


# **INFLUENCE OF PROCUREMENT PLANNING ON PERFORMANCE OF KISUMU WATER AND SEWERAGE COMPANY LIMITED, KENYA**

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## **Abstract**

*This study investigated the influence of procurement planning on performance of Kisumu Water and Sewerage Company. The study further assessed the influence of transparency in procurement, and procurement requirements on performance of KIWASCO. The study was guided by game theory and resource-based theory. Survey research design was adopted. The study population comprised of the 128 procurement officers, middle level managers, supervisors and departmental heads working with KIWASCO. A sample of 57 respondents was derived from the aforesaid population using stratified random sampling technique. A structured questionnaire was used to facilitate in data collection. A pilot study was conducted before the main study to determine potential weaknesses in the data collection tool through validity and reliability tests. The SPSS software was employed in data analysis. Descriptive and inferential statistics were used. The study found that all facets of procurement planning, that is, transparency in procurement and procurement requirements were positively correlated to organizational performance. However, the study found that transparency in procurement was the only one that had a significant influence on the performance of KIWASCO. It was deduced that transparency in procurement was very important towards advancing the performance of the firm. The study concluded that procurement requirements were of significant importance to the performance of*

*KIWASCO. The tendering process for the firm is advised to be open regardless of the magnitude of the goods and/or services intended to be procured. The study recommends that KIWASCO and other firms in the water and sewerage sector should evaluate various strengths and weaknesses of the prospective suppliers and service providers.*

*Keywords: KIWASCO, performance, procurement planning, procurement requirements, transparency*

## **INTRODUCTION**

Procurement planning describes the process in which a firm decides what to procure, when and from what source. The procurement method is assigned and also the expectations for fulfillment of procurement requirements determined during the procurement planning process. Procurement planning can also be described as the process employed by firms both in the public and private sector to plan purchasing activity for a given period of time (Agaba & Shipman, 2007). Procurement planning is further described as the purchasing function which is employed by firms to obtain (procure) products and/or services from suppliers according to Economic Commission of Africa (ECA, 2003).

Globally, public procurement can be traced to its nascent form of purchasing in the United States from 1792 when the Federal Government authorized departments of war and treasury to enter into contract on behalf of the nation (Callender & Matthews, 2000). Public purchasing progressed over the years and was for long viewed as merely a clerical function by many. The purchasing function evolved into procurement, a respectable function in 1990's in tandem with the electronic boom that led to the rise of electronic commerce and electronic business. The dynamics in the world demanded that public procurement professionals to focus majorly on the strategic aspects of procurement and less on routine transactions. It is further noted that while unit cost focus is both historic and tactical, procurement planning is both strategic and leading (Matthews, 2005).

In Africa, Asare, Kane, Leautier and Majoni (2009) analyzed trends in public procurement on the continent. According to these scholars, procurement in the public sector is subject to a number of fundamental processes which are required to function seamlessly for effective results to be realized. Part of these processes includes demand assessment in order to figure out needs for goods and services that ought to be procured. The second process is budgeting while considering priority vote heads when it comes to resource allocation. Awarding, supervision and management of contracts in order to get the procured goods delivered. Lastly,

the quality of the delivered goods and services is regulated with the object of enforcing contracts. It has further been revealed that the countries to the south of Sahara have consistently underperformed other countries in Africa in respect to the foregoing processes.

In Kenya, procurement in the public sector is subject to the stipulations of the Public Procurement and Assets Disposal Act (PP&ADA), 2015. The principle purpose of the Act is to establish procedures for both procurement and disposal of unserviceable, obsolete or surplus equipment by public organizations with the aim of maximizing economy and efficiency. This Act requires public entities to plan their procurement activities in a manner that is transparent, accountable and gives maximum value to taxpayers' funds (Republic of Kenya, 2015). Previously known as the Public Procurement and Disposals Act, 2005, the PPDA, 2005 was revised to the PP&ADA, 2015. The latter was assented to law on 18<sup>th</sup> December, 2015 and its implementation commenced on 7<sup>th</sup> January, 2016. The PPDA applies to all state organs and public entities in regard to procurement planning, procurement processing, inventory and asset management, disposal of assets, and also contract management (Republic of Kenya, 2015). Therefore all accounting officers of public entities shall prepare an annual procurement plan which is realistic within the approved budget prior to commencement of each financial year as part of the annual budget preparation process (PP&ADA 2015 Cap53, 1-11)

Procurement particularly in the public sector has been facing many challenges since times immemorial. Institutional and governmental purchasing departments are observed not to have been successful in enlisting the aid of the operating departments and personnel on planning and scheduling procurements. The foregoing has resulted in addressing urgent procurement needs through ad hoc procedures as opposed to standard procurement procedures. Ultimately, there is disruption to the operations of firms concerned (Mangesho, 2003).

The water and sanitation companies are public entities which are prone to procurement inadequacies facing other state departments. Against this backdrop, the present study aimed at examining the influence of procurement planning on performance of such entities focusing specifically on Kisumu Water and Sewerage Company Limited (KIWASCO).

### **Problem Statement**

The challenges facing accessibility of safe water and sanitation services is underscored by Muniu's (2010) observation that across the world, more than 1 billion people lack access to clean and safe water while close to 3 billion face sanitation problems. There are several procurement challenges that face water, sanitation and sewerage companies in the country. Flawed tendering process, lack of transparency and accountability among the procurement

officers and ineffective tendering committees. These may result in single sourcing of various materials, products and services which are procured by these firms. Resultantly, the firms may contract the highest bidder as opposed to the lowest bidder; a fact that has negative financial implications. The procurement process associated with inflation of costs of procured materials and services is likely to compromise the operations of these water companies due to misappropriation of funds. Flawed procurement is likely to lead to procurement of either poor quality services or products, or procuring of the same at inflated prices. Either way, the operations and performance of water companies are bound to be negatively affected. Literature suggests that procurement planning is one of the primary functions of procurement with a potential to contribute to the success of operations and improved performance. Despite this importance, very limited scientific research has been done to examine the extent to which efforts in procurement planning can contribute to effective public institutions performance. In addition, there are very few, if any, empirical studies that have attempted to address the link between procurement planning and performance of water and sanitation companies in Kenya. It is against this backdrop that it was necessary to investigate the influence of procurement planning on performance of Kisumu Water and Sewerage Company which is one of the water and sanitation firms in Kenya.

### **General Objective**

To examine the influence of procurement planning on performance of Kisumu Water and Sewerage Company Limited.

### **Specific Objectives**

- i. To examine the influence of transparency in procurement on performance of Kisumu Water and Sewerage Company Limited
- ii. To determine the influence of procurement requirements on performance of Kisumu Water and Sewerage Company Limited

### **Research Hypotheses**

**H<sub>01</sub>:** There is no significant influence of transparency in procurement on performance of Kisumu Water and Sewerage Company Limited.

**H<sub>02</sub>:** There is no significant influence of procurement requirements on performance of Kisumu Water and Sewerage Company Limited.

## **THEORETICAL FRAMEWORK**

Theoretical framework shows and discusses theories that are pertinent to procurement planning and organizational performance. The theories reviewed included game theory and resource-based theory.

### **Game Theory**

The game theory was proposed by Neumann in 1953. The theory states that interacting choices of economic agents produce outcomes with respect to the preferences of those agents in which case such outcomes might have not been intended by any of the agents. Game theory is also stated to be the formal study of decision making where various players are obliged to make choices that potentially affect the interests of other players (Turocy& Stengel, 2001). The theory puts into perspective conflict and cooperation. The concepts of the game theory are applicable when the actions of various agents such as individuals, groups, firms or any combination of the foregoing agents, are interdependent with each other.

The game theory gained special attention in 1994 when Nash, Harsanyi and Selten who were contributors of the theory were awarded the Nobel Prize in economics (Turocy& Stengel, 2001).The game theory can be employed in procurement situations where an experienced bidder is expected to add to his own bid not just a markup for profits, but also for the potential underestimation of the cost that emanates from the competitive selection process (Turocy& Stengel, 2001). In regard to the rules of the game theory, it is advisable for water and sewerage firms to ensure that rules are to their advantage when negotiating contracts as part of the procurement process.

### **Resource-Based Theory**

The proponent of resource-based theory (RBT) was Penrose in 1959. Other contributors of the RBT that served to advance the theory include Rubin (1973) and Slater (1980). The theory states that a firm can create economic value not necessarily due to simply possessing resources but mostly due to effective and innovative management of resources. According to the theory, there exists three key arguments which include linkages among resources of an organization, productive opportunities and profitable firm growth.

According to Penrose (1959), there is a distinction between productive resources and productive services. It is further asserted that when given the same bundle of resources, the services that this specific bundle of resources brings on board will typically be different depending on idiosyncratic deployments. It is further posited that intra-sectorial heterogeneity

arising from creative resource deployments creates differences in productive opportunities and financial performance (Penrose, 1959).

According to Penrose (1959) in Kor and Mahoney (2004), there exists causal links between resources and the generation of productive opportunities for both growth and innovation. It is exemplified that the experience of employees particularly managers affect the image of the unique productive opportunities available to their firms. Managers are asserted to function as catalyst in the conversion of resources of an entity into firm's capabilities and new product applications. In tandem with organizational performance of water and sewerage firms, the theory can be employed to explain how these firms can prudently employ the procured resources to the betterment of their performance.

## **EMPIRICAL FRAMEWORK**

This section covers a review of past studies in relation to procurement planning and organizational performance particularly in water and sewerage firms. The review is in line with the study variables which include transparency in procurement and procurement requirements in relation to organizational performance.

### **Transparency in Procurement and Organizational Performance**

A study by Holmberg and Rothstein (2011) analyzed the quality of government and access to safe water. The study which focused on countries in the developing world was prompted by World Health Organization's (WHO) estimates that 1.2 billion people lack access to sufficient safe water while 2.6 billion people lack adequate sanitation. The study exemplified that in India provision of safe water demands for huge investments in dams, water cleaning equipment and sewage systems which are often carried out by private contractors. In view of this, it is revealed that public procurement for big contracts is linked to large-scale corruption which results in high costs and low quality of constructions. In India, the study indicated that more than 25% of the costs for irrigation systems are lost through bribes. In the same breadth, it is noted that many irrigation installations are technically highly complicated, a fact that tends to increase difficulties for transparency in the procurement process.

A study prepared by Wensink and Vet (2013) on behalf of the PricewaterhouseCoopers (PwC) and Ecorys for the European Commission (EC) focused on how to identify and reduce corruption in public procurement in the European Union (EU). The study found that electronic procurement (e-procurement) improves transparency, exchange of information and also communication in virtually all member States of the EC. The study further observed that public procurement systems and databases for the collection of data are drafted not only to facilitate

the process of public procurement, but also to respond to the need for the collection of information for transparency and information on equal basis of all potential bidders. It is further observed that transparency has become an important factor for the measurement of corruption. Moreover, the study revealed that measures that enhance transparency of public procurement include introduction of e-procurement, broader utilization of forensic audits, reinforcing investigation and enforcement capacity, voluntary disclosure programs, external monitoring (audit), reporting and information access and also information sharing.

Relative to transparency in procurement, Plummer and Cross (2006) conducted a study on how to tackle corruption in the water and sanitation sector (WSS) in Africa. The study indicated that in spite of the complexity, leakage and the potential effect on the poor, there exists limited understanding of the extent to which and nature of corruption in the water and sanitation sector in Africa. The study indicated that reforms in the WSS in many countries in Africa has removed conflicts of interests in sector management and also improved transparency and accountability.

In Ghana, Synyenlentu (2014) conducted a study on procurement of essential water treatment chemical at the Ghana Water Company Limited. Data was collected from a sample of 85 workers in the procurement division of the firm. The study revealed that procurement of water treatment chemicals abided with various principles and procurement phases. Transparency was identified as one of the principles of procurement. The study observed that procurement management using Public Procurement Act (PPA) was not sufficient in checking transparency on procurement of essential water chemicals. It was also revealed that the procurement of essential chemicals was open to all interested individuals to apply, which was a significant step towards achieving transparency.

In Kenya, a study by Makau (2014) analyzed challenges facing adoption of e-procurement in the public sector. The study was a case of Nairobi Water and Sewerage Company. The concurred that electronic procurement is a practice which has the capacity to enhance efficiency and transparency and also lead to reduction of costs in the Kenya's public sector. The implementation of e-procurement was asserted to improve transparency and accountability in government procurement processes. The study further noted that the government procurement process should be straightforward, open, objective and transparent. Corruption was found to be the greatest hindrance of procurement process. In the organizations, lack of both transparency and accountability was attributed to corruption in the procurement processes.

## Procurement Requirements and Organizational Performance

The World Bank commissioned a study on joint bidding in infrastructure procurement which was conducted by Estache and Limi (2008). The study noted that in order to employ public resources efficiently, it is required to take absolute advantage of competition in public procurement auctions. The study established that technical requirements are high in the electricity sector. The foregoing has led to increased difficulties in the management of the sector particularly during the procurement process. It is advised that in road procurements, local firms are supposed to collaborate with foreign companies instead of collaborating with local firms. The foregoing is in cue with the observation that individual local firms are at times unable to meet the experience and financial requirements to apply for public contracts on sole basis.

A study by Kayaga (2008) examined public-private delivery of urban water services in Africa. The study was a case of the National Water and Sewerage Corporation (NWSC) based in Kampala, the capital of Uganda. The study brought to the fore the limitations in the procurement process witnessed in the firm. The issue of procurement requirements was put into question particularly in the case where NWSC procured services of a German technical consulting firm, H P Gauff. It was found that the management did not subject the firm to a full tendering process. NWSC only relied on the fact that the firm was offering similar services to a similar firm in the coastal town of Malindi in Kenya. Given that the latter was a far much smaller engagement, then NWSC failed to consider procurement requirements adequately but instead hastily negotiated the management contract with H P Gauff. The hasty procurement process had a number of implications. Given that the process was single-sourcing, competencies inherent in a market competition were missed out.

In Tanzania, a study by Nordmann (2011) examined political dynamics of the water sector reform. The study acknowledged that in spite of the United Nations (UN) declaring access to water and sanitation as a human right, more than half of Tanzanians lack basic water and sanitation services. This challenge is asserted to stem from lack of effective institutions and organizations providing water and sanitation services in Tanzania. The study argued that poor implementation of water and sanitation related policies is attributed to lack of qualified personnel and finance, weak technical and logistical capacities, lack of infrastructure, and also bureaucratic procurement procedures. It was observed that the sector loses approximately 40% of expenditure to corruption due to weak procurement capacities, lack of transparency and delayed monitoring reports (Nordmann, 2011).

A study by Kimani (2013) analyzed factors affecting implementation of enterprise resource planning (ERP) in State corporations. The study was conducted in Nairobi City Water and Sewerage Company. In the study, it is indicated that the ERP requirements of firms in

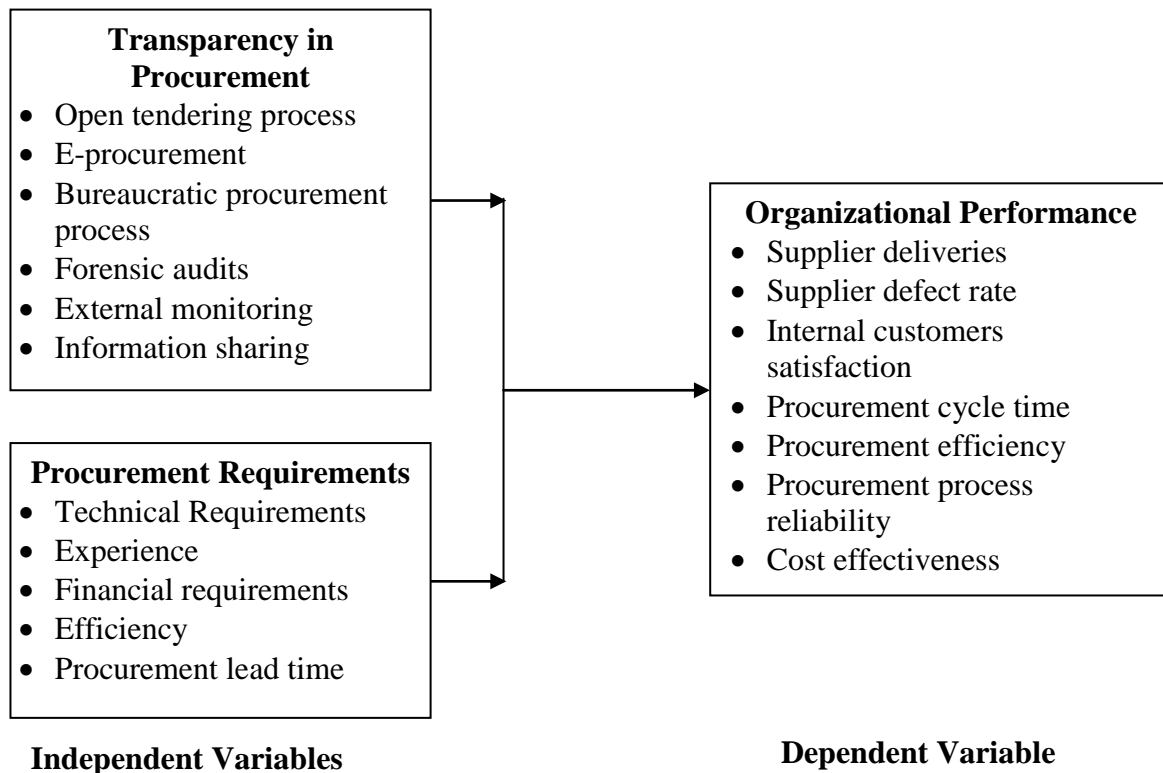


Africa are largely consistent with those of other business enterprises in the rest of the world. It is asserted that ERP requires establishing core competencies which include use of change management strategies aimed at infusing of enterprise resource planning at the workplace. It is further noted that top management support is required for the implementation of ERP to be successful.

**Conceptual Framework**

According to McGaghie, Bordage and Shea (2001), the conceptual framework identifies study variables and clarifies relationships among the variables. The conceptual framework for this study is as shown in Figure 1.

Figure 1: Conceptual Framework



Independent variables which characterize procurement planning include transparency in procurement and procurement requirements while performance of KIWASCO is the dependent variable. The foregoing study variables are operationalized by various measurable indicators. It was held that the two independent variables influenced the performance of Kisumu Water and Sewerage Company (KIWASCO). It is on this premise that the current study was conducted.

## METHODOLOGY

### Research Design

According to Kothari (2008) a research design is defined as a blueprint of conducting a research study. A good study is founded upon the choice of a suitable research design. In this study, a survey research design was adopted. This design is employed in studies that are conducted at a specific point in time (Lavrakas, 2008). The current study was carried out over a given period of time. The fact that the study involved various participants (procurement officers, supervisors, middle-level managers, and departmental heads) working with Kisumu Water and Sewerage Company (KIWASCO) further justified the choice of survey research design.

### Target Population

The population to which the study findings are generalized is referred to as the target population. It consists of members or subjects exhibiting similar characteristics (Lavrakas, 2008). In the context of the present study, the target population encompassed the procurement officers, departmental heads and middle-level managers working with water and sewerage firms in Kenya. The study population, on the other hand, encompassed the aforesaid employees working with KIWASCO who numbered 128.

### Sample Size and Sampling Technique

Sampling design or technique is described as one that represents the framework within which sampling occurs (Onwuegbuzie & Collins, 2007). The components of a sampling design include the sampling frame and the sample size. Table 1 outlines the sampling frame.

Table 1: Sampling Frame

Designation	Number of Employees
Heads of Departments	8
Procurement Officers	12
Middle-level Managers and Supervisors	108
<b>Total</b>	<b>128</b>

A sample size is a subset of the study population and it is necessitated when the population is relatively large (Kothari, 2004). In order to determine the sample size, a formula by Nassiuma (2008) was adopted as shown below.

$$n = \frac{NC^2}{C^2 + (N-1)e^2}$$

$n$  = Sample size

$N$  = population size

$C$  = Coefficient of variation ( $21\% \leq C \leq 30\%$ )

$e$  = Error rate ( $2\% \leq e \leq 5\%$ )

Substituting the values in the equation:

$$n = \frac{128(0.25)^2}{0.25^2 + (128-1)0.025^2}$$

$$n = 56.39$$

$$n = 57 \text{ respondents}$$

According to the above calculations, the sample size constituted 57 respondents who were distributed as shown in Table 2. The sampled respondents were obtained from the study population using stratified random sampling method. This method, according to Kothari (2004) ensures that there is fair and equitable distribution of respondents across all strata. The strata in the context of the present study were the various categories of employees working with KIWASCO.

Table 2: Sample Distribution

Designation	N	Sampling Ratio	n
Heads of Departments	8	0.06	3
Procurement Officers	12	0.09	5
Middle-level Managers and Supervisors	108	0.85	49
<b>Total</b>	<b>128</b>	<b>1.00</b>	<b>57</b>

### Research Instrument

A data collection instrument is a tool that is used to aid in data collection. The choice of a suitable tool is dependent on the research objectives and also the kind of data (qualitative or quantitative) that are supposed to be collected. In this study, a structured questionnaire was used to facilitate in data collection. According to Mugenda and Mugenda (2009), questionnaires are the most suitable tools for data collection in survey studies. The present study was a survey, hence the choice of questionnaires. The questionnaire was structured in such a way that it enabled collection of data pertinent to the study objectives. The questions therein were on a five-point Likert scale. The questions were also close-ended.

## Pilot Testing

A pilot study is a minor study that is ordinarily conducted prior to the main study. The rationale of conducting this study is in order to determine potential weaknesses in the data collection tool. There are two tests used to determine the presence of the foregoing weaknesses. These are validity and reliability tests. The pilot study involved randomly selected employees working with Nakuru Water and Sanitation Company (NAWASCO) who numbered about 10% of the sample size. The choice of NAWASCO was premised on the fact that the firm offers similar services to KIWASCO and also the respondents in the pilot study were supposed to be excluded from the main study.

## Validity Test

A validity test is carried out in order to determine whether or not the data collection tool is able to facilitate the collection of the intended data (Kimberlin & Winterstein, 2008). In the present study, the content validity of the research questionnaire was determined through consulting the assigned university supervisor whose opinion was deemed sufficient in determining the instrument's validity.

## Reliability Test

Reliability is the consistency of a research instrument. This implies that a reliable instrument is able to return similar results when administered on similar populations. Given that the external consistency is beyond the control of the researcher, the internal consistency of the data collection tool is determined. There are different tests for reliability but the use of Cronbach alpha is the most widely used and recommended (Kimberlin & Winterstein, 2008) particularly when the instrument contains questions on a Likert scale. In this respect, therefore, the Cronbach alpha coefficient ( $\alpha$ ) was used to test the reliability of the research instrument. The reliability threshold was alpha coefficient equal to 0.7 ( $\alpha = 0.7$ ) or greater than 0.7 ( $\alpha > 0.7$ ). The results of the reliability testing are shown in Table 3.

Table 3: Reliability Test Results

Study construct	No. of items	Cronbach alpha	Comment
Transparency in procurement	6	0.781	Reliable
Procurement requirements	5	0.771	Reliable
Organizational performance	7	0.835	Reliable

### Data Collection Procedure

The researcher sought prior permits and consents from the relevant authorities in order to be allowed to embark on data collection. First, an introductory letter was obtained from the university. The researcher then sought the approval of the management of both NAWASCO and KIWASCO whose staff were required to participate in both the pilot and main studies respectively. The questionnaires were issued to the sampled respondents by the researcher. The filled questionnaires were collected after a period of approximately five days.

### Data Analysis and Presentation

The collected questionnaires were screened to ensure that they had been appropriately filled in order to address the issue of outliers brought about by among others, non-responses and wrongly filled questionnaires. The Statistical Package for Social Sciences (SPSS) Version 24 software was employed to facilitate in data analysis. Descriptive statistics which include measures of distribution, central tendencies, and dispersion were used. Moreover, inferential statistics in correlation and multiple regression analyses were used. The results emanating from the data analyses were presented in form of tables. The following multiple regression model was adopted.

$$Y = \beta_0 + X_1\beta_1 + X_2\beta_2 + \varepsilon$$

Where:

Y	represents	'Organizational Performance'
$\beta_0$	represents	'Constant'
$X_1$	represents	'Transparency in Procurement'
$X_2$	represents	'Procurement Requirements'
$\varepsilon$	represents	'Error term'
$\beta_1, \beta_2$	represent	'Regression coefficients'

## FINDINGS AND DISCUSSIONS

### Response Rate

The sampled respondents were 57 procurement officers, departmental heads, and middle level managers working with KIWASCO. Therefore, a total of 57 questionnaires were issued to these respondents. After allowing the respondents approximately five working days to fill in the questionnaires, the filled ones were collected ready for analysis. Screening of the filled questionnaires led to the conclusion that the ones which were appropriately filled numbered 49. This amounted to 85.96% response rate which is over and above the 75% response rate in survey studies (Nulty, 2008).

## Descriptive Findings and Discussions

The study investigated the determinants of procurement planning on performance of Kisumu Water and Sewerage Company Limited. The specific facets of procurement planning studied included transparency in procurement and procurement requirements. As such, the study sought the views of the procurement officers, supervisors, departmental heads and middle-level managers of the firm in respect to procurement planning and performance of the said company. The views were on a 5-point Likert scale where 1, 2, 3, 4, and 5 represented strongly disagree, disagree, neutral, agree, and strongly agree respectively. The views of these staff are presented in form of frequencies, means and standard deviations.

### *Transparency in Procurement*

The study analyzed the views of procurement officers, supervisors, middle level managers and procurement officers working with KIWASCO in regard to how transparency was observed during procurement planning in the firm. The results in relation to this are shown in Table 4.

Table 4: Descriptive Statistics for Transparency in Procurement

	n	SA	A	N	D	SD	Mean	Std. Dev.
KIWASCO ensures that procurement information is shared amongst all interested stakeholders	49	35	9	3	2	0	4.63	.703
KIWASCO ensures that the tendering process is open to all interested bidders	49	33	12	2	2	0	4.60	.676
Monitoring of the procurement procedure is effected by external independent entities	49	31	9	3	6	0	4.35	1.041
KIWASCO ensures that forensic audits are conducted on the entire procurement procedure	49	25	12	6	6	0	4.19	1.024
The procurement process is long and bureaucratic	49	21	8	9	6	5	3.75	1.361
KIWASCO has adopted electronic procurement	49	2	2	19	9	17	2.19	1.045

The study observed that the sampled staff strongly agreed that KIWASCO ensured that procurement information was shared amongst all interested stakeholders (mean = 4.63%; std dev = 0.703), and that the firm ensured that the tendering process was open to all interested bidders (mean = 4.60; std dev = 0.676). These results supported the findings of a study conducted at Ghana Water Company Limited in Ghana by Synyenlentu (2014). The latter findings indicated that the procurement of essential chemicals was open to all interested individuals to apply, which was a significant step towards achieving transparency.

It was agreed that monitoring of the procurement procedure was effected by external independent entities (mean = 4.35; std dev = 1.041), and that KIWASCO ensured that forensic audits were conducted on the entire procurement procedure (mean = 4.19; std dev = 1.024). Moreover, the respondents generally agreed that the procurement process was both long and bureaucratic (mean = 3.75; std dev = 1.361). However, it was disputed that the firm had adopted electronic procurement (mean = 2.19; std dev = 1.045). The foregoing findings were contrary to the observations made in a study by Makau (2014) that Nairobi Water and Sewerage Company had adopted e-procurement which had improved transparency and accountability in procurement processes.

### **Procurement Requirements**

The study, moreover, examined issues touching on procurement requirements by seeking the opinion of the sampled procurement officers, middle level management and heads of departments in respect to the same. The findings in relation to this are outlined in Table 5.

Table 5: Descriptive Statistics for Procurement Requirements

	n	SA	A	N	D	SD	Mean	Std. Dev.
During procurement planning, KIWASCO assesses its technical requirements	49	24	10	9	3	3	4.18	1.014
KIWASCO considers procurement lead time before contracting suppliers and service providers	49	17	21	8	2	1	4.04	.935
Efficiency of suppliers and service providers is an important factor during procurement planning at KIWASCO	49	16	13	10	6	4	3.63	1.286
The financial capacity of suppliers and service providers is assessed by KIWASCO	49	11	13	9	8	8	3.22	1.403
KIWASCO analyzes experience of suppliers and service providers during procurement planning	49	11	12	11	5	10	3.18	1.439

According to the study findings as shown in Table 5, it was admitted that during procurement planning, KIWASCO assessed its technical requirements (mean = 4.18; std dev = 1.014), and also that the firm considered procurement lead time before contracting suppliers and service providers (mean = 4.04; std dev = 0.935). Even though respondents held diverse views, it was generally agreed that efficiency of suppliers and service providers was an important factor during procurement planning at KIWASCO (mean = 3.63; std dev = 1.286). However, it largely remained unclear regarding the assertions that financial capacity of suppliers and service

providers was assessed by KIWASCO (mean 3.22; std dev = 1.403, and also that the firm analyzed experience of suppliers and service providers during procurement planning (mean = 3.18; std dev = 1.439). The foregoing findings were in spite of the assertion in a past study by Estache and Limi (2008) that, local firms are at times unable to meet the experience and financial requirements to apply for public contracts on sole basis. In other words, both financial capacity and experience were crucial procurement requirements in the public sector.

### **Organizational Performance**

Lastly, the study examined the views of the sampled respondents in respect to performance of KIWASCO. The summary of these views are tabulated in Table 6.

Table 6: Descriptive Statistics for Organizational Performance

	n	SA	A	N	D	SD	Mean	Std. Dev.
There is high degree of satisfaction of internal customers by the procurement department of KIWASCO	49	17	23	7	1	1	4.10	.872
The procurement department is highly cost effective	49	23	11	10	3	2	4.02	1.145
KIWASCO records high percentage on-time supplier deliveries	49	21	9	15	3	1	3.94	1.088
KIWASCO has established reliable and viable mechanisms for cost saving during procurement process	49	21	14	7	3	4	3.92	1.256
The procurement process at KIWASCO is highly efficient	49	17	17	7	4	3	3.88	1.184
The supplier defect rate is relatively low at KIWASCO	49	15	16	13	3	2	3.80	1.080
The procurement process at KIWASCO is relatively short	49	16	13	14	3	3	3.73	1.169

It was observed as indicated in Table 6 that the respondents generally agreed on all issues touching on organizational performance at KIWASCO (mean  $\approx$  4.00). Specifically, it was concurred that there was high degree of satisfaction of internal customers by the procurement department of KIWASCO (mean = 4.10; std dev 0.872); the procurement department was highly cost effective (mean = 4.02; std dev = 1.145); the firm recorded high percentage of on-time supplier deliveries (mean = 3.94; std dev = 1.088); and that the firm had established reliable and viable mechanisms for cost saving during procurement process (mean = 3.92; std dev 1.256). In the same vein, it was admitted that the procurement process at KIWASCO was highly efficient (mean = 3.88; std dev = 1.184). The findings were in contrast to earlier observations that budgeting and other key functions are severely hampered by institutional incapacity across water services value chain which results in inefficiencies (Hollingworth et al., 2011). Moreover, it



was noted that the supplier defect rate was relatively low at the firm (mean = 3.80; std dev = 1.080); and that the procurement process at the firm was relatively short (mean = 3.73; std dev = 1.169).

### Inferential Findings and Discussions

The study investigated the influence of various components or characteristics of procurement planning on performance of KIWASCO. It also analyzed the general effect of procurement on organizational performance. In order to achieve these, both correlation and regression analyses were conducted.

#### ***Relationship between Procurement Planning and Organizational Performance***

The study examined the relationship between the four components of procurement planning and organizational performance using Spearman rank correlation analysis. The components studied as shown in Table 7 included transparency in procurement (TP) and procurement requirements (PR).

Table 7: Spearman Rank Correlation Matrix

			TP	PR	OP
Spearman's rho	<b>Transparency in Procurement</b>	Correlation Coefficient	1.000		
		Sig. (2-tailed)	.		
		n	49		
	<b>Procurement Requirements</b>	Correlation Coefficient	-.016	1.000	
		Sig. (2-tailed)	.915	.	
		n	49	49	
	<b>Organizational Performance</b>	Correlation Coefficient	.390**	.312*	1.000
		Sig. (2-tailed)	.006	.029	.
		n	49	49	49

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

\* . Correlation is significant at the 0.05 level (2-tailed).

The study established that there existed a positive, moderate and statistically significant relationship between transparency in procurement and performance of KIWASCO ( $r = 0.390$ ;  $p < 0.05$ ). More so, the relationship between procurement requirements and organizational performance was revealed to be positive, weak and statistically significant ( $r = 0.312$ ;  $p < 0.05$ ).

The results of the correlation analysis implied that when any of the two facets of procurement planning (transparency in procurement and procurement requirements) was enhanced, the performance of KIWASCO was likely to improve. Compromising the foregoing issues was, on the other hand, likely to weaken the performance of the water and sewerage company. The results further indicated, both transparency in procurement and procurement requirements were strong and substantive influencers of organizational performance.

### **Determinants of Procurement Planning on Organizational Performance**

This section outlines the results and discussions in relation to the determinants of procurement planning process on performance of Kisumu Water and Sewerage Company Limited. The results indicated in Table 8 enabled the understanding of the general relationship between procurement planning and organizational performance and also the extent to which the mentioned planning explains performance of KIWASCO.

Table 8: Model Summary

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.529 <sup>a</sup>	.280	.213	.67065

a. Predictors: (Constant), Transparency in Procurement, Procurement Requirements

The study established that the general relationship between procurement planning and performance of KIWASCO was positive and moderate ( $R = 0.529$ ). The foregoing relationship was further revealed as indicated in Table 9 to be statistically significant ( $F = 4.172$ ;  $p < 0.05$ ). The findings meant that enhancing of procurement planning was likely to significantly improve performance of KIWASCO. Further analysis as shown by the coefficient of determination ( $R^2 = 0.280$ ) indicated that 28.0% of performance of KIWASCO could be explained by the various factors studied under procurement planning. Ideally, there were other factors that could possibly influence the performance of the firm besides the procurement planning. These could have included such factors as efficiency of the human capital, and financial resources to facilitate procurement of goods and services and also to enable smooth operations of the water company. Other factors might have been the management and leadership style. Factors beyond the control of KIWASCO could have also influenced the company's performance. Such factors include regulations by the County Government of Kisumu, and national government's agencies like Water Services Regulatory Board (WASREB) among other factors.

Table 9: ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.506	4	1.877	4.172	.006 <sup>a</sup>
Residual	19.340	43	.450		
Total	26.847	47			

a. Predictors: (Constant), Transparency in Procurement, Procurement Requirements

b. Dependent Variable: Organizational Performance

The study further looked into the precise influence of the determinants of procurement planning, that is, transparency in procurement, stakeholder involvement, budgeting process, and procurement requirements on performance of KIWASCO. The results in relation to this are shown in the regression coefficient table (Table 10).

Table 10: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.417	.888		.469	.641		
Transparency in Procurement	.484	.173	.367	2.801	.008	.978	1.023
Procurement Requirements	.275	.144	.281	1.912	.063	.778	1.286

a. Dependent Variable: Organizational Performance

As shown in Table 10, the results of the collinearity statistics as demonstrated by the variance inflated factor (VIF) showed that the four determinants of procurement planning namely transparency in procurement (VIF = 1.023), and procurement requirements (VIF = 1.384) did not have multicollinearity problems since each returned VIF less than 10. In other words, the influence of each of the named predictor variables on organizational performance was not subject to other independent variables. The results further reinforced the suitability of the regression model illustrated below.

$$Y = \beta_0 + X_1\beta_1 + X_2\beta_2 + \epsilon$$

The above model is interpreted as follows:

$$Y = 0.417 + 0.484\beta_1 + 0.275\beta_2$$

Accordingly, every unit change in performance of KIWASCO was subject to 0.484 unit change in transparency in procurement process, and 0.275 unit change in procurement requirements

while holding other factors represented by 0.417 constant. From these findings, it is imperative to conclude that transparency in procurement was the most important facet of procurement planning process in respect to organizational performance

The results of the t-statistics as shown in Table 10 were employed to address the null hypotheses. According to the findings, the first null hypothesis which had stated that there was no significant influence of transparency in procurement on performance of Kisumu Water and Sewerage Company Limited was rejected ( $t = 2.801$ ;  $p < 0.05$ ). Lastly, the second null hypothesis that stated there was no significant influence of procurement requirements on performance of Kisumu Water and Sewerage Company Limited failed to be rejected ( $t = 1.912$ ;  $p > 0.05$ ).

## SUMMARY

The study observed that KIWASCO ensured that procurement information was shared amongst all interested stakeholders and that the firm ensured that the tendering process was open to all interested bidders. It was noted that monitoring of the procurement procedure was effected by external independent entities. KIWASCO was further found to ensure that forensic audits were conducted on the entire procurement procedure in addition, it was revealed that the procurement process was both long and bureaucratic. Nonetheless, KIWASCO was found not to have adopted electronic procurement. Transparency in procurement was found to be the most important element of procurement planning in respect to its relation with organizational performance.

The study found that during procurement planning, KIWASCO assessed its technical requirements. The study also noted that the firm considered procurement lead time before contracting suppliers and service providers. It was generally observed that efficiency of suppliers and service providers was an important factor during procurement planning at KIWASCO. It was unclear if or not financial capacity of suppliers and service providers was assessed by KIWASCO. It was also uncertain whether the firm analyzed experience of suppliers and service providers during procurement planning or not. Procurement requirements were found to be significantly important in relation to organizational performance.

The study noted that there was high degree of satisfaction of internal customers by the procurement department of KIWASCO. The procurement department was found to be highly cost effective. KIWASCO was found to record high percentage of on-time supplier deliveries and the firm had also established reliable and viable mechanisms for cost saving during procurement process. The study, moreover, observed that the procurement process at KIWASCO was highly efficient and with minimal supplier defect rate. The study also revealed

that the procurement process at the firm was relatively short. Relative to organizational performance, procurement planning was found to be significantly important. Transparency in planning was established to be the only significant facet of procurement planning relative to performance of KIWASCO.

## **CONCLUSIONS**

The study drew the conclusion that information on procurement was shared with interested stakeholders of KIWASCO. It was also concluded that the water and sewerage company conducted an open tendering process. The study also inferred that transparency at KIWASCO was manifested in the forensic audits on the procurement process that the firm facilitated. The study also concluded that the firm had yet to adopt electronic procurement system. Moreover, it was deduced that transparency in procurement was very important towards advancing the performance of the firm.

It was deduced that KIWASCO evaluated its technical requirements during procurement planning. According to the findings, it was concluded that the firm considered a number of factors before contracting suppliers. Some of the key factors that were looked into included procurement lead time and efficiency of the suppliers. However, the study concluded that it remained unclear if or not KIWASCO evaluated the financial capacity and experience of suppliers and service providers before contracting them. Lastly, the study concluded that procurement requirements were of significant importance to the performance of KIWASCO.

## **RECOMMENDATIONS**

In order to promote transparency during procurement, KIWASCO is supposed to invite interested stakeholders. The tendering process for the firm is advised to be open regardless of the magnitude of the goods and/or services intended to be procured. Moreover, it is recommended that besides the procurement process being subjected to forensic audit, KIWASCO should digitize the procurement process. The foregoing initiatives are bound to enhance transparency during procurement.

The study recommends that KIWASCO and other firms in the water and sewerage sector evaluate various strengths and weaknesses of the prospective suppliers and service providers. For instance, it is important and advisable for these firms to examine the financial and technical capacity of these entities. Moreover, the procurement department should assess the experience and capacity of the prospective suppliers and service providers to deliver on time procured goods and services with very minimal rate of defects.

## LIMITATIONS OF THE STUDY

The study faced a few limitations which were, however, addressed. The procurement officers working with the KIWASCO were relatively few and as such the study was obliged to also interview middle level managers and departmental heads with the assumption that they were also conversant with procurement issues and organizational performance. Some of the respondents approached during data collection were not willing to be part of the study. In respect to this limitation, the researcher had sought the consent of the management to be allowed to collect the data. Moreover, the respondents were assured that the study was for academic use only and also that their identity was to remain confidential during and after the study.

## SUGGESTIONS FOR FURTHER STUDIES

According to the conclusions drawn, it is recommended for further studies to be conducted in related areas. It is important to examine how transparency in procurement through open tendering when compared with single sourcing influences performance of the procurement process. It is equally important to examine the role played by each of the key stakeholders during the procurement process and how such impact on the performance of the organization concerned. The study further recommends further investigation into role of budgetary allocation in procurement planning. Lastly, the study recommends further research into the importance of evaluating prospective suppliers and service providers prior to contracting them.

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