

DETERMINANTS OF SUSTAINABLE PROCUREMENT AMONG PUBLIC MIDDLE LEVEL COLLEGES IN NAKURU COUNTY, KENYA

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Abstract

The Public Procurement and Asset Disposal Act of 2015 and the Procurement Regulations of 2006 introduced new standards for public procurement in Kenya. Kenya as one of the developing countries has been slow in taking up structured and policy driven approach to enhancing adoption of green procurement the benefits accruing notwithstanding. The objective of the study was to evaluate the determinants of sustainable procurement among public middle level colleges in Nakuru County, Kenya. The study was guided by the following specific objectives: To determine influence of Supplier engagement on sustainable procurement among public middle level colleges in Nakuru County, To assess the influence of risks mitigation practices on sustainable procurement among public middle level colleges in Nakuru County and to analyze effect of information and Communication Technology utilization on sustainable procurement among public middle level colleges in Nakuru County. The study has reviewed related to the study such as Stakeholder Theory (ST) and the resource-based view (RBV) theory. The study adopted survey research design. The study targeted all departmental heads and senior Managers within public middle level colleges in Nakuru County and whereby a target of 69 respondents were used for the study using census approach. A closed ended questionnaire was used to collect data and whereby the instruments were pilot-tested to ascertain its validity. Cronbach alpha (α) was used to measure the reliability of the instrument. Variables that returned alpha value of at least equal to 0.7 was considered reliable. After data collection, analysis was done using frequencies, means and standard deviations for descriptive statistics. Multiple regression was used for inferential statistics in order to establish the relationship between supplier engagement, risk mitigation and ICT and sustainable procurement. The study found out that there is statistically significant influence of supplier engagement, risk mitigation practices and ICT adoption on sustainable procurement among public middle level colleges in Nakuru County, Kenya. This study recommends public middle level colleges to effectively manage their customer relations and to embrace communication strategy that allows their stakeholders to receive messages in a timely manner. This will help the public middle level colleges to gain competitive advantage over competitors and improve new product performance. The study also recommends public middle level colleges to map various risks associated with various stages of the procurement cycle and to do supplier market analysis. This would help in anticipating commodity price evolution and predicting potential supply shortages. The study further recommends public middle level colleges to embracing Information and Communication Technology in procurement process, which will help in reducing costs of procurement process. The study finding may inform policy makers on how developing policies geared towards sustainable procurement. The researcher suggests a further study on the role of stakeholders in mitigating risks in procurement process.

Keywords: Supplier Engagement, Risks Mitigation, Sustainable Procurement

I.Introduction

Procurement reform has become an important topic of public debate in the United States over the past couple of decades. Cost rationalization and minimization have surfaced as the most powerful drivers of procurement reorganization. The rationale of cost minimization notwithstanding, investing in innovation is a costly and risky enterprise, which may occasionally run counter to short-term finance criteria. Discouragement of innovation may also be reinforced by tightening financial management which adds administrative burdens possibly prohibiting the most innovative (read small) organizations to participate (Vonortas, Bhatia, & Mayer, 2011).

The biggest external challenge for businesses is supply chain risk. A study by Xchanging (2015) targeting 830 procurement professionals across the UK, Europe and North America reveals that 77 percent of respondents believe supply chain risk is the biggest challenge to their businesses' operations. Similarly, the study also found that procurement professionals are challenged by regulation and audit (71%), lack of supplier innovation (63%), and fluctuations in currency (58%) in their business operations. It is believed that other risks are now appearing on procurement's radar, including how to cope with commodity price volatility. For many of the processing manufacturing industries, the speed with which the commodity prices go up and down is unseen (Martindale, 2013)

United Kingdom has been a 'first mover' in the promotion of policies and initiatives seeking to stimulate innovation through procurement, as well as addressing the modernization of the procurement function more generally. Despite certain policy tensions, issues around implementation and a recent change of direction away from innovation, the UK case has become widely used as an international exemplar (Uyarra, Edler, Gee, Georghiou and Yeow, 2014). Uyarra, et al. (2014) maintains that UK has pioneered the application of a range of mechanisms such as Compulsory Competitive Tendering, private finance initiative (PFI) and other public-private partnership (PPP) models for the delivery of public services. As a result of the extent of private and third-sector involvement in the delivery of a wide range of public services, the UK public sector services industry is generally considered to be one of the largest and most developed in the world (Julius, 2008).

In Afghanistan, the political and programmatic success of public procurement reform has been acknowledged both domestically and internationally. Afghanistan's commitments to the Tokyo Mutual Accountability Framework (TMAF) and renewed commitments at the London Conference on Afghanistan 2014 were greatly concentrated on reforms and as wished-for, this reform has satisfied its aimed onlookers particularly the international community. Afghanistan has also scored well in World Bank's 2016 benchmarking public procurement in both thematic areas of procurement lifecycle and complaint and reporting mechanisms (Zahed, 2017).

Procurement reforms are seen as indispensable for achieving a long term improvement in financial management within Africa. Public procurement reforms among African countries are not significantly different in terms of stages of reform, components of reform strategies, and implementation. In most African countries, public procurement reforms have been preceded by assessments of the existing system, either by consultants or by external donor agencies particularly the World Bank through country procurement reports (Dza, Fisher, & Gapp, 2013). However, In the face of mounting economic uncertainty, huge expectations are placed on procurement practitioners to source the best business solutions from their supply network partners, and to achieve the innovation, value and services that their customers are looking for (Lau, 2010). Dza, et al. (2013) further assert that an assessment of Ghana's procurement system in 2007 by the OECD/DAC although confirming substantial progress in public procurement since 2003, also alluded to the fact that some provisions in the Public Procurement Act have proven to be ineffectual and require adjustments or modifications. These include incorrect interpretation and application of some provisions of the procurement law, slow pace in regularizing draft regulations, lack of clear procedures for emergency procurement.

Recently, a Decade of Public Procurement Reform in Nigeria (2001-2011) was celebrated in Nigeria by Public Procurement National and International Stakeholders and anchored by the Bureau of Public Procurement. However, to the Public Procurement Stakeholders, the greatest concern when appraising the Nigerian Public Procurement Practice within this decade is the challenges confronting the practice. From all ramifications, it is crystal clear that the challenges are enormous and daunting. It is obvious that some Stakeholders, especially, Consultants, Contractors and Service Providers, Politicians and indigenes where some projects are sited have refused to accept the change in the new public procurement reform and paradigm (Onyema, 2011).

In South Africa (SA), public higher education institutions are regarded as autonomous institutions. These institutions have to comply with the principles of co-operative governance (Cloete & Bunting, 2000). Through the public procurement process, public higher education institutions in SA play a crucial role in the social and economic developmental needs of the country. Mkhize (2004) affirmed that South African public entities face numerous procurement challenges, such as procurement irregularities, wasteful expenditure of resources and money, which applies to SA comprehensive public middle level colleges as part of public entities. Additionally, financial crises brought about by the infringement of policies have been observed as a challenge that has surfaced in the South African public middle level colleges procurement system thus leading to five of the 23 public middle level colleges being placed under administration (Lavrakas, 2012). In Zimbabwe, it is estimated that 60% of government expenditure is allocated to public procurement, which is significant for a country that is facing liquidity challenges coupled with a lack of balance of payments support (Mushanyuri, 2014). Subsequently, the public procurement system in Zimbabwe has been under scrutiny, with many blaming failures to implement government projects and initiatives on the public procurement process (Gayed, 2013).

In Kenya, public procurement has surely evolved from the annals where the public expenditure was rarely regulated to independent procurement structures and regulating bodies. (Migai, 2010) gives credit to public procurement reforms and regulations in Kenya to competitiveness and transparency in acquisition of government services and goods, wider stakeholders consultations, improved processes and procedures, improved accountability, elimination of collusion and corruption among supply agents and eradication of non-value added purchasing methods. To manage effectively and more efficiently the procurement process, procuring entities through the existing legal framework are required to firstly consolidate departmental procurement plans to provide the entity's corporate procurement plan which before its implementation must get the accounting officer's approval (Kingori & Karanja (2014).

The procurement of services and goods within public middle level colleges in Kenya sometimes faces diverse sustainability challenges. For example, in 2016 Kenya Institute of Management (KIM) was facing financial challenges occasioned by dwindling student population. This led to its inability to pay its suppliers, rent and staff salaries. Additionally, it had challenges making staff remittances of Ksh 30 million to the staff sacco on time. At the time the college was unable to pay its rents in Nairobi, Mombasa, Thika and Narok in a timely manner. Staff members had also started moving from the institution (Wachira, 2018). At the Kenya Utalii College, the auditor general in the 2013 audit report indicated that the college was technically insolvent due to an exceedingly high liabilities compared to

assests. In 2018, the nursing council of Kenya closed three public middle level colleges found to be offering unregistered courses across the country. These are documented cases of challenges with procurement aspects within public middle level colleges that have potential to hurt the welfare of the community and its stakeholders and are therefore unsustainable. The Public Procurement and Asset Disposal Act (PPOA) of 2015 and the Procurement Regulations of 2006, has introduced new standards for public procurement in Kenya. This study therefore seek to investigate determinants of sustainable procurement among Public middle level colleges in Nakuru County, Kenya.

II. Research Objectives

- (i) To determine influence of Supplier engagement on sustainable procurement among public middle level colleges in Nakuru County
- (ii) To establish the influence of risks mitigation practices on sustainable procurement among public middle level colleges in Nakuru County
- (iii) To analyze influence of information and Communication Technology utilization on sustainable procurement among public middle level colleges in Nakuru County

III. Research Hypothesis

- (i) **H₀₁:** Supplier engagement has no significant influence on sustainable procurement among public middle level colleges in Nakuru County
- (ii) **H₀₂:** Risks management practices has no significant influence on sustainable procurement among public middle level colleges in Nakuru County
- (iii) **H₀₃:** Information Communication Technology utilization has no significant influence on sustainable procurement among public middle level colleges in Nakuru County

IV. Literature Review

Supplier Engagement

Organizations thrive when they engage effectively with their stakeholders. But with the advent of online tools that make it simpler to engage and consult with stakeholders, it's now essential to put digital at the heart of your supplier engagement strategy. There are 4 key steps in creating an effective engagement strategy. This include identifying both internal and external stakeholder, defining your purpose, map available tools to identified stakeholders and choose the most appropriate methods and technologies (Glover , 2014). According to Pegg (2015) supplier engagement is critical at all levels. It is used primarily to gain knowledge, understanding and ideas from key individuals within the organization. Engaging with the right internal stakeholders can ensure procurement functions gain understanding of strategic issues, cost-saving goals, value-add, compliance and organizational input moving forward. Procurement teams also have to be able to listen to the stakeholders whom they are engaging with, and then be ready to sell back ideas as a result of those conversations.

It is important to focus on Customer relations management as a way of supplier engagement. Customers or clients are clearly stakeholders with a significant interest in the organization, so focusing effort on providing them with the best possible level of service, delivered quickly and efficiently is a win-win outcome. Happy customers are more likely to recommend an organization to their friends and colleagues as well as becoming regular clients of the organization (Stakeholder management, 2015). According to Kumar (2013) Customer relationship management (CRM) is a model for managing a company's interactions with current and future customers. It involves using technology to organize, automate, and

synchronize sales, marketing, customer service, and technical support. CRM enables organizations to gain 'competitive advantage' over competitors that supply similar products or services. Customer relationship management focuses on strategically significant markets. Not all customers are equally important. Therefore, relationships should be built with customers that are likely to provide value for services.

According to Nazari-Shirkouhi, Keramati and Kamran (2015) CRM involves all activities that organizations establish long-term, continuous, profitable and mutually beneficial relationships with customers. Reinartz, Krafft, & Hoyer (2004) consider CRM as a process for customer interaction management to build, develop, and maintenance long-term and beneficial relationships with customers. In summary, CRM has capabilities which allow customer-related information to be systematically used in NPD process in ways that could improve new product performance. Additionally communication is vital component in engagement process. Procurement needs to communicate to all those involved in the initiative that while reducing costs is important, improving processes and supplier relationships is another key goal of any procurement initiative. Speaking with stakeholders during the data collection process to understand what is most important to them as end users and knowing their wants and needs out of the initiative emphasize these goals. Without the engagement of stakeholders throughout the entire procurement process, the chances of a successful initiative lessen. Procurement must work to communicate their goals and objectives to all those involved in the process from the beginning and establish open communication (Megan , 2015)

O'Handley (2017) affirms that lines of communication should be open for both internal customers and stakeholders to get in touch with questions and any other issues that may come up. Consistently communicating with stakeholders will create a stronger relationship and keep your department at the top of mind. Create an Omni-channel communication strategy so stakeholders can receive team's messages in their preferred way. The more personalized your communication is, the better experience your stakeholders will have. According to Bangor College (2016) the College's procurement team promotes professionalism to support College staff in engaging with suppliers and ensuring that the procurement processes and procedures are appropriate and effective in order to encourage innovation, promote sustainability. They proposed a supplier engagement model aimed to provide the following: up-to-date procedural and contract information on the Procurement intranet pages; a Contract Management Process for all key contracted suppliers; an updated external website that outlines to suppliers how to do business with the College; Quarterly meetings with key contacts in the College Stakeholder Groups; A feedback process with suppliers and internal evaluators at the end of each procurement process to support continuous improvement; A performance feedback process available to internal customers; Distribution of the Annual Procurement Report. Procurement has moved on from its traditional role, focusing purely on cost saving. Today, the department is continuously being challenged and set new key performance indicators (KPIs), such as ensuring the organization works with greener suppliers who meet sustainability requirement (Rivero, 2018).

A study by Njoroge and Ngugi (2016) on challenges facing implementation of public procurement regulations in Kenya. The study concluded that implementation of public procurement policies in public institutions today is tailored around enough funding and effective use of the available financial resources. The study also recommends that

implementation of public procurement regulations in public institutions in Kenya to be successful, human resources function of public institutions and the PPOA must ensure there are capacity development initiatives across government (central and local).

Risk Mitigation Practices

Risk can be defined as measureable uncertainty of outcome, whether positive opportunity or negative impact, whereby the measureable uncertainty is expressed in terms of likelihood (Ari, 2009). Procurement Network's Working Group (2012) assert that risk management seeks to mitigate the impact of the risk by reducing the likelihood of its occurrence and/or reducing avoidable consequences through planning, monitoring and other appropriate actions. Whether in general or in the specific case, procurement officers should identify and analyze all risk factors that are likely to occur on a project, and then decide on the most appropriate management response for each risk/combination of risks.

According to the Supply Chain Resilience report (2016), 66% of managers do not have adequate visibility of their supply chain, yet 70% of them faced disruptions in that past year 41% of them occurring in Tier 1 suppliers, and 34% of them experiencing incidents with cumulative losses of at least \$1 million, resulting in reduced profit margins, decreased revenue, brand and reputation damage, delayed deliveries and, ultimately, customer losses. Pearson (2010) affirms that supplier market analysis involves a thorough assessment of supply market industry dynamics, (supply, demand, industry structure, industry profitability, supplier capacity utilization, etc.) in order to anticipate commodity price evolution and potential supply shortages.

Tague's (2004) maintain that failure modes and effects analysis (FMEA) is a step-by-step approach for identifying all possible failures in a design, a manufacturing or assembly process, or a product or service. Failures are prioritized according to how serious their consequences are, how frequently they occur and how easily they can be detected. The purpose of the FMEA is to take actions to eliminate or reduce failures, starting with the highest-priority ones. Procurement risk-management leaders tend to be supplier relationship masters. Not only do they form deep, symbiotic connections with vendors, they work together to rapidly detect risk (e.g., through early warning systems) and neutralize risk-related issues before those issues become incidents. High performers also adapt their supply relationships to specific geographies and cultures (Pearson, 2010).

Globalization of the economy and the associated complexity and vulnerability of modern supply networks can have disastrous results for a company in the event of a crisis. It is essential to systematically include all relevant internal/external partners and modern IT tools so as to detect supply chain risks sufficiently early and to manage these effectively and efficiently (Eckseler , 2014). Precoro (2017) maintain that risk management helps companies ensure the smooth and successful running of purchasing and supply operations. It also contributes to the resilience of a supply chain as a whole and to business continuity. Successful prevention and mitigation of supply chain risks can help ensure good financial performance and shareholder wealth.

According to European Union (2010), efficient risk management entails that risk should lie with the party able to best manage it. In procurement what is relevant is not only the capacity to identify and bear the risks but also the relative attitudes to risk on the part of the

government and the contractor. EU (2010) further argues that the nature of the risks and how best to deal with them would depend on the relative complexity of the project, the relative importance of quality aspects vis-a-vis costs for the procurer, the innovation intensity.

The first step involved in risk assessment is to map the various risks associated with various stages of the procurement cycle and to identify indicators ("red flags") for the detection of suspected irregularities. For instance, here is an outline addressing the major phases or components of the procurement process, along with some of the inquiries that a procurement agency should make to determine whether there are unacceptable risks inherent at each stage (Barden, 2010). Olsha (2010) asserts that there is a need for a structured risk management capability within the procurement organization since procurement has become a major focal point for companies' risk management concerns. Russill (2008) point out that ignoring procurement risk management can have serious economic effects and the organization may underperform or may not survive, as a consequence. Therefore, Effective procurement risk management practice requires an understanding of the relationship between procurement and organizational objectives (CIPS, 2013). According to Dutch Public Procurement Expertise Centre (2010) risk management is essential for all steps in the procurement process. To successfully carry out risk management the following actions must be taken: identify risks beforehand and include them in a roadmap; allocate risks, mitigate threats beforehand as much as possible and take advantage of the opportunities; monitor risks by using the roadmap and take action in case of threats and opportunities.

Information Communication Technology Utilization

According to Tanner, Wölflé and Quade (2006) the procurement organization can significantly influence the success of a company. In order to operate efficiently and effectively it has to create appropriate structures and make use of suitable instruments. Information technology can play an important role in this. The most important general procurement goal set by the companies examined is the reduction of the purchasing price and the total cost of procurement.

Muthuri (2014) carried a study on the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya. The study concludes that ICT tools offer a good strategy within an organization to achieve strategic goals of customer satisfaction and profitability through cost management. Supplier appraisal, supplier network and integrating brand and procurement management processes affect procurement performance in the star rated hotels in Nairobi as well as supplier selection and development plan, involvement in the early stages of brand building, information flow (documentation, reporting and communication), supplier performance tracking and assessment and developing the suppliers. Nderitu and Ngugi (2014) carried out a research to establish the contribution of green procurement concepts to performance of the East African Breweries Limited (EABL). The study recommends that organizations should have competent professional workforce, extensive investment in Information and Communication Technology (ICT) infrastructure, systems of supplier management and strategic investment approach to Green Procurement in order to realize the positive effects of green procurement.

Today, environmental demands in all human activities are increasing. The overall aim of the following considerations is to make suggestions on how to consider environmental issues in the procurement process of ICT organizations, within a lifecycle perspective. Torres (2012)

maintains that in an ICT organization's procurement process, the inclusion of standardized energy, environment and carbon decision-making criteria is highly encouraged. Through its procurement system, an ICT organization can potentially reduce the environmental impact of goods, networks and services used in society. Several variables related to procurement transactions can be addressed within the operation of all the life cycle stages of a product ICT software that supports green procurement should be able to ensure processes are conducive to the environment and its inputs and outputs are not harmful to the environment such as use of e-procurement. This reduces use of paper hence less destruction of the forests for papers. The hardware component should have the capacity to support the software and emerging technologies and when it has exhausted its life cycle, it should be recyclable to something usable (Nderitu & Ngugi, 2014)

To better address sourcing strategies and to align them to a typical lifecycle, an ICT company can engage effectively with suppliers by using common practices and standards at each Life Cycle Assessment (LCA) stage. To endorse an extended environmental impact assessment throughout the productive practices of the ICT sector and the trade of environmentally-friendly products and services, ICT organizations may develop their procurement practices (Torres, 2012). According to Oihab (2010), ICT plays an increasingly important role in relationship between business and the ecosystem, or the human, social, geographic, urban and rural environment. Information System departments can innovate and offer proposals that are decisive for the conservation of natural spaces while limiting consumption of energy or other resources and helping in the battle against global warming. More specifically, just measuring the "sustainability" of an economic activity requires very reliable and high performance IT tools.

The College of Edinburgh has an extensive track record of embedding sustainability into procurement. It is one of the leading organizations in implementing the United Nations' Marrakech tool for prioritizing sustainability procurement risks and opportunities, a comprehensive tool for embedding sustainable procurement consideration across all of the College's spend areas. The Marrakech process forms the basis for the current updated Scottish sustainable procurement tool, the Sustainable Procurement Prioritization Tool (Social Responsibility and Sustainability Team, 2016).

Ozturk, Umit and Medeni (2011) report that sustainability of communication technologies is one of the main aims in successful procurement. Additionally, sustainability is associated with aspect of economic, environmental, and social impact of organizations (service suppliers, administration, academia, enterprises etc.). In another study Kinuthia and Abdalla (2014) carried out a research on mapping the effects of ICT adoption in procurement processes using Total Kenya limited case. From the study, it was revealed that the impact of ICT adoption on procurement processes mainly refers to time reductions and quality improvements, rather than cost reductions as reported by many authors. The old view that ICT applications are associated with cost reductions is contested in this research.

Nasiche and Ngugi (2014) the study found out that organization's green capacity, incentives and pressures are the main determinants of green Public Procurement adoption at KPC. The other factors studied; cost of green products and green supply capacity were not found to be significant. These results are an indication that the success of green public procurement relies heavily on enhancing the internal capacity of the organization.

V. Research Methodology

The study adopted survey research design. The study targeted all departmental heads and senior Managers within public middle level colleges in Nakuru County and whereby a target of 69 respondents were used for the study using census approach. A closed ended questionnaire was used to collect data and whereby the instruments were pilot-tested to ascertain its validity. Cronbach alpha (α) was used to measure the reliability of the instrument. Variables that returned alpha value of at least equal to 0.7 was considered reliable. After data collection, analysis was done using frequencies, means and standard deviations for descriptive statistics. Multiple regression was used for inferential statistics in order to establish the relationship between supplier engagement, risk mitigation and ICT and sustainable procurement.

VI. Research Findings and Discussions

This study did a multiple regression analysis in order to establish how Supplier engagement, risks mitigation practices, information and communication technology utilization predicts sustainable procurement among public middle public middle level colleges in Nakuru County. Table 1 shows the multiple linear regression model summary and overall fit statistics.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.890 ^a	0.792	0.780	0.24393

a. Predictors: (Constant), Supplier engagement, Risk mitigation, ICT

Table 1 shows the column for R, R Square, Adjusted R Square and standard error of the estimate. R is the correlation between the predicted values and the observed values of dependent variable which indicates the quality of the model. R Square is the square of the correlation between the predicted values and the observed values of dependent variable and indicates the percentage of variation explained by the independent (predictor) variables. It shows the goodness-of-fit of the regression model. This value tends to increase as additional predictors are included in the model. The expected improvement of model by chance is indicated by Adjusted R. It decreases when a new predictor improves the model by less than expected by chance and increases only if the new predictor variable improves the model more than would be expected by chance. The standard error of the estimate gives the error term of the model (Kombo, 2009).

The findings in Table 1 gives R value of 0.890 and explained by R Square value of 0.792, which shows that 79.2% of the variation in sustainable procurement is due to variation in supplier engagement, risk mitigation, ICT adoption collectively. The standard error of the estimate of 0.24393 shows that the probability of error in the model. The study further used F-test to test the significance of the regression model as shown in Table 2.

Table 2: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.210	3	4.070	68.406	0.000 ^b
Residual	3.213	54	0.059		
Total	15.423	57			

a. Dependent Variable: Sustainable Procurement

b. Predictors: (Constant), Supplier engagement, Risk mitigation, ICT

Sen and Srivastava (2011) say that the appropriateness of the multiple regression model as a whole can be tested using F test. The F-test of overall significance indicates whether linear regression model provides a better fit to the data than a model that contains no independent variables. $F(3, 54) = 68.406$, $p < 0.05$ shows that the model as a whole has statistically significant predictive capability. Therefore, the regression model provides a better fit to the data and proves that the model is significant. Table 3 shows the beta coefficients of the variables used in the study and t-statistics.

The following regression model was used to show the relationship between the independent variables and the dependent variable of the study.

$$Y = 0.252 + 0.600 X_1 + 0.127 X_2 + 0.239 X_3 + 0.24393$$

Where;

Y= Sustainable procurement

X1 = Supplier engagement

X2 = Risk mitigation

X3 = ICT adoption

Table 1: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.252	.281		0.897	0.374
Supplier engagement	.600	.107	.597	5.602	0.000
Risk management	.127	.172	.117	2.285	0.026
ICT	.239	.177	.223	2.862	0.006

a. Dependent Variable: Sustainable Procurement

The first symbol in Table 3 is the unstandardized beta (B). This value represents the slope of the line between the predictor variable and the dependent variable. The beta coefficients show the influence of each independent variable on the dependent variable. The greater the value of the unstandardized beta, the higher the influence of the corresponding independent variable on predicted variable (Gall, 2007). The unstandardized beta for this regression model ranges from 0.127 to 0.600. This implies that for every one unit increase in Supplier engagement, sustainable procurement increases by 0.600 units. Similarly, for every one unit increase in risk mitigation, the sustainable procurement increase by .127 units. It also means that for every one unit increase in ICT adoption, the sustainable procurement increase by 0.239 units.

The fourth symbol is the t-test statistic (t) which was used to test the research hypothesis. The p-value tells whether or not an individual variable significantly predicts the dependent variable. If the p value is below .05, the corresponding variable is considered significant. The following hypotheses were tested;

H₀₁: Supplier engagement has no significant influence on sustainable procurement among public middle level colleges in Nakuru County. This study rejected the first null hypothesis since the t-value (5.602) was significant with a p-value <0.05. Therefore, supplier

engagement significantly influences sustainable procurement among public middle level colleges in Nakuru County.

H₀₂: Risks management practices have no significant influence on sustainable procurement among public middle level colleges in Nakuru County. The second hypothesis was rejected at 0.05 significance level ($p < 0.05$) with a t-value of 2.285. This means that Risks management practices significantly influence sustainable procurement among public middle level colleges in Nakuru County.

H₀₃: Information and Communication Technology utilization has no significant influence on sustainable procurement among public middle level colleges in Nakuru County. Similarly, the third null hypothesis was rejected since its t-value (2.862) was significant at 0.05 significance level ($p < 0.05$). The alternative hypothesis was accepted and therefore Information and Communication significantly influence on sustainable procurement among public middle level colleges in Nakuru County

VII. Conclusion of the Study

The study found that there was significant relationship between supplier engagement and sustainable procurement aspects. Amongst the key aspects of supplier engagement that were found included communication strategy in their organization allows their stakeholders to receive messages in a timely manner and periodic meetings with key contacts in the college stakeholder groups is well established. The risks mitigation aspects were found to have significant relationship between risks mitigation practices and sustainable procurement aspects. Amongst the notable aspects of risks mitigation practices include supplier market analysis is continually carried out in order to predate potential supply shortages and all relevant internal/external partners being involved to discover supply chain risks appropriately. The ICT was found to have significant relationship with sustainable procurement aspects. Amongst the notable aspects of ICT include presence of up to date procedural and contract information using ICT facilities as well as a feedback process with suppliers and internal evaluators at the end of each procurement process is available in the website.

VIII. Recommendations of the Study

This study recommends public middle level colleges to effectively manage their customer relations and to embrace communication strategy that allows their stakeholders receive messages in a timely manner. This will help the public middle level colleges to gain competitive advantage over competitors and improve new product performance. In the context of risks mitigation practices, this study recommends public middle level colleges to map various risks associated with various stages of the procurement cycle and to do supplier market analysis. This would help in anticipating commodity price evolution and predicting potential supply shortages. This study also recommends public middle level colleges as a way embracing Information and Communication Technology to give feedback to suppliers and internal evaluators at the end of each procurement process using the college website. It is also recommended by this study that public middle level colleges should use ICT facilities in supplier appraisal, which will help in reducing costs of procurement process.

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