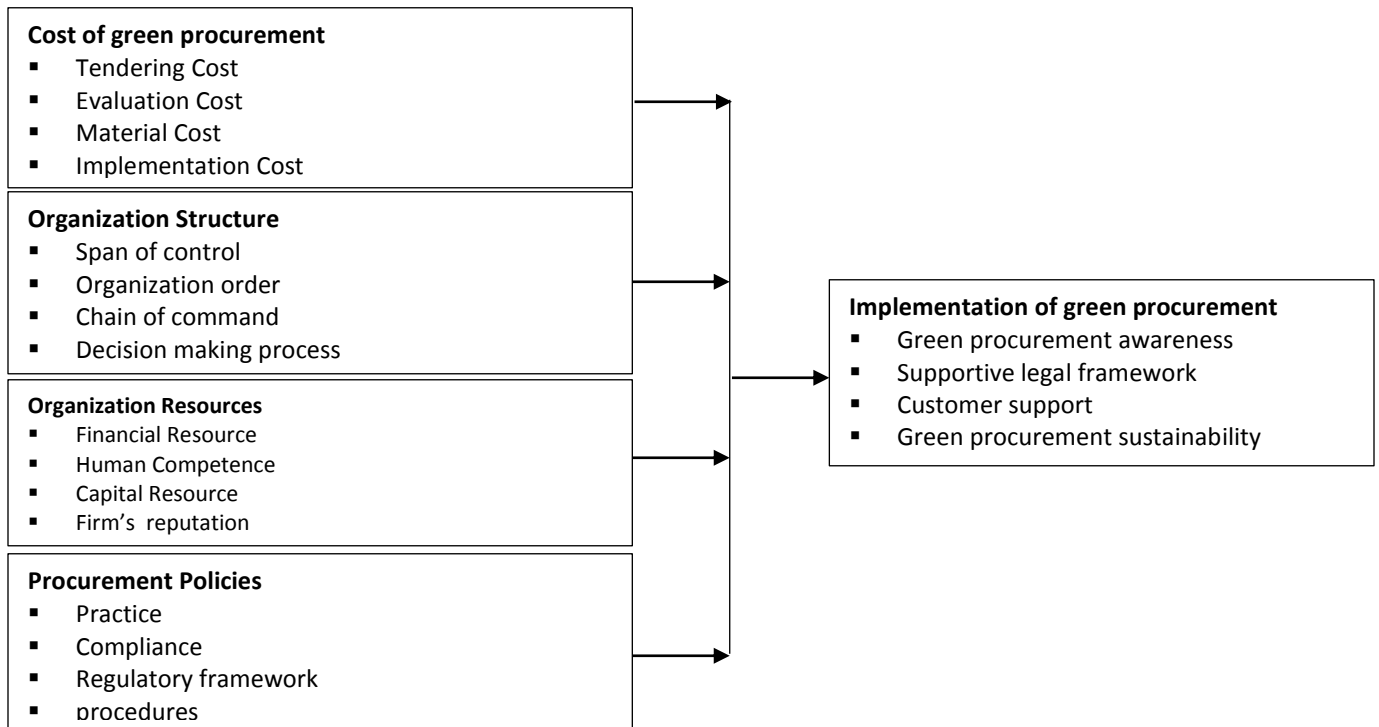
Systems theory or systems science is the interdisciplinary study of systems. A system is an entity with interrelated and interdependent parts. It is defined by its boundaries and it is more than the sum of its parts (subsystem). Change in one part of the system affects other parts and the whole system, with predictable patterns of behaviour thus positive growth and adaptation of a system depend upon how well the system is adjusted with its environment, and systems often exist to accomplish a common purpose (William, 2006).

Systems theory describes the interrelation of all parts of an organization and how one change in one area can affect multiple parts (Li & Geiser, 2013). According to Borth (2015) organizations act as systems interacting with their environment and that any equilibrium is constantly changing as the organization adapts to its changing environment thus all the components of an organization are interrelated, and that changing one variable might impact many others.

**Stakeholder Theory**

A stakeholder is an individual or group of persons who are affected by the operations of an organization. It is clear that organizations impact different stakeholders differently resulting to different reactions. Stakeholders can either decide to increase or decrease their involvement in the

organization’s running or operations. According to the stakeholders’ theory, there is need for a firm to pursue strategies that impact stakeholders’ interests positively and reduce on the activities have negative consequences on the stakeholders (Hoffman & Sandelands, 2015).



**Independent Variable**

**Dependent Variable**

**Figure 1: Conceptual framework of the study**

**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 a differentiated materialist viewpoint on organizational culture to understand the level of desire exhibited by the organization and by the procurement department in adopting green procurement.

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.

A study carried out by Zhu, Sarkis & Geng (2019) on Green Supply Chain Management in China; Pressures, Practices and Performance recommends that a number of challenges facing institutions such as corruption, unaccountability and legislation need to be addressed. There needs to be legal implications on violations of green procurement acts. In Kenya, there is no law compelling manufacturers and other business people to practice green procurement.

There is the need to introduce training on all procurement officers to sensitize them on the advantages associated with green procurement through seminars and conferences. Transparency also plays a vital role and this can be achieved through sharing information and understanding one's role.

Zhu *et al.*, (2009) also noted the significance of dedicating (physical) resources to 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).

Li, & Geiser (2013), carried out a study on Environmental Responsible Public Procurement and Its Implications On Integrated Product Policy. The study recommends that organization resources and structure must embrace the idea of green procurement if it is to succeed. Accountability must be emphasized since the whole procurement idea is sensitive and it affects the performance of an organization. In addition, the management must decentralize decision making process so that those affected directly are in positions of making minor decisions instead of waiting on the top management. Significantly, there is need to put in place adequate policies and procedures that support green procurement. This helps increase accountability and effecting implementation procedures (Marron, 2015).

## METHODOLOGY

The study adopted a descriptive design because it is concerned with finding out the 'who' the 'what' the 'where' and the 'how, of a phenomenon which is the concern of the study. According to Isuzu company website, nationally the company had over five hundred employees. However according to the HR department, employees stationed at office and who

could comfortably respond to the questionnaires they were 118 employees only. A representative sample size was selected using Stratified random sampling for management and employees since population of interest was not homogeneous and could be subdivided into groups or strata to obtain a representative sample. The study relied on data collected through questionnaires with both closed ended and open ended questions structured to meet the objectives of the study. Data was from both primary and secondary sources.

Primary data was collected using questionnaires distributed to respondent's offices, the exercise of sending and getting responses was expected to take approximately two weeks. The use of primary data provided an opportunity to identify new insights that may have changed over time.

The questionnaires were sent to Top and Middle level management because of the experience they have on environment, procurement and outsourcing of materials. Secondary data was collected from journals, books and reports. The study first embarked at Isuzu Kenya, to ensure that the data collected was valid and thus relevant to the research. A multiple regression model was used to establish relationship between the independent and dependent variable.

The model was in the form of:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where;

$\beta_0$  - Is the constant or intercept

$\beta_1$ -3 Are the regression coefficients or change induced in Y by each X

X1 - Independent variable cost factor on implementation of green procurement.

X2 - Independent Variable Organization resources on implementation of green procurement.

X3 - Independent Variable Organization structure on implementation of green procurement

X4 - Independent Variable Procurement policy on implementation of green procurement

Y - Dependent variable implementation of green procurement.  $\epsilon$  - Is the error component

## RESULTS

### Effect of Cost of green procurement services and products on implementation of green procurement in the automobile assembling industry in Kenya

**Table 1: Mean and Standard Deviation on Cost of Procurement**

Statement	Mean	Std. Deviation
Tendering cost is higher compared to other materials.	3.86	0.966
Production cost is higher than non-green production	3.32	1.187
The green procurement procedure is tedious	4.18	0.044
Green procurement requirements are many and costly	3.78	1.068
Green procurements requires extra machine set up	3.88	1.014
Green procurement requires costly documentation	3.26	1.176
Green procurement requires overall restructuring	4.14	0.074
Green procurement start-up cost is high grievances	3.77	1.072
Green procurement processing cost is high	3.78	1.068

The most seriously faced challenges were: Tendering cost is higher compared to other materials. ( $M=3.86$ ,  $SD=.097$ ); The green procurement procedure is tedious ( $M=4.18$ ,  $SD= .044$ ); Green procurement requires overall restructuring ( $M=4.14$ ,  $SD= .074$ ); Green procurement requirements are many and costly ( $M=3.78$ ,  $SD= 1.1068$ ); Green procurements requires extra machine set up ( $M=3.88$ ,  $SD= 1.1014$ );

Green procurement start-up cost is high grievances ( $M=3.77$ ,  $SD= 1.072$ ) and Green procurement processing cost is high ( $M=3.78$ ,  $SD= 1.068$ ). The areas that showed the least sources of challenge are Production cost is higher than non-green production ( $M=3.32$ ,  $SD= 1.187$ ) and that Green procurement requires costly documentation ( $M=3.26$ ,  $SD= 1.176$ )

### Effect of organization resources on the adoption of green procurement in the automobile assembling industry in Kenya

**Table 2: Mean and Standard Deviation on Organization resources**

Statement	Mean	Std. Deviation
Green procurement requires good financial capability	3.77	.996
Green procurements require skilled human resource.	3.18	1.158
Green procurement requires high capital resource	4.18	1.044
The process requires additional facilities	3.74	1.079
The process requires new highly qualified people	3.86	1.014
The process requires changing of existing production	3.38	1.246
The process requires specialized machine installation	4.14	1.074
The process requires new costly materials.	3.31	1.145
The process may require extra land to run smooth	3.78	1.068



Most of the respondents were in strong agreement with the following: Green procurement requires high capital resource ( $M=4.18, SD=.0.044$ ); The process required specialized machine installation ( $M=4.14, SD= .074$ ); Green procurement required good financial capability ( $M=3.77,SD= .996$ ); The process required new highly qualified people ( $M=3.86,SD= 1.1014$ ); Green procurements requires extra machine

set up ( $M=3.88,SD= 1.1014$ ); The process may require extra land to run smooth ( $M=3.78,SD= 1.068$ ). The areas that showed the least sources of challenge are Green procurements require skilled human resource ( $M=3.18,SD= 1.158$ ) ; The process required changing of existing production( $M=3.38,SD =1.246$ ) and the process required new costly materials ( $M=3.31,SD= 1.145$ )

**Effect of organization’s structure on implementation of green procurement in the automobile assembling industry in Kenya**

**Table 3: Mean and Standard Deviation on Organization structure**

Statement	Mean	Std. Deviation
The process requires overhaul of existing structure.	4.34	.713
New reporting lines may bring about conflict	3.72	1.008
The structure may not accommodate all the requirements.	3.89	.753
Existing structure affects implementation of the process	4.12	1.341
Departmentation has significance on green procurement	4.12	.839
Chain of command has significance on green procurement	3.92	.816
Centralization and decentralization may affect the process	3.40	1.344
Formalization may bring about disruptive change	3.85	1.121
Process may experience resistance from existing structure.	3.65	1.419

From table , respondents were in agreement with the statements; The process requires overhaul of existing structure, The structure may not accommodate all the requirements, Existing structure affects implementation of the process, Departmentation has significance on green procurement, Chain of command has significance on green procurement, Employees are encouraged to plan/execute work with

no/minimal interference, Centralization and decentralization may affect the process, Formalization may bring about disruptive change and that Process may experience resistance from existing structure. This is supported by their respective means of 4.34, 3.72, 3.89, 4.12, 4.12, 3.92, 3.40, 3.85 and 3.65.

**Effect of procurement policies on adoption of green procurement within the automobile industry in Kenya**

**Table 4: Mean and Standard Deviation on Procurement policies**

Statement	Mean	Std. Deviation
Existence of procurement policy plays a key role in green procurement	3.17	1.145
A procurement policy seeks to minimize expenses.	3.06	1.200
A procurement policy creates an enabling environment for green procurement	4.15	1.299
Procurement policy removes legal obstacles in facilitating green procurement.	4.98	.816
A Procurement policy provides scope of work in green procurement	3.25	1.199
Procurement policy provides a base for establishment of green procurement practices.	3.08	1.195
Procurement policy on green procurement is affected by size of the company.	4.20	1.325
Relevant regulatory bodies support play a key role in implementing green procurement	4.13	.865
Procurement planning provides base for growth of green procurement	4.36	.826

From the table 4, the respondents were in agreement with the following statements: Existence of procurement policy played a key role in green procurement; A procurement policy seeks to minimize expenses; A procurement policy creates an enabling environment for green procurement; Procurement policy removes legal obstacles in facilitating green procurement; A Procurement policy provides scope of work in green procurement, Procurement policy provides a base for establishment of green procurement practices, Procurement policy

on green procurement is affected by size of the company, Procurement policy on green procurement is affected by size of the company, Support by relevant regulatory bodies play a key role in implementation of green procurement and that Procurement planning provides base for growth of green procurement. This is supported by their respective means of 4.08, 4.03, 3.89 and 4.06. There were also dispersed as indicated by a standard deviation of 1.145, 1.200, 1.299, 1.199, 1.195 and 1.325.

### Implementation of green procurement

**Table 5: Mean and Standard Deviation**

Statement	Mean	Std. Deviation
Tendering cost has direct impact on green procurement implementation	3.96	.766
Evaluation cost has direct impact on green procurement implementation	3.82	1.187
Monitoring cost has direct impact on green procurement implementation	4.18	1.044
Human resource has direct impact on green procurement implementation	3.78	1.068
Capital resource has direct impact on implementation of green procurement	3.86	1.014
Centralization & decentralization has direct impact on implementation of green procurement	3.76	1.076
Span of control has direct impact on implementation of green procurement	4.14	1.074
Departmentalization has direct impact on implementation of green procurement	3.97	1.072
Formalization has direct impact on implementation of green procurement	3.78	1.068

From the table above, respondents were in agreement with the statements. Tendering cost has direct impact on green procurement implementation, Evaluation cost has direct impact on green procurement implementation, Monitoring cost has direct impact on green procurement implementation, Human resource has direct impact on green procurement implementation, Capital resource has direct impact on implementation of green procurement, Span of control has direct impact on implementation of green procurement,

Departmentalization has direct impact on implementation of green procurement, Formalization has direct impact on implementation of green procurement and Centralization & decentralization has direct impact on implementation of green procurement. This was supported by their respective means of 3.86, 3.32, 4.18, 3.78, 3.86, 3.26, 4.14, 3.77 and 3.78. Statements in the table also exhibit a high dispersion of 1.187, 1.044, 1.068, 1.014, 1.176, 1.074, 1.072 and 1.068. The variable had average mean of 3.9 (M=3.9).

## Inferential Statistics

**Table 6: Correlations**

Control Variables	COGP	OR	OS	PP	IGP
COGP	1				
OR	0.695	1			
OS	0.373	0.228	1		
PP	0.637	0.022	0.212	1	
IGP	0.836	0.421	0.208	0.224	1

From table 6, the results generally indicated the four variables were found to have market positive significant correlations on implementation of green procurement at 5% level of significance. There was a weak positive and significant correlation between Organization resource and implementation of green procurement ( $r = 0.208$ ,  $P < 0.05$ ). There was a weak positive and significant correlation between Procurement policy and implementation of green procurement ( $r = 0.224$ ,  $P < 0.05$ ). There was a strong positive and highly significant correlation between

cost of green procurement and implementation of green procurement ( $r = 0.836$ ,  $P < 0.05$ ). There was a moderately strong positive and highly significant correlation between Organizational resource capability and implementation of green procurement ( $r = 0.421$ ,  $P < 0.05$ ). The findings concur with the analysis of variance (ANOVA) that examined the value of F– statistic and its corresponding significance. When the test was run at 0.05 significance level, the p value was 0.000. If p value (0.000) is less than  $\alpha$  (0.05) then the result is significant.

**Table 7: Regression Weights**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.866	2.15		1.33	0.024
Cost of green procurement	0.801	0.149	0.823	5.376	0.000
Organization resource	0.656	0.261	0.3	2.513	0.004
Organization structure	0.563	0.179	0.504	3.145	0.003
Procurement policies	0.709	0.144	0.446	4.923	0.000

### a. Dependent Variable: Implementation of green procurement

The researcher conducted a multiple regression analysis so as to determine the relationship between Y and the four variables. As per the SPSS generated, the equation,  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$  become:

$$Y = 2.866 + 0.801X_1 + 0.656X_2 + 0.560X_3 + 0.709X_4 + \epsilon$$

Where Y is the dependent variable implementation of green procurement,  $X_1$  is Cost of green procurement,

$X_2$  is Organization resource,  $X_3$  is Organization structure and  $X_4$  is Procurement policies

According to the regression equation established, taking all factors at zero, implementation of green procurement will be 2.866 .The data findings analysed also show that taking all other independent variables at zero, a unit change in cost of green procurement will lead to a 0.801 change in implementation of green procurement; a unit change

in organizational resources variable will lead to a 0.656 change in implementation of green procurement; a unit change in organization's structure will lead to a 0.560 change in implementation of green procurement; a unit change in procurement policies will lead to a 0.709 change in implementation of green procurement.

### **Hypothesis 1**

H0: Cost of green procurement has no significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1=0$ ,

H1: Cost of green procurement has no significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1\neq 0$ ,

In relation to the variable Cost of green procurement, the results from the table above indicated that Cost of green procurement has a significant influence on implementation of green procurement. This is supported by regression analysis t-value of 3.194 which is greater than the critical value 2.0 and a p-value of 0.01 at 95% level of significance which is less than 0.05. After testing the hypothesis by comparing the scores of calculated t-value and critical t; Calculated t-values was, 3.194 which is greater than the critical  $t_{36-1} (0.05) = 2.0$ . The study rejected the null hypothesis that Cost of green procurement has no significant effect on implementation of green procurement in the automobile assembling industry in Kenya and accepted the alternative hypothesis that Cost of green procurement has significant effect on implementation of green procurement in the automobile assembling industry in Kenya.

### **Hypothesis 2**

H0: Organizational resources have no significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1=0$ ,

H1: Organizational resources have significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1\neq 0$ ,

In relation to the variable, the results in above table indicated that the variable has significant effect on implementation of green procurement. This is supported by regression analysis t-value of 2.95 which is greater than the critical value 2.0 and a p-value of 0.04 at 95% level of significance which is less than 0.05. After testing the hypothesis by comparing the scores of calculated t-value and critical t ; Calculated t-values was, 2.95 for the variable, which is greater than the critical  $t_{36-1} (0.05) = 2.0$ , the study rejected the null hypothesis and thus accepted the alternate hypothesis.

### **Hypothesis 3**

H0: Organizational structure has no significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1=0$ ,

H1: Organizational structure has significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1\neq 0$ ,

In relation to the variable, the results above table show the variable has a significant influence on implementation of green procurement. This is supported by regression analysis t-value of 4.111 which is greater than the critical value 2.0 and a p-value of 0.00 at 95% level of significance which is less than 0.05. After testing the hypothesis by comparing the scores of calculated t-value and critical t; Calculated t-values was, 4.111 for the variable, which is greater than the critical  $t_{36-1} (0.05) = 2.0$ , the study rejected the null hypothesis and accepted the alternative hypothesis.

### **Hypothesis 4**

H0: Procurement policies have no significant effect on implementation of green procurement in the automobile assembling industry in Kenya

$\beta_1=0$ ,

H1: Procurement policies have significant effect on implementation of green procurement in the automobile assembling industry in Kenya.

$\beta_1 \neq 0$ ,

In relation to the variable, the results in above table indicated that the variable has a significant influence on the dependent variable. This is supported by regression analysis t-value of 3.109 which is greater

than the critical value 2.0 and a p-value of 0.004 at 95% level of significance which is less than 0.005. After testing the hypothesis by comparing the scores of calculated t-value and critical t; Calculated t-values was, 3.109 for the variable, which is greater than the critical  $t_{36-1} (0.05) = 2.0$ , the study rejected the null hypothesis and accepted the alternative hypothesis procurement policies has significant effect on implementation of green procurement.

### Regression Analysis

**Table 8: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>
1	0.879	0.773	0.758

In order to test the research hypotheses, a standard multiple regression analysis was conducted. The four independent variables that were studied explained only 75.8% of factors affecting the implementation of green procurement in the automobile assembling

industry in Kenya as represented the adjusted R<sup>2</sup>. This therefore means that other factors not studied in this research contribute 24.2% of factors affecting the implementation of green procurement in the automobile assembling industry in Kenya.

**Table 9: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2857.59	4	714.398	48.446	.000 <sup>b</sup>
Residual	840.564	57	14.746		
<b>Total</b>	<b>3698.154</b>	<b>61</b>			

To determine whether there existed a linear relationship among the variables in the regression, the analysis of variance (ANOVA) output was examined. The analysis of variance reports how well the regression equation fits the data by studying the value of F – statistic and its corresponding significance. When the test was run at 0.05 significance level, the p value was 0.000. If p value (0.000) is less than  $\alpha$  (0.05) then the result is significant. The regression model predicts employee performance well as seen from the results indicating that relationship was statistically significant (F = 48.446, p = .000).

sustainable products and services is too high and the benefits do not justify the time and effort it requires. Whilst in many cases the price may currently be a little higher, this is certainly not true in all cases, especially if all costs related to the product or service throughout its lifetime (purchase price, usage, maintenance and disposal costs) are considered, and not just the purchase price – Life-cycle costing. In many cases substantial savings are actually possible; this is before even considering the wider costs to society related to environmental degradation and social problems.

The financial environment which includes economic performance has a major effect on how buyers conduct their procurement operations and with the technological landscape constantly changing,

### CONCLUSIONS

The most common misconception about sustainable (or green) procurement is that the price of more

customers have come to expect businesses to operate faster, be more connected and offer them the latest advances and be environment friendly. Organizations need to be on top of changes in the technological environment and how this affects their business, from the products and services offered, to the way buyers collaborate with suppliers. Technology has a massive impact on procurement thus an important organizational resource in green procurement (Mutingi, 2017). A business that ignores socio-cultural external factors will do so at their peril thus Procurement departments need to understand how social and cultural factors affect customer behaviours and expectations.

An organizational structure defines how activities such as task allocation, coordination and supervision are directed towards the achievement of organizational aims. Organizations need to be efficient, flexible, innovative and caring in order to achieve a sustainable competitive advantage. Organizational structure can also be considered as the viewing glass or perspective through which individuals see their organization and its environment, an organization can be structured in many different ways, depending on its objectives and the structure of an organization will determine the modes in which it operates and performs

A procurement policy seeks to minimize expenses associated with the purchase of those goods and services by using such strategies as volume purchasing; the establishment of a set roster of vendors and establishing reorder protocols that help to keep inventories low without jeopardizing the function of the operation. Both small and large companies as well as non-profit organizations routinely make use of some sort of procurement policy. There is no correct way to establish a procurement policy, factors such as the size of the business, the availability of vendors to supply necessary goods and services, and the cash flow and

credit of the company will often influence the purchasing procurement approach.

## **RECOMMENDATIONS**

Integrating environmental, health and safety aspects of products/services into the procurement process (and weighting them accordingly), alongside the traditional criteria of cost, quality, safety and technical performance should be incorporated in both public and private sector organizations. Companies that are keen in identifying and procuring materials, substances and chemicals in their products that pose significant environmental threat has the potential to reduce the frequency/severity of accidents, reduce liability and material handling and disposal hence direct cost savings and increased environmental benefits.

Green manufacturing strategies can help alleviating key resource scarcities, including shortages in conventionally recoverable oil reserves, metal ores and water. Green manufacturing should aim to reduce the amount of natural resources needed to produce finished goods through more energy- and materials efficient manufacturing processes that also reduce the negative externalities associated with waste and pollution. In broad terms, green manufacturing should involve re-designing of products, production systems and business models, as well as extended producer responsibility in the form of take-back or reversed supplies, resource efficient and clean production, remanufacturing, and recycling on a significant scale.

Organizational structure should allow the expressed allocation of responsibilities for different functions and processes to different entities such as the branch, department, workgroup and individual. Organizational structure should affect organizational action in two ways: providing the foundation on which standard operating procedures and routines rest and it determining which individuals get to participate in which decision-making processes, and

thus to what extent their views shape the organization's actions.

The size of the company is likely to make a difference in the formation of procurement policy in that a small company may not be able to command the volume purchase discounts that a large corporation such as Isuzu East Africa can manage with relative ease. Official launch of Public Procurement Reforms can set the country on the reform road in the area of public procurement by putting in place a unified legal and regulatory framework to guide the reforms.

### **Suggestion for Further Research**

The current study was based on a limited sample. Only a sample was picked from the Isuzu Motors Company to represent a whole industry that is constantly changing. Therefore, the results could not be generalized to other companies in Kenya especially in the analytical terms. Further research needs to be done on a bigger scale with a large sample size to shed light and determining the factors affecting the implementation of green procurement in the automobile assembling industry in Kenya. The research should also be done on other industries to determine the factors affecting the implementation of green procurement so as to embrace the whole idea as an economy and reap its benefits.

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