

# Influence of Human Resource Capacity on the Implementation of Sustainable Public Procurement in Nyandarua County, Kenya

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**ABSTRACT:** Sustainable procurement is the pursuit of sustainable development objectives through the purchasing and supply process, and involves balancing environmental, social and economic objectives. Research shows that sustainable procurement offers great advantages; it can promote production efficiency for suppliers, help employees to improve labor relations and save costs. However, despite government encouragement and support, the implementation of sustainable procurement in counties in Kenya has not achieved the expected results. The purpose of this study therefore was to analyze the influence of human resource capacity on the implementation of sustainable public procurement in Nyandarua County, Kenya. The study was anchored on the Resource Dependence Theory. The study employed a survey design since it permits gathering of data from the respondents in natural settings. The target population for this study comprised 50 procurement staff in the 10 county ministries in Nyandarua County, Kenya. Since the target population of 50 procurement staff was fairly small, the study undertook a census study. The study purposively targeted procurement staff in each of the county ministries. The study used a self-administered questionnaire with closed-ended questions. Primary data was sourced from the responses the participants provided during the survey. The questionnaire was piloted in Nakuru County, Kenya to evaluate its validity and reliability of the instrument. The data collected from the questionnaires was analyzed using both descriptive (means and standard deviations) and inferential statistics (correlation and regression) with the aid of the Statistical Package for Social Sciences (SPSS). The results of the survey were presented in tables. The study established that there was a moderate and positive correlation between human resource capacity [ $r = 0.434^{**}$ ,  $p = .004$ ] and implementation of sustainable public procurement. The fitted model R square of 0.189 implied that human resource capacity explained 18.9% of implementation of sustainable public procurement. The study therefore recommends that counties should develop HR capacity in order to enhance implementation of sustainable public procurement.

**Key Words:** Human Resource Capacity, Sustainable Public Procurement

## I. INTRODUCTION

Today procurement is being seen by many successful organizations as an activity of strategic importance. In fact, according to [1], the reputation of a firm is closely linked to the social, environmental and ethical profile of an organization's spending and therefore the purchasing departments must add responsible suppliers to their list of operating objectives. The integration of sustainability initiatives into a firm's purchasing strategy needs partnership and joint value creation methodologies with selected actors in the supply chain. Procurement managers are therefore more relevantly positioned as they can impact the environmental and social performance, through for example product or service specification, evaluation and supplier selection, and evaluating performance of the provider either by developing the performance evaluation criteria or using that criteria to evaluate the providers' fulfillment of the contract for which the provider was contracted. Sustainable procurement is the pursuit of sustainable development objectives through the purchasing and supply process, and involves balancing environmental, social and economic objectives.

Sustainable procurement gives due considerations to the impact of procurement on the environment, on the community and on the social condition of those delivering and receiving the product or service. Research shows that sustainable procurement offers great advantages [2]. It can promote production efficiency for suppliers, help employees to improve labor relations and save costs for organizations. However, despite government encouragement and support, the current implementation of sustainable procurement in organizations has not achieved the expected results [3], mainly because implementing sustainable procurement requires an awareness process which, in the short term, will increase costs. Furthermore, procurement practitioners face difficult decisions when they have to assess trade-offs between conflicting procurement goals and policies, for instance between costs, quality, timeliness, risk, economic goals, social goals, competition and environment protection.

Sustainable public procurement has been investigated in different contexts globally. For example, in the USA, [4] noted that procurement professionals have an important role in linking the external knowledge to internal needs. They noted that procurement professionals are able to influence sustainability initiatives but they have to be very subtle in doing so. Furthermore, their knowledge of sustainability and organizational awareness are important instruments in the support of sustainability initiatives [5]. Their study opined that procurement professionals in progressive organizations had the right knowledge and tools to facilitate this process, in contrast to the procurement professionals in lagging organizations. They conclude that the challenge for all procurement professionals in sustainable public procurement was to be aware of all perspectives within the organization, including the different interests and goals of actors. In Netherlands, public organizations are increasingly adding environmental and social aspects in their strategic agendas [6]. They noted that although top management assigned strategic importance to sustainability initiatives, budget owners had the final say in implementation. Procurement professionals had very little influence on the implementation process of sustainability. Further, they point out that managers in public agencies are faced with procedural, legal and political constraints. In addition, many internal and external stakeholders have conflicting goals which can impact on the success of sustainability initiatives. In China, [7] noted that sustainable supply chain management offers great advantages. They noted that it can promote production efficiency for suppliers, help employees to improve labor relations and save costs for organizations. However, their study notes that despite government encouragement and support, the current implementation of sustainable supply chain management in organizations has not achieved the expected results, mainly because implementing sustainable supply chain management requires an awareness process which, in the short term, will increase costs. Moreover, an important hindrance is that the impact of sustainable supply chain management is more and more complicated. They concluded that knowledge about sustainable public procurement is important as it adds theoretical value in accelerating Chinese organizations to implement sustainable supply chain management and the formulation of national environmental protection industry policy.

In South Africa, [8] noted that though sustainable public procurement activities are common in many developed countries, the awareness and implementation of sustainable public procurement is still comparatively low in most developing countries including South Africa. Further, the study noted that while there are a number of environmental initiatives that would support or be supported by sustainable public procurement, officials have not recognized these as such. While there are various stakeholders involved in activities that could support sustainable public procurement activities, none of these is specifically set up to serve this purpose. Finally, while the social element of sustainable public procurement appears to be well provided for through national preferential procurement legislation, sustainable public procurement does not appear to be a current priority of most government bodies in South Africa. They concluded that sustainable public procurement will form a key contribution to achieving the sustainable development goals of the government of South Africa. In Uganda, [9] in their study on trouncing barriers to sustainable procurement practices in public sector organizations, public sector procurement is at the centre of the way public money is spent and hence plays a pivotal role in a country's public financial management system. Its importance is derived from its role as the vehicle by which typically over 55% of the budget implementation is managed in the country. Budgets get translated into goods and services in large part through the workings of the public-sector procurement system. However, the existing public-sector procurement system does not visibly recognize and promote sustainable procurement. There has been minimal emphasis on social and environmental impact of public sector procurement hampering attainment of Government's environmental and social goals. Though, the public procurement system encourages the use of public sector procurement to promote the social, environmental and economic objectives and fulfilling the targets of sustainable development goals, there is little or no evidence to show on the implementation of sustainable public procurement.

Locally, studies have attempted to investigate various aspects on sustainable procurement. For example, [10] evaluated how organizational structure, organizational resource capacity, legal and regulatory framework, cost of sustained products affected effective implementation of sustainable procurement practices in government Parastatals in Kenya. They concluded that these factors significantly influenced the implementation of sustainable procurement in Kenya. They are also reported that factors such as high prices of green products, unavailability of green products in the local market, resistance from suppliers, and lack of environmental specifications on products offered; to a large extent affect effective implementation of sustainable practices. Similarly, [11] investigated the current difficulties facing sustainable procurement in multinational organizations in Kenya and concluded that financial resources available, purchasing of the recyclable and cost of purchasing non-ozone depleting substances hinders the uptake of sustainable procurement. Furthermore, [12] examined the role sustainable procurement play on corporate governance in the Kenyan public transport sector organizations at the Kenya Ports Authority in Mombasa County and found that revealed that sustainable procurement significantly predicted corporate governance in Kenyan public sector organizations. The study recommends that the legislature should come up with laws to administrate sustainable procurement and they need to be enforced to improve compliance. Similarly, [13] opined that sustainable procurement is about taking social and environmental factors into consideration alongside financial factors in making procurement decisions. Their study concluded that it involves looking beyond the traditional economic parameters such as price and profit and making decisions based on the whole life cost, the associated risks, measures of success and implications to the society and the environment.

## **II. STATEMENT OF THE PROBLEM**

Organizations today are taking into consideration of an assortment of sustainability initiatives with the aim of achieving competitive advantage, or as a minimum maintaining a competitive parity. Globally, governments spend between 12% to 30% of their GDP buying goods, services and infrastructure, goods and services typically account for 10-15% of GDP for developed countries and as much as 25-30% for developing countries [12]. This clearly indicates the power of the public revenue as an enabler in ensuring markets transition towards a sustainable procurement. One of the major challenges facing the implementation of sustainable procurement is the cost of sustainable products including the purchase and installation costs, training costs and maintenance costs. Their study noted that that the implementation of sustainable procurement is directly proportional to increase in investment, staff training costs and communication costs with suppliers which ties up capital. Furthermore, the current regulations stipulate that suppliers are required to provide proof of their commitment to environmental protection which may take the form of statements on the steps they are taking to reduce their impact on environment, or alternatively to demonstrate that they are not in breach of any statutory requirements relating to the environment. In addition, suppliers should consider the environmental impact of their products through the whole life cycle. However, the Public Procurement and Asset Disposal Act (PPADA) of 2015 is silent about the implementation of sustainable procurement, which implies there is no public mandate that requires public entities to adopt sustainable procurement. Any such implementation is therefore voluntary and driven by other factors other than regulation. Studies such as those of [13] and [14] have all established that the human resource component plays a key role in the implementation of sustainable procurement. Therefore, it can be suggested that the capacity of the available human capital and its impact on the implementation of sustainable procurement in ensuring compliance, continuous learning and innovation is important. Therefore, a clear understating of whether procurement practitioners in the public sector have the requisite capacity and have embraced sustainable public procurement practices would be important. Furthermore, the few studies carried out locally have found conflicting findings on implementation of sustainable public procurement. Furthermore, a recent report by the Public Procurement Regulatory Authority (PPRA) of 2019 indicted most counties for flouting procurement laws in terms hiring unqualified staff, flouting tender regulations among others. This study sought to fill this knowledge gap.

## **III. OBJECTIVES OF THE STUDY**

The general objective of the study was to establish the influence of human resource capacity on implementation of sustainable public procurement in Nyandarua County, Kenya.

## **IV. LITERATURE REVIEW**

According to [15], another barrier to procuring innovative solutions resides at the level of the individual where there may be a discrepancy between the capabilities held by procurers and the skills required for procuring innovative solutions. Whereas relatively little in-house competence is needed when procuring off the-shelf goods for the lowest possible price, greater competence is required to encourage suppliers to innovate. Changes in the procurement function

towards a more strategic orientation, and a more demanding environment has led scholars to critically examine the skill and competency requirements of procurement professionals. Therefore, the capacity of the firms' human resources plays a critical role in the implementation of sustainable public procurement. Similarly, [16] also found that purchasers with high skill levels and knowledge have a significant impact on financial performance and operational efficiency in terms of quality improvement, design and reduction of lead times. They noted that many parts of the public sector lacked professional procurement expertise. In particular, there was a lack of understanding about sustainability and its relationship to procurement; they commented that this was partly due to the fact that environmental specialists rather than procurement experts deliver sustainable procurement training. Lack of information, training and accountability are barriers to integrating sustainable procurement. They conclude that without sustainability training, the motivation of procurers reduces and delivery of sustainable outcomes suffers. Furthermore, [17] opined that in terms of management skills, actors in the supply chain in developing countries need to further strengthen their position. Inadequate education systems means there is a shortage of managers who can both manage the procurement processes and understand the technical aspects of its sustainability. In order to improve technical and managerial capacity for increased sustainable procurement, [17] call for focused investments in talent. They are of the view that firms must invest in helping employees acquire and build the knowledge, skills and attitudes required to carry out sustainability-related initiatives and generate additional fresh ideas. They must tap into employees' desire to make a positive difference in their organizations and communities.

Another study by [18] summarized lack of policy guidelines, political willingness, awareness of procurement professionals, and contemporary knowledge of contractors and professional commitment about sustainable development as the barriers of practicing sustainable procurement in Bangladesh. Another study by [19] found that lack of knowledge by procurement employees and lack of management support was a limiting factor in the adoption of sustainable procurement. They further noted that unavailability of sustainable products, lack of knowledge about the concept and the perception that sustainable products are expensive also contributed to the challenges affecting the adoption of sustainable procurement. According to [20] in their empirical study of sustainable supply management, 25% of the respondents cited that some tasks need a greater level of skilled and knowledgeable employees, and all 75 procurement practitioners who responded stated that lack of employees training inhibited empowerment of employees. There was a strong tendency for some of these members to be on their guard against their colleagues. Also, over 80% of the respondents revealed that the coordination between user departments within their organizations was carried out through formal letters in which they complained it takes time and power to achieve small tasks. Similarly, [21] found that procurement professionals occasionally face many challenges in the implementation of sustainable procurement practices which include lack of budget for internal or external support, lack of performance metrics to measure and monitor progress, in the local market, lack of support from the top management, resistance from suppliers, lack of internal expertise on sustainability topics, he also noted that minimal progress has been realized in the managing and minimizing these implementation challenges in public organizations. They also noted that many procurement managers in Kenya lack competitive knowledge and skills on how to formulate and embrace effective procurement policies in many public institutions in Kenya.

Locally, [10] investigated the factors affecting effective implementation of sustainable procurement practices in government parastatals in Kenya; case of National Gender and Equality Commission. Specifically the study aimed at evaluating how organizational structure, organizational resource capacity, legal and regulatory framework, cost of sustained products affects effective implementation of sustainable procurement practices in government parastatals in Kenya. Descriptive data research method was used with a target population comprising of 81 employees and a sample of 44. The study revealed that the organizational structure, organizational resource capacity, legal and regulatory framework and cost of sustained products affected effective implementation of sustainable procurement practices. The study recommends that the government needs to enact environmental legislations and policies that promote sustainable procurement and those that already have such policies need to be reviewed and revised to integrate sustainable procurement issues and other sustainability issues. Furthermore, [22] investigated the effects of reverse logistics on procurement performance among state corporations in Kenya. Public procurement is subjected to dynamic changes and trends of the market and interests because of growing government expenditure and funding from development partners. Cost effective management of the procurement process can significantly influence the growth and development of the Kenyan economy. The study specifically investigated the effect of third party logistics, the effect of information management, the effect of lean agile manufacturing and the effect on waste management in procurement performance in Kenya. A sample of 150 respondents was used through stratified random sampling techniques. Multiple regression analysis was used to determine the relationship between the variables and the procurement performance of



state corporations in Kenya. The coefficient of determination resulting from the linear regression was used to determine the goodness fit of the model and it indicated a significant relationship between third party logistics, lean agile manufacturing and procurement performance.

According to [6], sustainable public procurement is receiving an increasing amount of attention as a consequence of a rise in environmental, social, and economic challenges. Public procurement represents approximately 15 % of GDP in developed countries and up to 25-30 % of GDP in developing countries and governments progressively use this purchasing power to drive markets towards sustainability. Sustainable procurement builds on the principles and good practices of “traditional” procurement and considers additional factors to maximize social, environmental and economic benefits for the procuring organization, its supply chain and society as a whole. Sustainable procurement is the process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy whilst minimizing damage to the environment. Sustainable public procurement integrates economic factors; which include the cost of products and services over their entire life time as well as cost for society as a whole to ensure real value for money over the longer term; environmental factors to reduce the environmental impact of goods, works, and services (impacts on health and well being, air quality, generation and disposal of hazardous material) and to minimize the use of resources (reduce, recycle, reuse) throughout the supply chain and social factors; which include recognizing equality and diversity; observing core labor standards; ensuring fair working conditions; increasing employment and skills; and developing local communities [23]. More indirectly, by promoting sustainable public procurement, it demonstrates responsible governance and improves their public image and legitimacy. Most studies have been conducted on leading public sector organizations and successful implementations of sustainability, limiting the generalizability of the findings. More research could usefully be conducted on the public sector organizations that lag behind in developing sustainability initiatives such as county government in Kenya. Furthermore, managers in public agencies are faced with procedural, legal and political constraints. In addition, many internal and external stakeholders have an impact on the success of sustainability initiatives. These stakeholders can have conflicting goals. A study into sustainability in the public sector should therefore include an investigation of factors and actors.

## **V. RESEARCH METHODOLOGY**

This study employed a survey design since it permits gathering of data from the respondents in natural settings [24]. Survey designs result in a description of the data, whether in words, pictures, charts, or tables, and whether the data analysis shows statistical relationships or is merely descriptive. The design was used to describe the what, who, when, how and whereof the phenomenon. The target population for this study comprised 50 procurement staff in the 10 ministries in Nyandarua County, Kenya. The study targeted procurement staff since they are individually and collectively involved in the procurement processes in their respective ministries. Furthermore, sustainable public procurement will likely be made with their direct involvement and as such any challenges arising from implementation of sustainable public procurement would be known to them. Since the target population of 50 procurement staff was fairly small, the study undertook a census study and thus all the 50 procurement staff formed the sample. From the sample, purposive sampling was used in targeting the said procurement staff in each of the county ministries. Primary data was sourced from the responses the participants gave during the survey process. In this study an appropriate method to collect the primary data was a self-administered questionnaire. The survey questionnaire was seen as appropriate since it allows data from sampled groups to be collected in a quick and efficient manner. The use of survey questionnaire makes it possible for descriptive and inferential statistical analysis [25]. The questionnaire was piloted in Nakuru County, Kenya to evaluate the validity and reliability of the instrument. Piloting was done on 10 procurement staff in the county who did not form part of the sample. The county was chosen since ministries in the county undertake similar procurement processes. Before embarking on data collection, permission to collect data was sought from the National Council for Science, Technology and innovation. The researcher also sought clearance from both the university and the relevant county ministries. The data collected from the questionnaires were analyzed using both descriptive (means and standard deviations) and inferential statistics (correlation and regression) with the aid of the Statistical Package for Social Sciences. The results of the survey were presented in tables.

## **VI. RESEARCH FINDINGS AND DISCUSSIONS**

The researcher sought to find out the distribution of the respondents according to their gender, age bracket, education level and their work experience. According to the findings, majority of the respondents were male (60.5%) while the female respondents were 39.5%. The study thus deduced that there still exists a gender gap in the public service in Kenya where majority employees are still of the male gender. The findings in Table 4.2 indicate that a majority of the respondents were of the age group 31-40 years (51.2%) while the least age group was above 51 years (2.3%). This

trend was attributed to the move towards professionalization of the procurement sector which has attracted a more youthful generation. Furthermore, enhanced usage of technology-related processes has resulted in the employment of younger and technology-oriented employees. From Table 4.3, the study established that majority of the respondents (60.5%) had a degree level qualification. Further, over 86% of the respondents had either a bachelors or masters degree. This trend was attributed to the professionalization of the procurement sector in Kenya which has necessitated higher educational requirement for procurement staff. In terms of working experience, most of the respondents (46.5%) had between 5 to 10 years of work experience. Cumulatively, more than 65% of the respondents had over 5 years of work experience while 34.9% had less than 5 years of work experience. The study attributed this trend to the fact that county governments have since 2013 been employing younger employees who have the knowhow to undertake technology related procurement processes.

## 6.1 Human Resource Capacity

The descriptive findings of human resource capacity are depicted in Table 1.

**Table 1: Human Resource Capacity**

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)
Our ministry has competent staff who manage the entire procurement process	0	0	2.3	62.8	34.9
We continuously receive adequate training on the processes of sustainable procurement	0	9.3	25.6	34.9	30.2
Our ministry often uses performance feedback to evaluate members who need further training	0	18.6	39.5	27.9	14
Our ministry provides the necessary motivation which has enabled us perform efficiently	4.7	9.3	39.5	32.6	14
We are provided on a continuous basis with relevant information on procurement regulations	2.3	4.7	27.9	41.9	23.3
Our human resource capacity plays a critical role in implementing sustainable public procurement	0	0	2.3	60.5	37.2

From the findings in Table 1, majority of the respondents (97.7%) agreed that their ministry had competent staffs who manage the entire procurement process. As noted by [16] staff with high skill levels and knowledge have a significant impact on financial performance and operational efficiency in terms of quality improvement, design and reduction of lead times. They noted that many parts of the public sector lacked professional procurement expertise. Furthermore, majority of the respondents (65.1%) agreed that they continuously receive adequate training on the processes of sustainable procurement. In order to improve technical and managerial capacity for increased sustainable procurement, [17] call for focused investments in talent. They are of the view that firms must invest in helping employees acquire and build the knowledge, skills and attitudes required to carry out sustainability-related initiatives and generate additional fresh ideas. They must tap into employees' desire to make a positive difference in their organizations and communities. Therefore, adequate training received by the respondents would imply an enhanced level of performance arising from the direct impact of training. Furthermore, majority of the respondents (65.2%) agreed that they are provided on a continuous basis with relevant information on procurement regulations. As summarized by [18], lack of policy guidelines, political willingness, awareness of procurement professionals, contemporary knowledge of contractors and professional commitment about sustainable development as the barriers of practicing sustainable procurement. Therefore, enhanced provision of relevant information to staff would ultimately enhance implementation of sustainable public procurement. Furthermore, majority of the respondents (65.2%) agreed that human resource capacity plays a critical role in implementing sustainable public procurement. The findings agree with those of [15] who noted that procuring innovative solutions resides at the level of the individual where there may be a discrepancy between the capabilities held by procurers and the skills required for procuring innovative solutions. The opinion that whereas relatively little in-house competence is needed when procuring off the-shelf goods for the lowest possible price, greater competence is required to encourage suppliers to innovate.

However, majority of the respondents (41.9%) agreed that their ministry often used performance feedback to evaluate members who need further training while 39.5% were unsure. The findings are similar to those of [21] who found that procurement professionals occasionally face many challenges in the implementation of sustainable procurement practices including poor appraisal techniques, lack of budget for internal or external support, lack of

performance metrics to measure and monitor progress, in the local market, lack of support from the top management, resistance from suppliers, lack of internal expertise on sustainability topics, he also noted that minimal progress has been realized in the managing and minimizing these implementation challenges in public organizations. Similarly, majority of the respondents (46.6%) agreed that their ministry provided the necessary motivation which had enabled them perform efficiently while 39.5% were unsure. As noted by [20], some tasks need a greater level of skilled and knowledgeable employees, and that lack of employees training inhibited empowerment of employees. Furthermore, relevant and adequate motivation of procurement staffs need to be merged with tailor-made training in order to reinforce attributes associated with individual employee performance.

## 6.2 Implementation of Sustainable Public Procurement

The descriptive findings for propositions on implementation of sustainable public procurement are shown in Table 2.

**Table 2: Implementation of Sustainable Public Procurement**

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)
Our ministry incorporates aspects of environmental sustainability in the procurement process	11.6	34.9	27.9	16.3	9.3
All tenders undertaken by our ministry includes environmental sustainability aspects	7	18.6	51.2	14	9.3
We are always guided by procurement costs in the implementation of sustainable public procurement	0	11.6	27.9	34.9	25.6
Our procurement function achieves value for money by selecting cheaper alternatives that may or may not be sustainable	0	2.3	11.6	53.5	32.6
We have preferential procurement that targets social inclusion of marginalized groups	0	0	16.3	48.8	34.9
All our staff have adequate level of knowledge on sustainable public procurement	0	0	4.7	53.5	41.9
Our ministry has internal performance criteria benchmarked on best practices to implement sustainable public procurement	0	0	14	53.5	32.6
Our ministry has thus successfully implemented sustainable public procurement	0	2.3	11.6	39.5	46.5

As shown in Table 2, majority of the respondents (60.5%) agreed that they were always guided by procurement costs in the implementation of sustainable public procurement while 27.9% were unsure. As was established by [26] additional costs of more sustainable options, perceptions of inability to offset whole cost and lack of resources and budget to do anything other than what is conventionally expected often guides implementation of sustainable procurement in many organizations. Similarly, majority of the respondents (86.1%) agreed that their procurement function achieved value for money by selecting cheaper alternatives that may or may not be sustainable. This is in line with [22], who noted that public procurement is subjected to dynamic changes and thus value for money takes precedence over sustainability. On preferential procurement, majority of the respondents (83.7%) agreed that they had preferential procurement that targeted social inclusion of marginalized groups. The finding can be attributed to the legislative requirements that provides for all government institutions to offer 30% of preferential procurement opportunities to the youth, women and other marginalized groups. Furthermore, majority of the respondents (95.4%) agreed that all their staff had adequate level of knowledge on sustainable public procurement. This finding is a clear pointer to the professionalization of the procurement sector. The findings differ with those of [21] who noted that many procurement managers in Kenya lack competitive knowledge and skills on how to formulate and embrace effective procurement policies in many public institutions in Kenya. It can thus be pointed out that there has been progress in the managing and minimizing of the implementation challenges facing sustainable procurement in public organizations.

Finally, majority of the respondents (86.1%) agreed that their ministry had internal performance criteria benchmarked on best practices to implement sustainable public procurement. As enumerated by [17], management skills and actors in the supply chain in developing countries need to further strengthen their position. Inadequate education systems means there is a shortage of managers who can both manage the procurement processes and understand the technical aspects of its sustainability. In order to improve technical and managerial capacity for increased sustainable procurement, there needs to be more focus on enhanced investments in talent. Further, majority of the respondents (86%) agreed that their ministry had successfully implemented sustainable public procurement. This is contrary to suggestions by [27] that sustainable public procurement would reduce competition, result in higher public

expenditure, could be subject to misuse and increased corruption, and could increase the administrative burden in particular. However, majority of the respondents (27.9%) were unsure when asked whether their ministry incorporated aspects of environmental sustainability in the procurement process or whether all tenders undertaken by their ministry included environmental sustainability aspects (51.2%). The findings can thus be attributed to the fact that environmental sustainability may not be one of the important considerations in public procurement. As pointed out by [28] who did a study on how laws and regulations improved awareness on sustainable procurement and thus drove environmental management practices, many organizations work in an environment that induces organizations to adopt sustainable procurement which enables them gain competitive advantages. Nevertheless, sustainable procurement may not a priority probably due to factors not attributed to variables under study but which seemingly does not include aspects of environmental sustainability.

### 6.3 Correlation Analysis

Before undertaking correlation analysis, the respondents' ratings in the statements were cumulated to obtain a composite score for the variable. The composite score were then correlated to determine the strength and direction of the relationship between the variables.

**Table 3: Human Resource Capacity and Implementation of Sustainable Public Procurement**

Implementation of Sustainable Public Procurement	Human Resource Capacity	
	Pearson Correlation	.434**
	Sig. (2-tailed)	.004
	N	43

\*. Correlation is significant at the 0.01 level (2-tailed).

From Table 3, it was established that there was a moderately strong and positive correlation between human resource capacity and implementation of sustainable public procurement [ $r = 0.434^{**}$ ,  $p = .004$ ]. This implied that higher levels of implementation of sustainable public procurement can be associated with the quality and quantity of the human resources available. Based on these findings, the study deduced that human resource capacity has significant influence on implementation of sustainable public procurement. The findings are in agreement with those of [19] who found that lack of knowledge by procurement employees and lack of management support was a limiting factor in the adoption of sustainable procurement. They further noted that unavailability of sustainable products, lack of knowledge about the concept and the perception that sustainable products are expensive also contributed to the challenges affecting the adoption of sustainable procurement.

### 6.4 Regression Analysis

Regression analysis enables estimation of the relationship between a dependent variable and several predictor variables. For purposes of this study, simple linear regression analysis was carried out to determine the individual relationship between each independent variable with the dependent variable. Simple linear regression analysis was undertaken to establish the relationship between human resource capacity and implementation of sustainable public procurement and regression results are presented in Table 4.

**Table 4: Regression Model Summary**

R	R Square	Adjusted R Square	Std. Error of the Estimate
.434 <sup>a</sup>	.189	.169	.39425

a. Predictors: (Constant), Human Resource Capacity

The fitted model R square of 0.189 implied that human resource capacity explained 18.9% of the variation in implementation of sustainable public procurement. From Table 5, it can also be deduced that the model was statistically significant ( $F = 9.529$ ,  $P < 0.05$ ).



**Table 5: ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.481	1	1.481	9.529	.004 <sup>b</sup>
Residual	6.373	41	.155		
Total	7.854	42			

a. Dependent Variable: Implementation of Sustainable Public Procurement

b. Predictors: (Constant), Human Resource Capacity

From the regression analysis, the regression coefficients, standardized parameters and the significance of the estimates obtained were as shown in Table 6.

**Table 6: Regression Coefficients**

	Unstandardized Coefficients	Standardized Coefficients			
	B	Std Error	Beta	t	Sig.
(Constant)	2.493	.440		5.662	.000
Human Resource Capacity	.350	.113	.434	3.087	.004

a. Dependent Variable: Implementation of Sustainable Public Procurement

From the model, a unit increase in human resource capacity would lead to an increase in implementation of sustainable public procurement by a factor of 0.350. From Table 6, human resource capacity [ $t = 3.087$ ,  $p < .05$ ], the null hypothesis was rejected and the study concluded that human resource capacity has a statistically significant influence implementation of sustainable public procurement. The current findings are in agreement with those found by [21] who found that procurement professionals lack competitive knowledge and skills on how to formulate and embrace effective procurement policies in many public institutions in Kenya.

## VII. CONCLUSIONS

The study concluded that counties had competent employees who manage the entire procurement process and who have a significant impact on operational efficiency in terms of quality improvement, design and reduction of lead times. Furthermore, it was concluded that staff continuously receive adequate training on the processes of sustainable procurement. It was also concluded that counties provided employees on a continuous basis with relevant information on procurement regulations. Furthermore, it was concluded that human resource capacity plays a critical role in implementing sustainable public procurement. Since procuring innovative solutions resides at individual level, continuous training is mandatory. The study also concluded that counties used performance feedback to evaluate members who need further training. Further, it was concluded that counties provided the necessary motivation to procurement staff which had enabled them perform efficiently. Therefore, for enhanced implementation of sustainable public procurement, relevant and adequate motivation of procurement staffs need to be merged with tailor-made training in order to reinforce attributes associated with individual employee performance. Finally, it was concluded that there was a moderately strong and positive correlation between human resource capacity and implementation of sustainable public procurement which implies that higher levels of implementation of sustainable public procurement can be associated with the quality and quantity of the human resources available to the counties. The study recommends enhanced capacity building of procurement staff in order to enhance their capacity to implement sustainable public procurement.

## REFERENCES

- [1] R. E. Crandall, W. R. Crandall & C. C. Chen, *Principles of Supply Chain Management* (London: CRC Press, 2010).
- [2] A. Ashby, M. Leat & M. Hudson-Smith, Making connections: A review of supply chain management and sustainability literature. *Supply Chain Management*, 17, 2012, 497–516.
- [3] W. Helen & J. Neil, Sustainable supply chain management across the UK private sector. *Supply Chain Management*, 17, 2012, 15–28.
- [4] S. Brammer & H. Walker, Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management*, 31(4), 2011, 452– 476.
- [5] A. Paulraj, Understanding the relationships between internal resources and capabilities, sustainable supply management and organizational sustainability, *Journal of Supply Chain Management*, 47(1), 2011, 19–37.
- [6] J. Gelderman, J. Semeijn & R. Vluggen, Development of sustainability in public sector procurement, *Public Money & Management*, 37(6), 2017, 435–442.

- [7] J. Wu, X. Zhang & J. Lu, Empirical Research on Influencing Factors of Sustainable Supply Chain Management - Evidence from Beijing, China, *Sustainability*, 10, 2018, 1-12
- [8] J. Hanks, H. Davies & O. Perera, *Sustainable Public Procurement in South Africa* (Manitoba: International Institute for Sustainable Development, 20120).
- [9] P. A. Obicci, Trouncing Barriers to Sustainable Procurement Practices in Public Sector Organizations in Uganda, *International Journal of Research in Management, Science & Technology*, 5(1), 2017, 64-74.
- [10] B. Chelangat, K. Ombui & J. Omwenga, Factors affecting effective implementation of sustainable procurement practices in government Parastatals in Kenya: A case of national gender and equality commission. *The Strategic Journal of Business and Change Management*, 2(2), 2015, 2197 – 2229
- [11] L. E. Kipkorir & D. M. Wanyoike, Factors influencing implementation of green procurement in multinational tea companies in Kericho County. *International Journal of Economics, Commerce and Management*, 3(6), 2015, 431-446.
- [12] J. W. Wechuli & S. O. Namusonge, Role of Sustainable Procurement Practices on Corporate Governance in the Kenyan Public Transport Sector: A Case of Kenya Ports Authority, *International Journal of Social Sciences and Environmental Technology*, 3(2), 2017, 1583-1598.
- [13] S. C. Chepkangor & G. Lubale, Factors influencing government procurement opportunities for disadvantaged groups in public institutions at KPA, *International Journal of Advanced Research*, 5(4), 2017, 63– 75.
- [14] J. N. Khisa, *Green Procurement in Public Sector: The Case of Parastatals in Kenya*, Unpublished MBA Project, University of Nairobi, 2011.
- [15] R. Tassabehji & A. Moorhouse, The changing role of procurement: Developing professional effectiveness. *Journal of Purchasing and Supply Management*, 14(1), 2008, 55-68.
- [16] P. D. Cousins, R. B. Handfield, B. Lawson & K. J. Petersen, Creating supply chain relational capital: The impact of formal and informal socialization processes. *Journal of Operations Management*, 24(6), 2006, 851-863.
- [17] P. Lacy, J. Arnott & E. Lowitt, The challenge of integrating sustainability into talent and organization strategies: investing in the knowledge, skills and attitudes to achieve high performance, *Corporate Governance*, 9(4), 2009, 484 – 494.
- [18] S. Rahman, *Addressing Sustainability Through Public Procurement for Sustainable Development of Bangladesh*, Unpublished Masters Project, BRAC University, 2014.
- [19] F. Chari & L. Chiriseri, Barriers to Sustainable Procurement in Zimbabwe. *Greener Journal of Business and Management Studies*, 4(1), 2014, 14–18.
- [20] B. Ageron, A. Gunasekaran & A. Spalanzani, Sustainable supply management: An empirical study. *International Journal of Production Economics*, 140(1), 2011, 168-182.
- [21] R. S. Telewa, *Sustainable procurement practices in the public water sector institutions in Kenya*. Unpublished Master in Business Administration Project, University of Nairobi, Kenya, 2014.
- [22] A. K. Wambaya, J. Oketch, G. Namusonge & M. Sakwa, Effect of reverse logistics on procurement performance among state corporations in Kenya (A case of Kenya Medical Supplies Authority-KEMSA). *Journal of Business and Management*, 20(1), 2018, 87-94.
- [23] J. L. Glover, D. Champion, K. J. Daniels & A.J.D. Dainty, An institutional theory perspective on sustainable practices across the dairy supply chain. *International Journal of Production Economics*, 152, 2014, 101-111.
- [24] A. Mugenda & O. Mugenda, O. (2009). *Research methods; quantitative and qualitative approaches* (Nairobi: Africa Center for Technology (ACTS) Press, 2009).
- [25] M. Saunders, P. Lewis & A. Thornhill, *Research Methods for Business Students*, (Edinburgh Gate: Pearson, 2009).
- [26] M. M. Islam & C. Siwar, A Comparative study of public sector sustainable procurement practices, opportunities and barriers, *International Review of Business Research Papers*, 9(3), 2013, 62-84.
- [27] M. A. Mannan & Z. Islam, A study to assess public procurement regulations for sustainable development in Bangladesh, *International Journal of Engineering, Business and Enterprise Applications*, 5(1), 2013, 81-86.
- [28] J. Sarkis, Q. Zhu & K. Lai, An Organizational Theoretic Review of Green Supply Chain Management Literature. *Working Paper No. 2010-11*, 2010.