

0.7 or above to determine adequacy of reliability of the study constructs. The tests established that all constructs recorded alphas of 0.7 plus hence were all reliable and acceptable for the study (Rousson, Gasser & Seifer, 2012).

Validity Test

Mugenda and Mugenda (2009) define validity as the accuracy and meaningfulness of inferences, based on the research results. The study used expert (supervisor) to test and ensure both content and face validity of the data collection instrument (Gillham, 2011). The feedback from the expert (supervisor) was used to make the necessary adjustments on the instrument for instance by removing the ambiguous items, reviewing to constructs and their measures in line with theoretical foundations of the study.

3.6 Data Analysis and Presentation

The study generated both qualitative and quantitative data. Content analysis was used to analyse the qualitative data for the purposes of validating the quantitative data. Quantitative data was coded and entered into Statistical Packages for Social Science (SPSS) and analysed using both descriptive statistics and inferential statistics. Descriptive statistics (frequencies, percentages, mean and standard deviations) were used to describe and summarise data (Kothari, 2014). Inferential statistics (multiple regressions analysis) modelled in the form of:

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ was used to test the hypothesised model (conceptual framework) where follows:-

Y = Procurement performance

X1 = Reverse logistics

X2= Green specification

X3 = Green inventory management

X4 = Green tendering

$\beta_1, \beta_2, \beta_3$ and β_4 are coefficients of determination and ϵ is the error term.

The model parameters for interpretation were: R-squared and P-values. R-squared is a statistical measure of how well the data fit the regression line (Cooper & Schindler, 2011). It is also known as the coefficient of determination, or the coefficient of multiple determination for multiple regression. The p-value is used as an alternative to rejection points to provide the smallest level of significance at which the null hypothesis would be rejected. A smaller p-value means that there was stronger evidence in favour of the alternative hypothesis (Kothari, 2011). The study findings were presented on tables and figures.

4.0 RESULTS AND DISCUSSIONS

4.1 Response Rate

The study targeted 108 respondents out of which 100 (representing 93%) fully completed and returned the questionnaires while the rest (8) or 7% did not. The response rate of ninety three percent (93%) was taken to be adequate for this study in line with Rousson et

al., 2012) that a response of fifty percent plus (>50%) is enough in social research. This finding is presented on Table 4.1:

Table 4.1: Rate of Response

Category	Frequency	Percent
Filled questionnaires	100	93
Unfilled questionnaires	8	7
Total	108	100

4.2 Model Tests

In order to establish the influence of sustainable procurement practices on the performance of procurement in food and beverage firms in Kenya, a multiple regression analysis model: $Procurement\ Performance = B_0 + B_1RL + B_2GS + B_3GI + B_4GT + E$ was used where B_0 is the value of Procurement Performance when all the independent factors (RL , GS , GI , and GT) are zero, B_1 to B_4 are regression coefficient and E is the error term. The test result on Table 4.2 shows that the model coefficient of determination (R Square) is 0.796, while Table 4.3 shows that p-value to be 0.000; $F = 92.821$. These findings indicate that 79.6 percent of procurement performance in the food and beverage firms is explained by sustainable procurement practices and that the influence of sustainable procurement practices on procurement performance is positively significant, p-value (0.000) < 0.005 and F calculated at 5 percent level of significance ($92.821 > F\ critical\ (value = 2.428)$). Table 4.4 shows that the predictor equation for procurement performance (Y) versus independent factors (Xi) takes the form:

$$Procurement\ Performance = 1.319 + 0.634(RL) + 0.793(GS) + 0.608(GIM) + 0.542(GT) + 1.073$$

These denote that procurement performance increases by 0.634 when reverse logistics increases by 1 index unit, goes up by 0.793 when green specification increases by 1 index unit, increases by 0.608 when green inventory management goes up by 1 index unit, goes up by 0.542 when green tendering adjusts by 1 index unit. Further, the results indicate that green specifications exert greatest influence on procurement performance at 79.3 percent followed by reverse logistics at 63.4 percent, green inventory management at 60.8 percent and the least is green tendering at 54.2 percent

Table 4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.892	0.796	0.791	1.073

Table 4. 3: ANOVA Results

Model	Sum Squares	Df	Mean Square	F	Sig.
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Regression	734.11	4	183.528	92.821	0.000
Residual	187.83	95	1.9772		
Total	921.94	99			

Table 4.4: Regression Results: SP Practices and Procurement Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error			
(Constant)	1.319	0.352		3.747	0.000
Reverse logistics (RL)	0.634	0.214	0.591	2.963	0.003
Green specification (GS)	0.793	0.317	0.648	2.502	0.013
Green inventory management (GIM)	0.608	0.271	0.575	2.244	0.021
Green tendering (GT)	0.542	0.233	0.517	2.326	0.026

4.3 Discussion of the Result

The study aimed to establish the influence of sustainable procurement practices on the performance of procurement in food and beverages manufacturing firms in Kenya. This study is anchored on the holder theory which postulate a relationship between sustainable procurement practices and procurement performance. According to this theory, sustainable procurement practices offer firms opportunities to reduce cost of operations through use of minimal packages, products re-use, recycling, preference to recycled products, bio-degradable products, and minimal usage of tree products like papers. The theory content that such practices have the potential to endear the firm to community resulting on customer loyalty and reduces the cost of compliance with statutory environmental management requirements (Mainardes, Alves & Raposo, 2011; Alkhafaji, 2011; Foerstl, Reuter, Hartmann & Blome, 2010; Van Weele, 2012). These therefore inform the discussions of the study results. The findings of the study indicate that food and beverage manufacturing firms which have embraced sustainable procurement practices registered remarkable improvement on the performance of their procurement function; $P < 0.005$ ($P = 0.000$) with an explanatory power of 79.6 percent. The study question for the main objective is therefore affirmatively answered that sustainable procurement practices significantly positively influence procurement performance of the firms. This finding therefore agrees with a number of past studies (Mainards *et al.*, 2011; Van Weele, 2012; Muttimos, 2014) which established a significant positive relationship between sustainable procurement practices and procurement performance.

The study first specific objective was to determine the influence of reverse logistics on the performance of procurement. The findings $r = 0.634$, $p < 0.05$ ($p = 0.003$) indicate that reverse logistics positively significantly affect performance of procurement performance with an explanatory power of 63.4 percent. These findings were in line with those of Muttimos (2014), which established a positive correlation between reverse logistics and performance of manufacturing firms through cheaper raw material, reduction of waste through recycling and re-use.

The second specific objective of the study was to ascertain the effect of green specification on the performance of procurement. The study findings indicate a positive significant effect of green specification on the procurement performance of food and beverages manufacturing firms in Kenya, $r=0.793$, $p< 0.05$ ($p=0.013$). These findings were consistent with those of Russo and Cardinali, (2012) who posits that green specification potentially contributes to the quality of supplies and further increases chances of selecting competent and responsive suppliers.

The third specific objective of the study was to establish the influence of green inventory management practices on the performance of procurement. The study findings $r=0.608$, $p<0.05$ ($p=0.026$) shows that green inventory management positively affects procurement performance in food and beverages manufacturing firms in Kenya. These findings were consistent with those of Fung, Cheung, Lee and Kwok, (2015) who postulates that virtual warehousing is a model developed for businesses with the aim of optimizing production, reducing costs and providing supply chain channels with customer service that is of high quality

Finally, the fourth specific objective of the study was to determine the influence of green tendering of the performance of procurement. The study findings; $r=0.542$, $p<0.05$ ($p=0.021$) indicate a positive significant effect of green tendering on procurement performance in food and beverages manufacturing firms in Kenya. These findings were in line with those of Gitau and Shalle, (2014) which established that greening the tendering activities potentially cut cost of documentation, reduces cycle time and provide an opportunity to practice lean procurement.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Appositive significant relationship between sustainable procurement practices and procurement performance was established. However, among the sustainable procurement practices, green specification was found to be the one exerting greatest influence on procurement performance followed by reverse logistics, green inventory management and green tendering respectively.

Conclusion

Based on the study findings, it is concluded that procurement performance is most affect by green specification followed by reverse logistics, green inventory management and green tendering respectively. It is further concluded that the combined effect of sustainable procurement practices is higher than those of individual practices.

Recommendations

The study therefore recommends that manufacturing firms should institutionalise sustainable procurement practices through formulation and implementing of green procurement policies and procedures in order to manage their operational costs, comply with environmental regulatory authority requirements and increase quality of supplies. Secondly, management should proactively sensitise the general employees on befits of

sustainable practices and specifically in regard to procurement function in order to create green culture with consequential performance benefits. Further, the government should take a deliberate step through policy interventions to encourage firms to green their operations as a way of preserving the environment and sustainably manage the natural resources to support future needs of her populace. This will have a multiplier effect of increasing performance of firms and make them catalysers of Vision 2030.

Suggestions for Further Studies

Further studies are recommended focusing on a different sector of the economy for comparison. It is further suggested that a study with more factors should be considered to provide an in-depth understanding of the concept sustainable procurement with possible intervening variables under considerations. A similar study should be conducted using longitudinal research design for comparison.

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