

# FACTORS AFFECTING PROCUREMENT PERFORMANCE IN ROAD PROJECTS IN KISUMU COUNTY: A CASE OF KISUMU WEST-SUB COUNTY

<sup>1</sup>Clement Nixon Agwingi Okuku, <sup>2</sup>Professor Oloko M.A

<sup>1</sup>Master of Science in Procurement and Logistics Student, Department of Entrepreneurship, Procurement and Management in the Scholl for Human Resource and Development

<sup>2</sup>Senior Lecturer, COHRED, Jomo Kenyatta University of Agriculture and Technology

---

**Abstract:** This study was conducted to enable county government understand the factors affecting procurement performance in county roads in Kisumu County. The main purpose of this study was to establish factors affecting the procurement performance on road projects in Kisumu County with specific emphasis on Kisumu West Sub-County. The study was guided by four specific objectives: To determine the effect of planning on procurement performance in roads projects in Kisumu West Sub-County, To determine the effect of policy on procurement performance on road projects in Kisumu West Sub-County, To determine the effect of supplier selection on procurement performance in roads projects in Kisumu West Sub-County and To determine the effect of information technology on procurement performance in road projects in Kisumu County. The study involved the theories of integrity and total cost ownership. The study was conducted through survey design. Stratified sampling procedure was used to identify a sample size of 77 from a target population of 500. Data was collected using self-reporting questionnaire. Data was analyzed using multiple regression analysis model and results presented using tables and graphs. The findings were majority of respondent's i.e. 55.3% of the respondents strongly agree that planning affects procurement performance while 38.1% agree that planning affects procurement performance in Kisumu West Sub-County. On the procurement policy minority of respondents i.e. 8.92% strongly agree that policy affects procurement performance in Kisumu West Sub-County it also revealed that 35.9% and 13.85 don't agree and strongly don't agree that policy affects procurement performance in Kisumu West Sub-County, On supplier selection 3.6% strongly agree, 29.25 agree and 40.5% don't agree that supplier selection affects procurement performance in Kisumu West-Sub County, it also revealed that 30.4% strongly agree and 39.4 agree that information technology affects procurement performance in Kisumu West Sub County. Finally 54.6% strongly agree and 38.6% agree that procurement performance affects road projects in Kisumu West Sub-County.

**Keywords:** road projects, procurement performance, information technology.

---

## 1. INTRODUCTION

### 1.1 Research Objectives:

#### 1.1.1 General Objective:

The general objective of the study will be to investigate the factors affecting of procurement of performance on road projects in Kisumu West Sub-county.

#### 1.1.2 Specific objectives:

The research further has been guided by the following specific objectives:

- 1) To determine the effect of procurement planning on the procurement performance in roads projects in Kisumu West Sub County.

- 2) To determine the effect of procurement policy on the procurement performance in roads projects in Kisumu West Sub County.
- 3) To determine the effect of procurement supplier selection on the procurement performance in roads projects in Kisumu West Sub County.
- 4) To determine effect of procurement information technology on procurement performance in road projects in Kisumu West Sub-County

### **1.2 Research Hypothesis:**

The following research questions were used to guide the study:

- 1) Ho<sub>1</sub>:Procurement planning has no statistically significant effect in the performance of procurement in Kisumu West Sub-County
- 2) Ho<sub>2</sub>:Procurement policy has no statistically significant effect in the performance of procurement in Kisumu West Sub-County
- 3) Ho<sub>3</sub>:Procurement supplier selection has no statistically significant effect in the performance of procurement in Kisumu West Sub-County
- 4) Ho<sub>4</sub>:Procurement information technology has no statistically significant effect in the performance of procurement in Kisumu West Sub-County

## **2. LITERATURE REVIEW**

### **2.1 Introduction:**

This chapter on literature review presents the theoretical and empirical review of related literature on the factors affecting procurement performance in road projects in Kisumu West Sub-County County. The sources of literature will include books, journals, articles, and online sources and published studies. The chapter is further divided into the following, theoretical and empirical review, conceptual framework, and a critique of existing literature and finally a summary of the literature review.

### **2.2 Theoretical Framework:**

According to Hale and Napier (2013) theories frame how we look at and think about a research topic. It gives us the concept, provides basic assumptions, and directs us to development of questions and suggestions for us to make sense of data. The researcher is interested in a practical resolution of the problem by researching on it and applying theoretical interpretation in problem-solving. Theories help to develop a research design, refine objectives, and develop realistic and relevant research questions.

#### **2.2.1 Transaction Cost Theory:**

A theory accounting for actual cost of outsourcing, production of products or services including transaction cost, coordination cost and search cost. The inclusion of all costs is considered when making a decision and not just the market place. Transaction cost has traditionally examined customer-supplier relationship in the context of contractual agreements. This enables the development of appropriate strategies, such as long term agreements and alliances, to eliminate the risk associated with contracting uncertainty, limiting the number of instances of bargaining or opportunism and asset specificity. In the context of road procurement road construction decisions, total cost could generate a valuable understanding of the costs associated with coordination,inspection,translation,incentives,transactions and other interactions. (Bowersox &Closs, 2003). Road construction is capital intensive and need a big allocation of funds, these funds have to be accounted for and it is the responsibility of those in procurement department to ensure that they develop mechanism that will ensure the money is used wisely.

#### **2.2.2 Integrity Theory:**

Integrity is the qualification of being honest and having a strong moral principles; moral uprightness. It is generally a personal choice to hold oneself to consistent moral and ethical standards. When dealing in public procurement there are incidences that corruption has taken over from the role of procurement and goods and services procured doesn't meet the required standard, costs inflated and even delays in completion of projects due to non-delivery of product and services due to lack of integrity.

Integrity theory in procurement aims at curbing these vices by ensuring that procurement functions are carried out with integrity, transparency and thus improving on completion thus improving the quality of the product or service procured and even lowering of costs. Transparency and accessibility of general procurement information is key for promoting integrity minimizing waste and preventing corruption. Such information's include specifications, annual procurement plans, business opportunities and contracts awarded as well as procurement statistics. (Van Weele, 2005)

### **2.3 Review of Variables:**

#### **2.3.1 Planning:**

The ultimate goal of procurement planning is coordinated and integrated action to fulfill a need for goods and services or works in a timely manner and reasonable price. Early and accurate planning is essential to avoid last minute, emergency or ill-planned procurement, which is contrary to open efficient and effective and consequential transparent procurement. In addition, most potential savings in the procurement process are achieved by improvement in planning stages. Even in situations where planning is difficult such as emergencies, proactive measures can be taken to ensure contingency planning and better preparedness to address upcoming procurement requests.

Carter et al. (1994) Shehu et al., (2015) & Manley (2008) observes that planning and forecasting is a very important part of procurement. Procurement planning is done at both strategic and operational level. It is important that people involved in procurement planning both understand operational and strategic planning and how they are developed. The development of procurement strategy is normally the responsibility of the senior management of the organization, in particular, the senior manager of procurement i.e. the chief procurement officer.

#### **2.3.2 Policy:**

The best and most successful organizations recognize that they can only prosper in the long term if they satisfy aspirations of their stakeholders; this includes its customers, suppliers, employees, local communities, investors, government, public interest and environmental groups. To satisfy this intense scrutiny and the demands for greater accountability in society, business and other organizations are increasingly recognizing the need to measure, track and report on their social and ethical performance. (Vanter 2007)

These policies are mainly to ensure fair-trading and professionalism on the part of the people carrying out procurement process and suppliers used to provide goods and services. Ethics in any type of procurement is important but is particularly important in road construction sector. Value for money is the core principle underpinning county government procurement, incorporating ethical behavior and the ethical use of resources. The application of the highest ethical standards will help ensure the best achievable procurement outcome. Value for money entails more than just getting the best price, ethics are important when considering value for money. (Zuo et al., 2009)

#### **2.3.3 Supplier Selection:**

Supplier selection is the process by which firms identify, evaluate, and contract with suppliers. The supplier selection process deploys a tremendous amount of a firm's financial resources. In return, firms expect significant benefits from contracting with suppliers offering high value (Harrison & Van Hoek, 2005).

Nowadays companies hope to establish a longer-term working relationship with the suppliers. Therefore, supplier selection is one of the main parts of the decision in supply chain management. Because there are many suppliers with many criteria, so it's impossible to find the best way to evaluate and select suppliers. It is thus important that when selecting suppliers a thorough knowledge and understanding of the expectations from the suppliers is considered in order for the suppliers to meet the business need

Evaluating suppliers is a process that leads to organizations to select their desired suppliers. This process has two main aims which are to reduce costs of evaluating such suppliers; companies basically evaluate suppliers that have a good chance of qualifying for purchasing and procuring from. In this process, companies send experts team to the supplier site and with evaluating different criteria and factors they will do an in-depth evaluation. (Coyle et al., 2004)

#### **2.3.4 Information Technology:**

The effectiveness of information management is central and critical to the successful execution of procurement responsibilities and process. The most important information need relates to customers. The most critical information systems issues are connecting customers, suppliers, and partners. Quality of information in procurement management

depends on three factors, availability of information, and accuracy of information and effectiveness of communication. There are indefinable steps in process of building an effective information system and there are a number of key types of people and processes that are involved. Effective use of available information technologies has had a significant disintermediation which leads to improved supply chain operations. (Coyle et al, 2003).

### 2.3.5 Procurement performance in Road Projects:

There is still a gap reflecting on many aspects of failure and low levels of procurement performance for success in the construction sector despite the well-known strong inter-relatedness between procurement and project management practices, considering procurement as one area from much other management in project management. Many studies reveal that about 70% of roads projects suffer from delay or run over the planned budgets. In the construction field, some management areas have crucial and higher importance to be noticed and addressed by the project manager more than other areas if high levels of success are expected. (Ogunsami, 2013)

## 3. RESEARCH METHODOLOGY

### 3.1 Introduction:

This chapter presents the methodology on the factors affecting procurement performance in road projects within Kisumu County with on Kisumu West Sub-County. It covers the following areas: research design, target population, sample and sampling procedure, description of research instruments, validity and reliability of research instruments, data collection procedure, and data analysis procedure.

### 3.2 Research Design:

Trochim (2006) states that the research design provides the glue that holds the research project together. A design is used to structure the research, to show how all of the major parts of the research project the sample groups, measures, treatments or programs and methods of assignment work together to address the central research questions.

This study adopted qualitative cross-sectional survey research design. The design was chosen because it is useful when describing large population characteristics; it makes use of large samples and thus making the results statistically significant even when analyzing multiple variables. The design enabled a thorough examination of the influence of procurement practice on the performance of County roads in Kisumu County.

### 3.3 Sample Frame:

According to Mugenda (2003) if the sample size is less than 10,000 then the required sample size is smaller and calculation is based at 95% confidence level using Fisher's formula for target population less than 10,000. Adopting Gaussian distribution formula sample for a given study when smaller sample size for small population, the sample size is determined by use of normal approximation to the hyper geometric population distribution is arrived by:

$$n = \frac{Z^2 pq.N}{e^2(N-1) + Z^2 - q}$$

n= the desired sample size,

N=size of the population,

p=proportion in the population estimated to have characteristic being measured. This was estimated to be 50% (0.5)  
q= (1-p) i.e. 1-0.5)

e=the level of acceptance error .for this study this was placed at 0.05.

Z= the standard normal derivation at the required confidence level, in this was placed at 95%

$$n = \frac{0.95^2 0.5(1-0.5) (500)}{0.05^2(500-1) + 0.95^2 \cdot (1-0.5)}$$

n=77

### 3.4 Data Processing, Analysis, and Presentation:

A completed questionnaire was edited for completeness and consistency. The questionnaire was coded to allow for statistical analysis. According to Mugenda (2003), data must be cleaned, coded and properly analyzed in order to obtain a meaningful report. The study utilizes multiple regression model analysis to determine whether a group of variables

together predict a given dependent variable (Mugenda & Mugenda, 2003). The statistical tool allows the researcher to examine multiple independent variables related to dependent variables. Once you have identified how to measure independent variables, the researcher is able to derive most reliable information to make predictions on the dependent variables (Higgins, 2005).

#### 4. RESULTS AND FINDINGS

##### 4.1 Introduction:

In this chapter the researcher presents the findings of the study with main aim of addressing the research objectives. The data from questionnaire were organized coded analyzed and converted into quantitative summary reports for analysis using SPSS version 20. The data was also tested for normality. This resulted to descriptive statistic. Cronbach's alpha was used to determine reliability of the various variables. Quantitative, qualitative and descriptive data were linked to enable elaborate analysis and interpretation of results.

##### 4.2 Demographics Response Rate:

The questionnaires so administered were 77 and 65 were returned which represents a 84.4% response rate and it was deemed fit for the study. The demographics for the study was analyzed and tabulated as below.

**Table 4.1 Demographics**

	Frequency	Percent
<b>Gender</b>		
Male	38	58.5
Female	27	41.5
<b>Age of Respondents</b>		
20-25 years	9	13.8
26-30 years	14	21.5
31-35 years	21	32.3
36-40 years	12	18.5
40 years and above	9	13.8
<b>Academic Qualification</b>		
Certificate	17	26.2
Diploma	25	38.5
Degree	21	32.3
Master	2	3.1
<b>Working Experience in the Sub-County</b>		
Less than 2 years	10	15.4
2- 4 years	9	13.8
5 years and above	46	70.8
<b>Total</b>	<b>65</b>	<b>100.0</b>

Gender, there were 38 males and 27 females which represents 58.5% and 41.5% respectively. This implies the males were more than the females, and is expected in most public offices in Kenya. Age of respondents, the majority are aged between 31-35 years which is 32.3% of the total, followed by 26-30 years which is 21.5%, this implies that a majority of the respondents were young. Following closely is the 36-40 years bracket which is 18.5% of the total, lastly there is a tie between the 20-25 years and 40 years and above age group which both had a 13.8% of the total. This is the group which comprises of the most old and most young respondents.

Academic Qualification, majority (25) had a Diploma certification which is 38.5%, this was followed by those with a degree (21) which is 32.3%. This thus implies that most of the respondents were educated enough to be able to respond to the questionnaire so given to them for the purposes of this study. Those with Certificate were 17 which is a 26.2% of the total; lastly 2 respondents had a Master degree which is 3.1%. On work experience at the Sub-county, most of the respondents (46) had worked for more than five years which is 70.8%. Followed by those who had worked for less than 2 years which were 10 representing a 15.4% of the total and lastly those who had worked between 2-4 years were 9 representing 13.8% of the total. This can be interpreted to mean that the respondents were in the Sub County long enough to be able to give an informed view on the questionnaire so administered.

**4.3 Pilot and Factor analysis Results:**

**4.3.1 Reliability and Validity Analysis:**

**Table 4.2 Reliability Analysis**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.896	.883	46

Against a threshold of 0.7 the study variables had a Cronbach alpha value of 0.896 > 0.7 thereby implying that the questionnaire was a reliable tool for the study and it had the internal consistency required.

**4.3.2 Check for Normality of Data:**

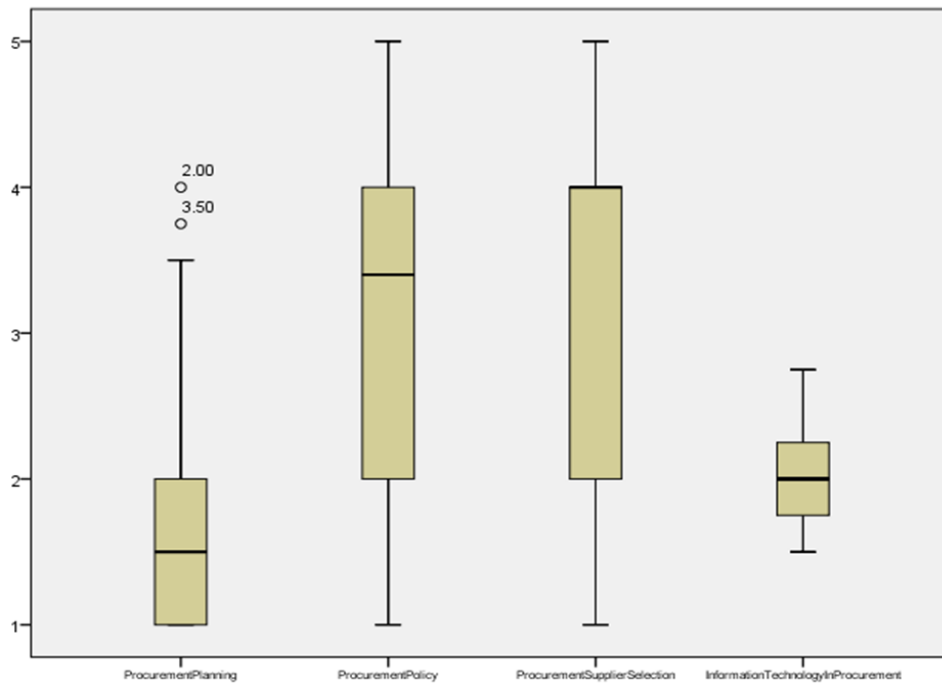
The data was subjected to various tests before the analysis to check whether it was normal so as to enable subsequent analyses. Table 4.3 below shows the Shapiro-Wilk and Kolmogorov-Smirnov tests. Since the variables are 5 < 2000 the Shapiro Wilk test was used and the data was found to be normally distributed because the p-values for all the dependent variables were less than 0.05 at 5% level of significance

**Table 4.3 Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Procurement Planning	.241	65	.000	.775	65	.000
Procurement Policy	.175	65	.000	.925	65	.001
Procurement Supplier Selection	.275	65	.000	.862	65	.000
Information Technology In Procurement	.207	65	.000	.892	65	.000
Procurement performance	.268	65	.000	.780	65	.000

a. Lilliefors Significance Correction

Subsequent test for normality were also done, with the box-plot shown in Figure 4.1 below revealing that the data was symmetrical for all the four variables. The symmetry of data, is a confirmation of normality of data.



**Figure 4.1 Box-Plots for the dependent variables**

Observing the detrended normal Q-Q plot for the Procurement Planning variable (picked arbitrarily) from the same analysis, shown in Figure 4.2 below a clear 'S' pattern which is also a confirmation of the normality of data.

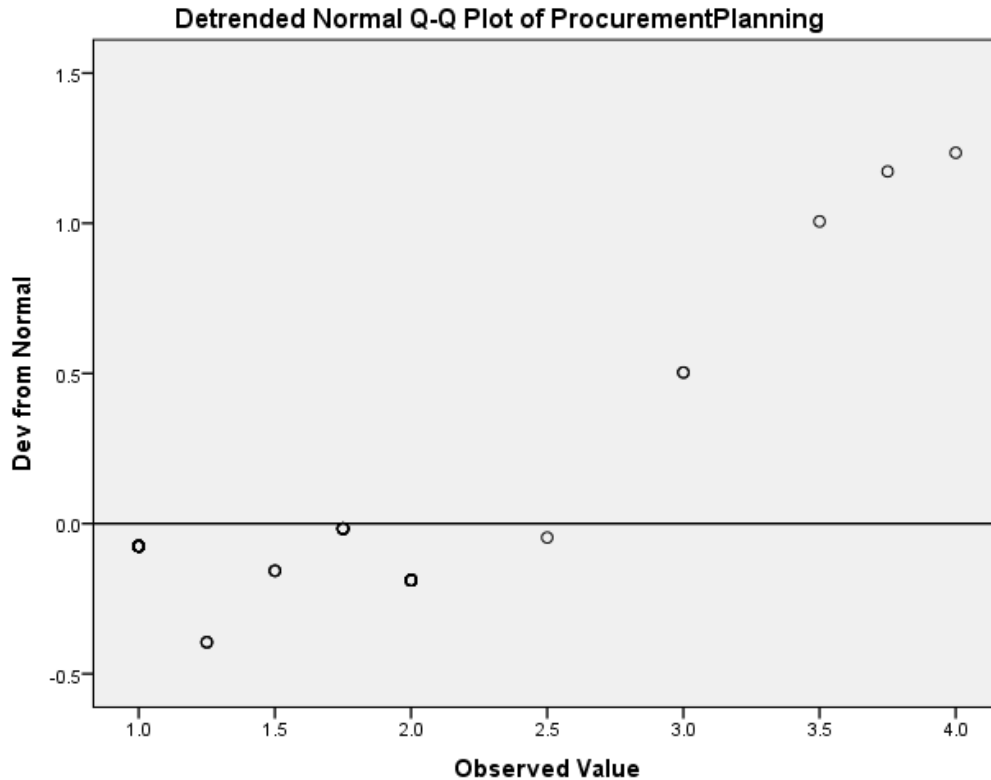


Figure 4.2 Detrenched Normal Q-Q plot of procurement planning

After coding of the data in SPSS, it was necessary to check for normality of the data. The data was found to be normal. This was done by using box-plots, detrended Q-Q plots and Shapiro Wilk test for normality. All these tests concluded the same thing. Having established that the data is normal, parametric tests were then conducted.

#### 4.4 Demographic Analysis:

##### 4.4.1 Procurement Planning:

The respondents were asked to what extent procurement planning measurement affects procurement performance in road construction within Kisumu West Sub-County. The likert scales are explained thus; SA- Strongly Agree, A-Agree, N- Neutral, D- Disagree, SD- Strongly Disagree. Their answers were varied and tabulated in Table 4.4 below;

Table 4.4 Procurement Planning

Procurement Planning	SA	A	N	DA	SD
Design Changes	56.9%	35.4%	1.5%	3.1%	3.1%
Inadequate involvement of other professional during road design stage	56.9%	38.5%	1.5%	1.5%	1.5%
Poor level of commitment to quality improvement among design professional	52.3%	38.5%	1.5%	4.6%	3.1%
Making design decision based on cost not value of work	55.4%	40.0%	1.5%	1.5%	1.5%

In the procurement planning, 56.9% of the respondents strongly agreed that design changes were an important facet towards procurement planning, while 35.4% agreed on the same those who were neutral and those that disagreed had a combined total of 7.7%. 56.9% of the respondents strongly agreed that there was inadequate involvement of other professional during road design stage and 38.5% agreed on the same factor. The rest had a combined total of 4.5%. On the poor level of commitment to quality improvement among design professional, 52.3% of the respondents strongly agreed, while 38.5% agreed while the rest had a combined total of 9.2%. On making design decisions based on cost 55.4% of the respondents strongly agreed. 40.0% agreed and the rest had a total of 4.5%.The respondents were then asked the challenges affecting procurement planning and their varied responses were tabulated and explained in Table 4.5

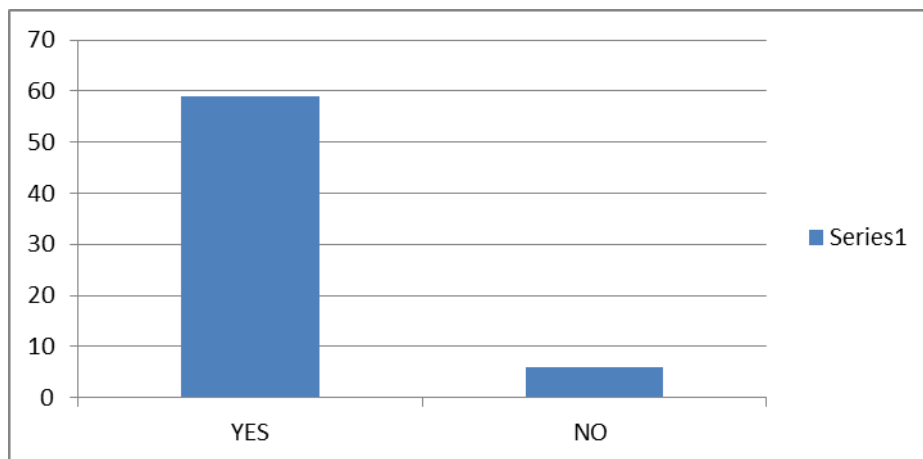
**Table 4.5 Challenges in Procurement Planning**

	Mean	Standard Deviation
Poor and labor intensive technologies	1.46	0.533
Low skilled and inexperienced personnel	1.49	0.534
Lack of enough capital to acquire technological inputs	1.43	0.529

The challenge with the highest mean is the low skill and inexperienced personnel, with a value of 1.49 implying it has more weight in the challenges in procurement planning and its standard deviation of 0.534 indicating that it was the farthest from the overall mean. Secondly the other challenge next was poor and labor intensive technologies which had a mean of 1.46 showing that its preference is ranked second, its standard deviation stands at 0.533 meaning that the sub-factor is second nearest to the overall mean. Lastly, the lack of enough capital to acquire technological inputs had the least mean of 1.43 implying it's the least challenge in the challenges in procurement and also had the least standard deviation showing that it was nearest to the mean.

**4.4.2 Procurement Policy:**

The respondents were asked whether the rules and regulations affected procurement performance road projects in Kisumu West Sub-County. Based on a duality of responses Yes and No the following figure was obtained;



**Figure 4.3 Rules and Regulations affecting procurement performance**

The responses were varied but precisely 59 respondents asserted to the affirmative that indeed the rules and regulations affected performance procurement. 6 respondents said that the rules and regulations did not affect procurement performance.

The respondents were asked to indicate they agreed on procurement policy in regard to legal environment with to its application in procurement performance in road projects cost in Kisumu West Sub-County: Key (SA) Strongly Agree (A) Agree (N) Neutral (DA) Disagree (SD) Strongly Disagree and the results were tabulated as below;

**Table 4.6 Procurement Policy**

Procurement Policy	SA	A	N	DA	SD
Kisumu West sub county has been enjoying good legal environment thus no inflation of road projects costs.	6.2%	31.7%	10.8%	36.9%	15.4%
Kisumu West sub county has been experiencing a poor legal environment thus jeopardizing the performance of roads projects.	7.7%	32.3%	12.3%	33.8%	10.8%
Legal environment has led to better understanding of procurement management making it possible to procure more projects that satisfy sub county needs	9.2%	29.2%	13.8%	33.8%	13.8%
Legal environment has created an opportunity to improve procurement and correct any challenges that is not within terms agreed in the project contract through imposing penalty	9.2%	32.3%	4.6%	38.5%	15.4%
Kisumu West sub-county has always lost money on unnecessary procurement projects due to poor legal environment.	12.3%	33.8%	3.1%	36.9%	13.8%



From the questionnaire so administered 6.2% strongly agreed that Kisumu West sub county has been enjoying good legal environment thus no inflation of road projects costs, while 31.7% agreed, 10.8% were neutral and a combined 52.3% disagreed on the same. This implied that there was no good legal environment to thwart inflation of road project costs. 7.7% strongly agreed that Kisumu West sub county has been experiencing a poor legal environment thus jeopardizing the performance of roads projects while 32.3% agreed, 12.3% were neutral and a combined 44.6% disagreed. This can be interpreted to mean that there was no clear cut postulate on whether there was a poor legal environment.

Further, 9.2% strongly agreed that legal environment has led to better understanding of procurement management making it possible to procure more projects that satisfy sub county needs, 29.2% agreed, while 13.8% were neutral, a combined 47.6% disagreed on the same. This means that the legal environment has not led to the better understanding of procurement management. Also, 9.2% strongly agreed that the legal environment had created an opportunity to improve procurement and correct any challenges that is not within terms agreed in the project contract through imposing penalty, 32.3% agreed, 4.6% were neutral and a combined 53.9% disagreed on the same. This can be interpreted to mean that, most respondents asserted that the legal environment had not created an opportunity to improve procurement. Finally, 12.3% strongly agreed that Kisumu West sub-county has always lost money on unnecessary procurement projects due to poor legal environment, 33.8% agreed on the same, 3.1% were neutral and 50.7% disagreed on the same. This means that there was no direct consensus whether the Sub-County had lost money on unnecessary procurement projects.

**4.4.3 Procurement Supplier Selection:**

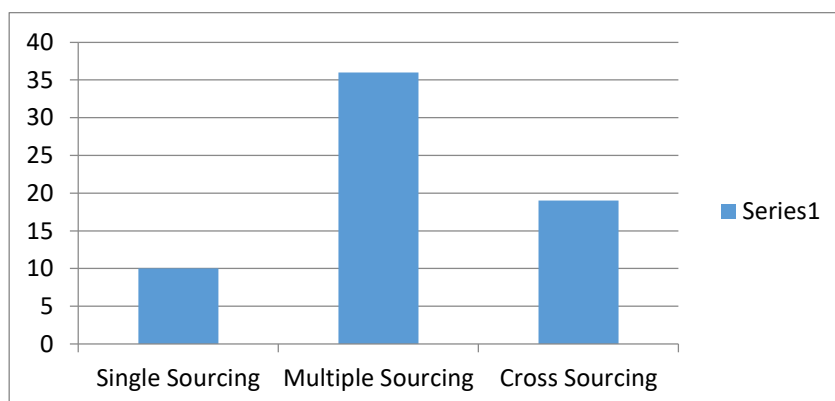
The respondents were asked to indicate they agreed on procurement supplier selection in regard to legal environment with to its application in procurement performance in road projects cost in Kisumu West Sub-County: Key (SA) Strongly Agree (A) Agree (N) Neutral (DA) Disagree (SD) Strongly Disagree and the results were tabulated as below;

**Table 4.7 Procurement Supplier Selection**

Statement	SA	A	N	DA	SD
Supplier selection process is fair and gives every supplier a chance to compete for the road projects	4.6%	29.2%	9.2%	41.5%	15.4
There is equal participation of all stakeholders in road projects in Kisumu West Sub -County	3.1%	29.2%	10.8%	40.0%	16.9%
There is good supplier relationship method leading to the completion of road projects on time, improving on quality and reduction in costs	3.1%	29.2%	10.8%	40.0%	16.9%

On procurement supplier selection, 4.6% strongly agreed that supplier selection process is fair and gives every supplier a chance to compete for the road projects, 29.2% of the respondents agreed, 9.2% were neutral and a combined 56.9% disagreed. This implies that a majority asserted that the selection process isn't fair and hence doesn't give every supplier a chance for the road projects. 3.1% strongly agreed that there is equal participation of all stakeholders in road projects in Kisumu West Sub –County, 29.2% of the respondents agreed, 10.8% were neutral and a whopping 56.9% disagreed. This indicates that there is no equal participation of all stakeholders in road projects. 3.1% strongly agreed that there is good supplier relationship method leading to the completion of road projects on time, improving on quality and reduction in costs, 29.2% of the respondents agreed, 10.8% were neutral and a 56.9% majority disagreed. This indicates that there was no good supplier relationship method that can lead to completion of road projects on time.

The respondents were asked on the methods of supplier selection that could help improve on the procurement performance in road projects in Kisumu West Sub-County and the responses were presented in graph as below;



**Figure 4.4 Methods of Supplier Selection**

Single sourcing had 10 respondents meaning it was the least preferred method of supplier, followed by cross sourcing which had 19 respondents. Multiple sourcing had a majority of the respondents that is 36, showing that it was the most preferred method of supplier selection.

**4.4.4 Information Technology:**

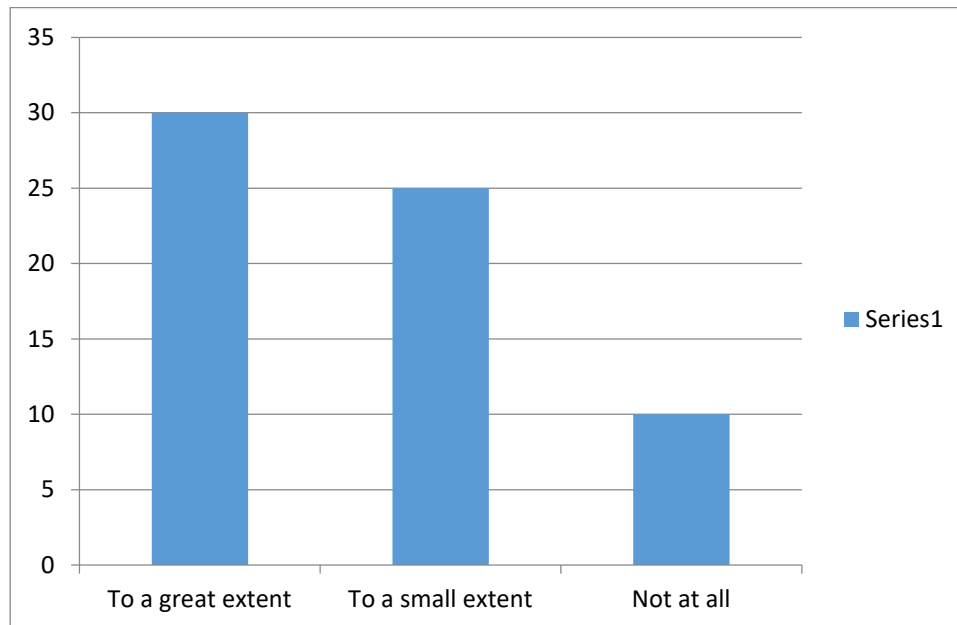
The respondents were then asked to indicate whether they agreed with various statements on procurement performance information technology that should be put in place in improving of Road projects in Kisumu West Sub-County and the responses were tabulated as follows;

**Table 4.8 Information Technology in procurement performance**

Statement	SA	A	N	DA	SD
Involvement of locals in road E-tendering	15.4%	30.8%	46.2%	7.6%	-
Involvement of E-procurement in tendering	30.8%	46.2%	23.1%	-	-
Creation of transparency in tendering process	44.6%	46.2%	9.2%	-	-
Provides an avenue for continuous tracking of road projects success	30.8%	35.4%	33.8	-	-

On involvement of locals in road E-tendering, 15.4% of the respondents strongly agreed, 30.8% agreed and 46.2% were neutral and a paltry 7.6% disagreed. This indicates that a majority agreed that there was involvement of the locals while a similar majority was neutral. On involvement of E-procurement in tendering 30.8% strongly agreed, 46.2% agreed and 23.1% were neutral. This means that E-procurement was involved majorly in the tendering process. On creation of transparency in tendering process, 44.6% strongly agreed, 46.2% agreed and 9.2% of the respondents were neutral. This implies that a whopping majority of the respondents asserted that there was transparency in the tendering process. On whether the Sub-county provides an avenue for continuous tracking or road projects success, 30.8% strongly agreed, 35.4% agreed and 33.8% were neutral. Therefore Kisumu Sub-County provides an avenue for continuous tracking or road projects success.

The respondents were also asked to what extent the poor application of Information Technology has affected the overall procurement performance in road projects in Kisumu West Sub-County. The responses were varied and graphed as here-below;



**Figure 4.5 Extent of poor application of Information Technology**

On this, 30 respondents asserted that to a great extent there was poor extent application of information technology affected negatively the overall procurement performance in the sub-county. 25 respondents asserted that to a small extent, while 10 said not all is there poor application of information technology.

**4.5 Procurement Performance:**

**4.5.1 Procurement performance Practices:**

The respondents were asked to indicate their level of agreement with some various statements in relation to procurement performance practices interventions that should be put in place in improving performance of road projects in Kisumu West Sub-County and the varied results were tabulated as below;

**Table 4.9 Procurement performance Practices**

Statement	SA	A	N	DA	SD
Involvement of locals in road tendering	56.9%	40%	3.1%	-	-
Involvement of E-procurement in tendering	50.8%	43.1%	6.2%	-	-
Creation of close relationship with road contractors	52.3%	36.9%	3.1%	1.5%	6.2%
Provides an avenue for continuous tracking of road projects success	58.5%	38.5%	-	1.5%	1.5%

On involvement of locals in road tendering, 56.9% of the respondents strongly agreed, 40% agreed and a paltry 3.1% were neutral. This implies that all the respondents agreed that locals should be involvement of locals in road tendering. On involvement of E-procurement in tendering 50.8% strongly agreed, 43.1% agreed and 6.2% were neutral. This indicates that most respondents agreed that e-procurement should be involved in tendering. On creation of close relationship with road contractors, 52.3% strongly agreed, 36.9% agreed, 3.1% were neutral and a combined 7.7% of the respondents disagreed. This implies that a whopping majority of the respondents asserted that there was need to create a close working relationship with road contractors. On whether the Sub-county should provide an avenue for continuous tracking or road projects success, 58.5% strongly agreed, 38.5% agreed and a combined 3% disagreed. Therefore Kisumu Sub-County provides should provide and enhance an avenue for continuous tracking or road projects success.

**4.5.2 Procurement Management Strategy:**

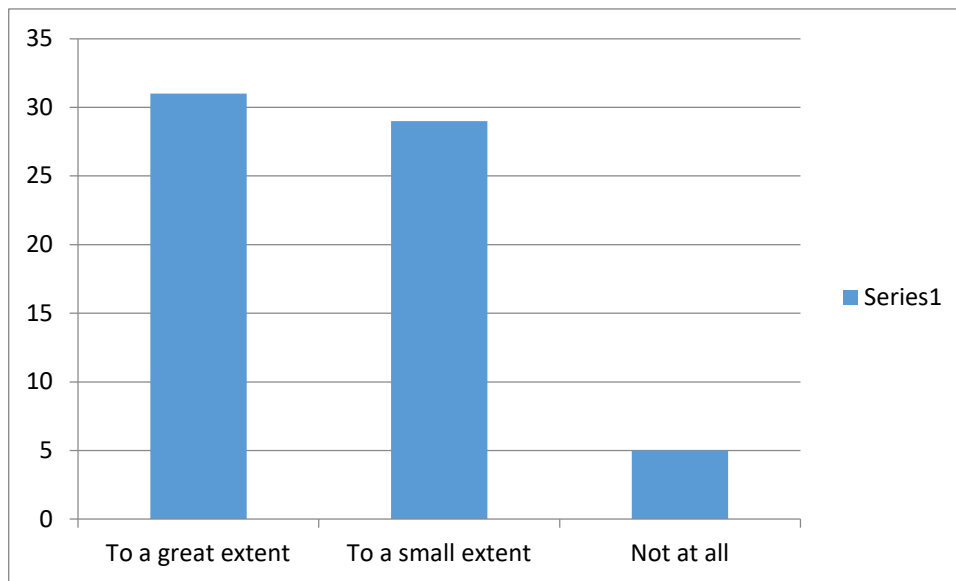
The respondents were asked to indicate their level of dissatisfaction on the procurement strategies that are commonly applied in Kisumu West Sub-county and the results were as tabulated below;

**Table 4.10 Procurement Management Strategy**

Statement	SA	A	N	DA	SD
Increased on spend consolidation	15.4%	32.3%	23.1%	21.5%	7.7%
Reduction of purchase price	15.4%	33.8%	18.5%	23.1%	9.2%
Shortening of cycle time	13.8%	32.3%	20.0%	24.6%	9.2%
Improvement on investment proposal and project expansion	20.0%	30.8%	18.5%	23.1%	7.7%
Reducing number of suppliers	21.5%	32.3%	10.8%	27.7%	7.7%

Increases on spend consolidation as a strategy got varied responses, 15.4% were strongly satisfied that by that strategy, 32.3% were satisfied, 23.1% were neutral and a combined 39.2% were dissatisfied. This implies that a majority were satisfied with the increased on spend consolidation strategy applied in Kisumu West Sub-County. On reduction of purchase price strategy, 15.4% were strongly satisfied, 33.8% were satisfied, 18.5% were neutral and a combined 32.3% were dissatisfied. This indicates that majorly the respondents were satisfied with the reduction of purchase strategy as used in the Sub-County. In terms of shortening of cycle time, 13.8% were strongly satisfied, 32.3% were satisfied, 20.0% were neutral and a combined 33.8% were dissatisfied. This can be taken to imply that most respondents were satisfied with the shortening of the cycle time.

In terms of improvement on investment proposal and project expansion, 20% were strongly satisfied with the strategy, 30.8% were satisfied, 18.5% were neutral and a combined 30.8% were dissatisfied. This means that improvement on investment proposal and project expansion strategy got a nod from the respondents as majority was satisfied. On reducing the number of suppliers, 21.5% were strongly satisfied, 32.3% were satisfied, 10.8% were neutral and a combined 35.4% were dissatisfied. This implies that reducing the number of suppliers in Kisumu West Sub-County was given the nod by the respondents as a majority was satisfied with that strategy. The respondents were also asked to what extent poor application of the above strategies affected negatively the overall procurement performance in Kisumu West Sub-county and the results were graphed here-below;



**Figure 4.6 Extent of Poor Application of Procurement Management Strategies**

The extent of poor application of procurement management strategies negatively affecting the overall performance of performance procurement in the sub-county got varied responses. 31 of the respondents said to a great extent, 29 respondents said to a small extent and 5 respondents dismissed the postulate. This can be interpreted to mean that a majority believed that poor application of procurement management strategies negatively affected the overall performance of performance procurement in Kisumu West sub-county.

#### 4.5.3 Application of Procurement Practices:

The respondents were asked whether various procurement practices had an effect on the performance of road projects in Kisumu West Sub-County. The responses were tabulated as below;

**Table 4.11 Application of Procurement Practices**

Statement	SA	A	N	DA	SD
High levels of procurement performance practices have improved road projects in Kisumu West Sub-County	9.2%	50.8%	29.2%	10.8%	-
Procurement performance practices has enabled Kisumu West Sub-County to improve life and travel time of the residents	9.2%	53.8%	4.6%	24.6%	7.7%
Effective application of procurement performance has enabled Kisumu West Sub-County to increase its productivity for the residents	10.8%	52.3%	3.1%	24.6%	9.2%
Procurement performance has enabled Kisumu West Sub-County to improve its competitive advantage and performance through cost, quality and time to other Sub-Counties	24.6%	52.3%	18.5%	3.1%	1.5%

The High levels of procurement performance practices have improved road projects in Kisumu West Sub-County got varied responses 9.2% strongly agreed, 50.8% agreed, 29.2% were neutral and 10.8% of the respondents disagreed. This implies the practice was generally acceptable in the sub-county. A look at the procurement performance practices having enabled Kisumu West Sub-County to improve life and travel time of the residents, 9.2% strongly agreed, 53.8% agreed, 4.6% of the respondents were neutral and a combined 32.3% disagreed. Here the majority accepted this practice. On effective application of procurement performance having enabled Kisumu West Sub-County to increase its productivity for the residents 10.8% strongly agreed, 52.3% agreed, 3.1% were neutral and a combined 33.8% were in disagreement. This meant a majority agreed on this postulate.

Procurement performance having enabled Kisumu West Sub-County to improve its competitive advantage and performance through cost, quality and time to other Sub-Counties, 24.6% strongly agreed, 52.3% of the respondents agreed, 18.5% were neutral and a combined 4.8% disagreed. This can be interpreted to mean that this postulate holds in the Sub-County. The respondents were then asked the extent with which they accepted that these practices have achieved the overall goals in terms of time, cost and quality. The responses were graphed as here-below;

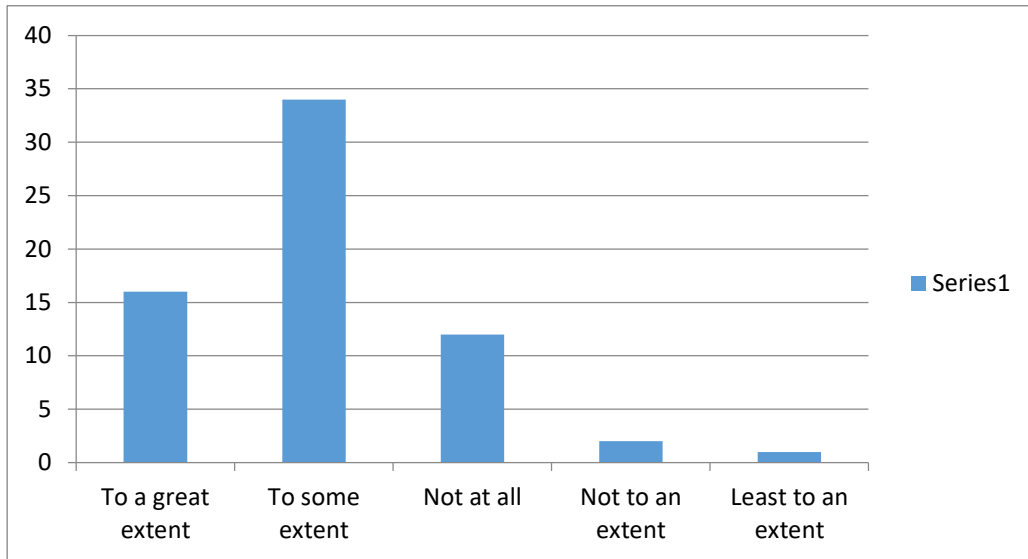


Figure 4.7 Extent to which Procurement Practices achieved overall goals

Generally, the respondents concluded that the practices achieved the overall goals of time, cost and quality. This can be attributed to the responses that 16 asserted to a great extent and 34 to some extent which are a majority (50). 12 disagreed, while 3 asserted that there was some achievement somewhat.

#### 4.6 Tests of Hypothesis for the Independent Variables:

In line with the study objectives, hypotheses were formulated and tested for all the objectives and the resultant table presented as below

Table 4.12 Tests of Hypothesis

		Sum of Sq	df	Mean Sq.	F	Sig
Procurement Planning	Between Groups	11.163	9	1.240	3.230	.103
	Within Groups	21.122	55	.384		
	Total	32.285	64			
Procurement Policy	Between Groups	12.669	9	1.408	1.036	.424
	Within Groups	74.713	55	1.358		
	Total	87.382	64			
Procurement Supplier Selection	Between Groups	15.316	9	1.702	1.311	.252
	Within Groups	71.378	55	1.298		
	Total	86.694	64			
Information Technology In Procurement	Between Groups	.828	9	.092	.695	.710
	Within Groups	7.281	55	.132		
	Total	8.110	64			

At 0.05 p-value level of significance, the researcher fails to accept all the null hypotheses as they are all greater than 0.05, thereby the researcher concluded that the all the independent variables affected the dependent variables. This warranted the researcher to carry out Regression Analysis.

#### 4.7 Regression Analysis:

To determine the level of variance of the dependent variable (procurement performance) that has been caused by the independent variables the model summary was generated and presented as below;

Table 4.13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.560 <sup>a</sup>	.313	.268	.57494	2.118

The value of R-square implies that 31.3% of the total variance of level of procurement performance is explained by the model. This means that 68.7% of the total variance of level of procurement performance cannot be explained by the model. The Durbin-Watson value of 2.118 is less than 7 meaning there was no autocorrelation in the study variables.

**4.7.1 Analysis of Variance of the Study Variables:**

The ANOVA table was generated from the Analysis and is as below;

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.055	4	2.264	6.849	.000 <sup>b</sup>
Residual	19.833	60	.331		
Total	28.888	64			

The table above clearly shows that the ratio of regression to residuals is positive, implying there was a significant relationship between the dependent and independent variables used in the study. From the ANOVA above, it was established that information technology in procurement, procurement planning, procurement policy and procurement supplier selection affected procurement performance. Since  $0.000 < 0.05$  at 5% level of significance. Thereby the null hypotheses are all rejected and the alternative hypotheses accepted. This implies these were factors that influenced procurement performance in Kisumu West Sub-County

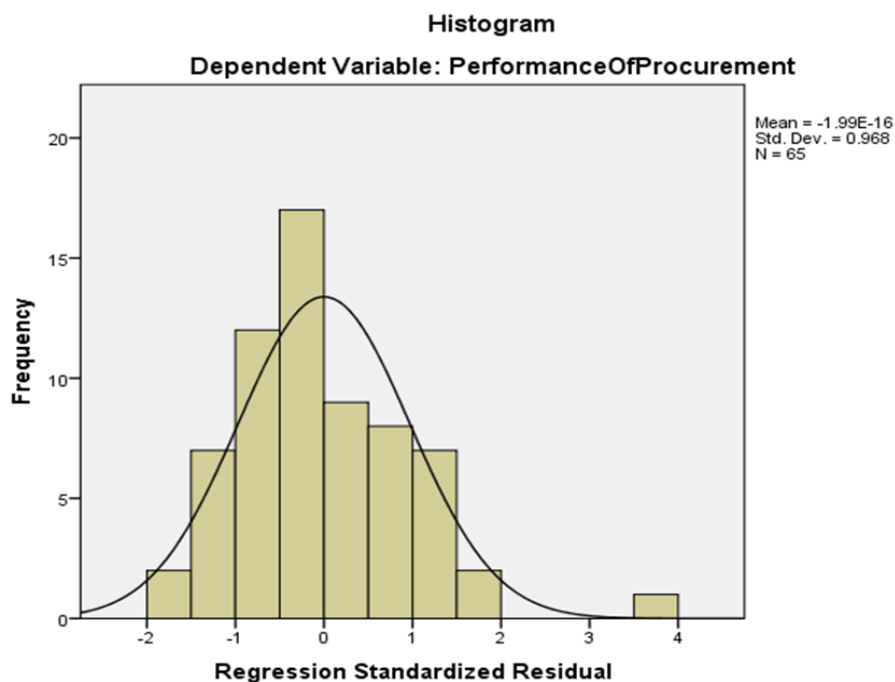
Table Co-efficients of the Regression Model

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Model
	B	Std. Error	Beta		
(Constant)	.168	.457		.368	.714
Procurement Planning	.467	.103	.494	4.517	.000
Procurement Policy	-.112	.071	-.194	1.578	.120
Procurement Supplier Selection	.090	.072	.156	1.247	.217
Information Technology In Procurement	.358	.207	.190	1.731	.089

The regression equation is as shown below

$$Y = 0.168 + 0.467X_1 - 0.112X_2 + 0.090X_3 + 0.358X_4$$

When the independent variables are all zeros, this means that procurement performance will be at 0.168 units. When procurement planning increases by one unit, procurement performance increases by 0.467 units. When procurement policy increases by one unit, the procurement performance decreases by 0.112 units. When procurement supplier selection increases by one unit, procurement performance increases by 0.90 units and finally when information technology in procurement increases by one unit procurement performance increases by 0.358.



**Figure 4.8 Histogram of the Regression Residuals**

Here is a plot of the residuals versus predicted Performance Procurement. The pattern show here indicates no problems with the assumption that the residuals are normally distributed at each level of performance procurement and constant in variance across levels of performance procurement.

## **5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction:**

This chapter focused on the summary of the findings, study conclusion, recommendations and key areas of further research

### **5.2 Summary of Findings:**

The questionnaires so administered were 77 and 65 were returned which represents a 84.4% response rate and it was deemed fit for the study. On demographics, the male were more than the females, and is expected in most public offices in Kenya and there comprises of the most old and most young respondents. More of the respondents were educated enough to be able to respond to the questionnaire so given to them for the purposes of this study. The respondents were in the Sub County long enough to be able to give an informed view on the questionnaire so administered.

The questionnaire had a Cronbach Alpha of 0.896 > 0.7 implying that the questionnaire was a reliable tool for the study and it had the internal consistency required. The data was subjected to normality tests and the data was found to be normal, as all values in the Shapiro-Wilk test were found to be significant. Other subsequent tests proved normality of the data.

#### **5.2.1 Procurement Planning:**

Majority of the respondent's i.e. 56% of the respondents strongly agree that procurement planning affect procurement performance while 38% agree that procurement planning affect procurement planning. Therefore the feeling among the respondents is that procurement planning affect procurement performance and as such should be considered in roads projects construction in Kisumu west Sub-County.

#### **5.2.2 Procurement Policy:**

Majority of the respondents i.e. 36% don't agree that procurement policy affect procurement performance in road construction while 33% agree that procurement policy affect procurement performance in road construction and finally 14% strongly disagree that procurement policy affect procurement performance in roads construction. Road construction in Kisumu West Sub-County should thus strive to improve in procurement policy in regards to roads construction.

#### **5.2.3 Procurement Supplier Selection:**

From the findings it is clear that 40% don't agree that procurement supplier selection affect procurement performance in roads construction, while 29% agree that supplier selection procurement performance in roads construction and finally 16% strongly disagree that supplier selection affect procurement performance in roads construction. The above findings stress the importance of transparency and openness in selection of suppliers in procurement performance in roads construction in Kisumu West Sub-County.

#### **5.2.4 Procurement Information Technology:**

From the findings 40% strongly agree that procurement information technology affects procurement performance, 39% agree that procurement information technology affects procurement performance in roads construction and 28% are non-committal on procurement information technology in roads construction. This shows that procurement information technology affects procurement performance in roads construction and should be improved and adopted extensively in roads construction in Kisumu West Sub-County road construction.

### **5.3 Conclusions:**

Procurement planning is an integral part of success for road construction and thus when constructing the roads within the county should be a factor that is considered as without planning then the whole process will be bound to fail. Proper planning and having the mechanism in place to ensure the success of the project is an important part of the success of the roads projects within Kisumu West Sub County.

Procurement policy is equally important in the performance of procurement in road construction and should be seriously considered for the success of the road projects. Policy guide on how well the ethical issues regarding the performance of procurement will be guided. Road construction is expensive and plays an important role in the economy. It is however where if checks and balances are not put in place then there will be delays in the completion of the projects either due to poor work done at an exaggerated cost. Policy thus plays an important role in the performance of procurement and thus mechanisms that guides against procurement vices should be put in place. However not all respondents agree that policy aids in procurement performance and hence this gap need to be filled.

Supplier selection plays an important role in the procurement performance and ensures that only qualified suppliers are selected for the road construction as shown by respondents in Kisumu West Sub County. With many suppliers available background check is important to ensure that those suppliers selected meet the required condition for the road projects. By choosing wrong suppliers it will be difficult to manage the roads projects and measure procurement performance as there will be issues to deal with inflated prices, delayed work and even poor quality of work done. This can be avoided by vetting of the suppliers and only working with those that meet the project laid down conditions.

With the advancement of technology, there is need for adoption of technology in road construction as it will improve on the procurement performance by ensuring transparency in the bidding process compress project lead times and eliminate corruption in the road construction sector. There is need for Kisumu West Sub County to invest in information technology by integrating the core functions within the County that will make it possible for online bidding. This adoption of information technology will then help in the improvement of the procurement performance as shown by the respondents in Kisumu West Sub County.

#### **5.4 Recommendations:**

Kisumu Sub-County should put more adequate measures on the procurement planning of road projects to ensure that they finish their road projects on time and help in improving procurement performance.

Kisumu West Sub-County should put strict measures when it comes to policy to help curb any loophole that may be used by corrupt individual in regards to roads construction and thus help in improving the performance of procurement.

Kisumu Sub County should have fair and transparent supplier selection in road construction process that will ensure confidence in contractors without favor which will improve confidence of suppliers and procurement performance.

Kisumu Sub County should adopt and interface their procurement process with contractors to help in reducing of the bidding process and thus help improve procurement performance within the county

#### **5.5 Areas for further Research:**

More studies can be done in other jurisdictions to ascertain whether the same or different results may be obtained. The study also recommends that Kisumu West Sub-County uses the findings of this study to guide them in policy making and running their departments affected herein.

### **REFERENCES**

- [1] Apiyo, R. & Mburu, D, K.(2014)Factors affecting Procurement Planning in County Governments in Kenya: A Case of Nairobi City County, *Internal Journal of Economics, Commerce and Management*, 17(17):2348-2386
- [2] Weele, A. J. (2005). *Purchasing and supply chain management: analysis, strategy, planning and practice*. London: Thomson
- [3] Asian Development Bank (2002), Impact of rural roads on poverty reduction: A case study based analysis
- [4] Shehu, A. Y. (2009) Investigating of factors affecting rural roads maintenance: The case of Sokoto state, Nigeria
- [5] Bing, J. A. (1994) Fundamentals Principles of Project Cost Management
- [6] Bing, L. Akintoye, J. & Hardcastle, C., (2005), Perceptions of positive and negative factors influencing the attractiveness of PPP/PFR procurement for construction projects in the UK: Findings from a questionnaire survey, *Engineering, Construction and Architectural Management*, 12(2):125-148
- [7] Bowersox, D, J. & Closs, D. S. (1996). *The Integrated Supply Chain Process, Logistical Management*. McGraw-Hill INTERNATIONAL EDITION



- [8] Bowersox, J. B. Closs, J. D. & Cooper, M. B. (2002) Supply Chain Logistics Management; McGraw-Hill, New York.
- [9] Carl, E.M. Theoretical foundation for analyzing procurement of IS in public sector
- [10] Carter, R., Melnyk, P. & Handfield, S.A (1994) *Identifying sources of cycle time reduction*, Quorum, Texas
- [11] Chartered Institute of Building (CIB) 2010
- [12] Chelagat, K. R. & Kwasira, J. (2015) Positioning of Procurement Functions and its Influence on Services Delivery: A Case of Elgeiyo Marakwet County, Kenya; *International Journal of Research in Business and Management* 3(10):77-88
- [13] Cherop, J. P. (2016) Procurement Practices Influencing Project Implementation in Public Institutions in Kenya: A Case of Kenya Electricity Generating Company; *International Journal of Business and Management*, 18(5):47-71
- [14] Cheung, E., Chan, P. C. & Kajewski, S. (2010) The researcher's perspective on procuring public works, *Structural Survey*, 28(4):300-313
- [15] Chimwani, I.B., Iravo, A. & Tirimba, I.O. (2014) Factors Affecting Procurement Performance in Kenya Public Sector; A Case of State Law Office; *International Journal of Innovation and Applied Studies*, 9(4):1626-1650
- [16] Christopher, M. (2005) *Logistics and Supply Chain Management, Creating Value Adding-Networks* (p43-74). Prentice Hall, 3rd Edition
- [17] Coyle, J., Bardi, E. & Langley Jr, C. (2004). *The Management of Business Logistics* (.p 114-145). Southwestern Thomson Learning 7th Edition
- [18] Cox, A. & Townsend, M. (1997) Latham as a half-way house, a relational competence approach to better practice in construction procurement, *Engineering, Construction and Architectural Management*, 4(2):143-158
- [19] Department of Environment, Transport and the Regions (2000) *A better quality of life: Strategy for sustainable development for the United Kingdom* (cm 4345), The stationary, London
- [20] Dylick, T. & Hockerts, K. (2002) *Beyond the business case for corporate sustainability: Business Strategy and Environment*, 11: 130-141
- [21] Czurchry, J. & Yasin, M. (2003) Managing the project management process, *Industrial Management and Data Systems*, 103(1):39-46
- [22] El-Haram, M. A. & Agapiou, A. (2002) The role of the facility manager in new procurement routes, *International Journal of Managing Projects in Business*, 2(3):370-400
- [23] Elkington, J. (1997) *Cannibals with Forks: The Triple Bottom Line of 21<sup>st</sup> Century Business*. Oxford: Capstone Publishing.
- [24] Erickson, E. & Westberg, M. (2013) Effects of Cooperative Procurement Procedures on Construction Project Performance: A Conceptual Framework, *International Journal of Project Management*, 21:197-208
- [25] Erickson, P. & Vennastrom, A. (2009) Effects of Procurement on Project Performance: A Survey of Swedish Construction Clients.
- [26] Fawcet, E. S. (2005) *Achieving Supply Chain Alignment; Benefits, Barriers and Bridges*
- [27] Flynn, A. & Davis, P. (2010) Theory in public procurement research, *Journal of public procurement*, 14(21):139-180 1535-0118
- [28] Frooman, J. (1999) Stakeholder Influence Strategies; *Academy of Management Review*, 24(2):191-205
- [29] Gall, M. D., Borg, W. R., & Gall, P. (2007). *Educational research: An introduction*. (8<sup>th</sup> Edition). White Plains, Longman. New York, USA.
- [30] George, D. & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide* Longman Publishers, Nairobi, Kenya Debt structure? [Electronic Version], 20, 1389.

- [31] Greenwood, R. (2008) A review of sustainable procurement initiatives
- [32] Gijo, E.V. & Ashok, S. (2013) Application of six sigma's to improve quality of road for wind turbine installation, *The TQM Journal*, 24(3):244-258
- [33] Government of Kenya: The development and Management of Roads Sub-sector for Sustainable Economic Growth, Ministry of Roads and Infrastructure Development, Season paper of 2011
- [34] Government of Kenya: The development and Management of roads sub-sector for sustainable economic growth, Ministry of roads and public works, Season paper of 2006
- [35] Harrison, A. & Van Hoek, R. (2005). *Logistics Management and Strategy* (p31-57). Prentice Hall, 2nd Edition
- [36] Hellen, P. (1997) Key legal issues in projects procured under the private finance initiative, *Engineering, Construction and Architectural Management*, 4(3):195-202
- [37] Lochner, H.W. (2009) Sustainability in highway construction
- [38] Holliday, A. (2001) Sustainable Growth, the DuPont way: Harvard Business Review, September: pgs129-134
- [39] Holt, R. & Graves, A. (2001) Benchmarking UK Government procurement performance in construction projects, *Measuring Business Excellence*, 5 (4):13-21
- [40] Hugo, M. (2003) Essentials of supply Chain Management; John Willis&Sons, Inc., Hoboken, New Jersey
- [41] Independent Electoral and Boundaries Commission (2013)
- [42] Isaac, S. & Michael, W.B. (2005). *Handbook in Research and Evaluation for Education and the Behavioral Sciences*. Macdonald and Evans, Ohio. U.S.A
- [43] Coyle, J., Bardi, E. J. & Langley, J. C. (2004) *The Management of Business Logistics* (. p 114-145). Southwestern Thomson Learning 7<sup>th</sup> Edition
- [44] Jeptepkeny, P. (2015) Effects of Procurement Procedures on Project Performance: A Case of Light Construction Projects at Kenya Ports Authority, Mombasa: *European Journal of Logistics and Supply Chain Management*, 3(1):1-11
- [45] Kadima,Z.,Musiga,D.,Kibet,Y.& Mamse,G.(2013)An analysis of Procurement Procedures on the Implementation of Government Construction Projects in Kenya Public Universities; A Case of Masinde Muliro University, *International Journal of Innovation Research and Development*.2(11):23-29
- [46] Keith, F. S. (2008) Public procurement policy: Implication for theory and practice; *Journal of public procurement*, 8(3):310-333
- [47] Kenya Roads Authority, 2013
- [48] Khisa, N. R. (2015) Influence of Procurement Process on Completion of Road Construction Projects in Kenya: A Case of Bungoma South Sub-County
- [49] Kiragu, R. (2012) Information technology and procurement practices in Kenya, *International Journal of supply chain management*.12 (4):410-450
- [50] Kiiru, W. H. (2015) Public Procurement Systems and its Influence on Building Contract Performance during Project Implementation: A Case of Nairobi County
- [51] Lahdenpera, P. & Koppinen, T. (2009) financial analysis of road project delivery systems, *Journal of Financial Management of Property and Construction*, 14(1):61-78
- [52] Larcher, P. (1998) Privatizing road maintenance in developing countries, *International Journal of Public Sector Management*, 11(2/3):116-129
- [53] Maurice, J. D. (2014) Procurement Practices Influencing Service Delivery: A Case of Kenya Power; *European Journal of Logistics and Supply Chain*, 2(3):79-137)
- [54] Mbae, N. L. (2014) Public Procurement Law and Procurement Performance of County Government in Kenya: Case of Machakos County government

- [55] Mbiu, P. W. & Omwenga, J. (2015) Procurement Practices Affecting Implementation of Projects by International Non-Governmental Organizations in Kenya; *International Journal of Novel Research in Marketing Management and Economics*
- [56] McDonell, R.& Swenney, E. (2004) Role of information technology in supply chain management, *Logistics Solutions*1 (3/4)
- [57] McIntyre, K. (2003) Delivering Sustainability through supply chain management: Global logistics and distribution planning, strategies for management. (P233-246)London: Koogan Page 4<sup>th</sup> Edition, London, UK
- [58] McWilliams, A. & Siegnel, D. (2001) Corporate Social Responsibility: A theory of the firm perspective. *Academy of Management Review*; 26(1):117-127
- [59] Mohsan,F.,Mohamad,M.,Nawaz.,M & Sufroz,K.(2012)Impact of job rotation on employee motivation commitment and job involvement in banking sector in Pakistan, *African Journal of Business Management*, 6 (24)Doi(10.5897/AJB 11.1195.
- [60] Monczka, Trent, Handfield. (1998). *Purchasing and supply chain management* (p. 366-368). Southwestern, 2nd Edition
- [61] Morris, W.G. (2004) Science, Objective Knowledge and Theory of Project Cost Management
- [62] Mugenda, M., & Mugenda, G. (1999). *Research Methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press, Nairobi, Kenya.
- [63] Muhamad, A.N, Malik.M. A&Tayyab, M., (2013) The role of procurement practices in effective implementation of infrastructure projects in Pakistan, *International Journal of Managing Projects in Business*, 6(4):802-826
- [64] Mukindia, H. & Noor, I. S. (2014) Factors affecting E-procurement implementation in government Ministries in Kenya: A case of the treasury, *European journal of business management* 2 (1).
- [65] Mohanty, R.P. & Myeong-je, S. (1988) Assuring the quality in procurement systems: Some observations, *International Journal of Quality and Reliability Management*, 5(1):7-23
- [66] Milones, A., Smyser, R. & Grochow, J. (2006)" So what does IT cost? Research Bulletin, issue No 16; Boulder, CO Educause, center for analysis and research.
- [67] Makau, G., Omwenga, E., &Njihia, J. (2015) The critical technological factors of E-government in Kenya.
- [68] Muhamad,B.A.,Adama,T.& Ladi,D,B.(2015)Appraisal of Construction Project Procurement Policies in Nigeria; *American Journal of Engineering Research* 4(3),19-24
- [69] Musau, E, G. (2015) Determinants of Procurement Functions and its Role in Organization Effectiveness.*International Journal of Business Management*, 17(3):12-25
- [70] Ndekurgi, I., Daeche, H. & Zhou, D., (2013) The project insurance option in infrastructure procurement, *Engineering, Construction and Architectural Management*, 20(3):267-289
- [71] Noor, M.A., Maqsood, T. & Khalifan, M.A. (2013) The role of procurement practices in effective implementation of infrastructure projects in Pakistan
- [72] Nyandika, O. F. & Ngugi, K. (2014) Influence of Stakeholder Participation on Performance of Road Projects at Kenya National Highways Authority, *European Journal of Business Management*; 1(11):384-404
- [73] Ogunsami, E. O. (2013) Effects of Procurement Related Factors on Construction Projects Performance in Nigeria; *Ethiopian Journal of Environmental Studies and Management*, 6(2)
- [74] Osei-Tutu, E. & Owusu-Manu, D. (2010) Exploring corruption practices in public procurement of infrastructural projects in Ghana, *International Journal of Managing Projects in Business*, 3(2):236-256
- [75] Oyegoke, S.A, Dickinson, M., Khalfan, M.A., McDermott., P. &Rowlinson, S., (2009) Construction project procurement routes: an in-depth critique, *International Journal of Managing Projects in Business*, 2(3):338-354
- [76] Perreira, C.R, Christopher, M. &Da Silva, A.L. (2014), Achieving supply chain resilience: the role of procurement, *Supply Chain Management, An International Journal*, 19(5/6):626-642

- [77] PriceWaterhouseCoopers (2009) Sustainability Monitor: May 2009, Measurement 4. Amsterdam: PriceWaterhouse Coopers.
- [78] Raymond. (2008) Benchmarking in public procurement, *Benchmarking: An International Journal*, 15(6):782-793
- [79] Government of Kenya, (2012) Economic Survey. Nairobi Kenya: Government Printers.
- [80] Government of Kenya, (2012) Kenya Bureau of statistics. Nairobi Kenya: Government Printers.
- [81] Ronnback, A. (2012) Quality in the public procurement process, *The TQM Journal*, 24(4):447-460
- [82] Rushton, A., Croucher, P. & Baker. (2006) *The handbook of Logistics and Distribution Management*, 3rd edition, Koogan Page, London
- [83] Somez, M. (2006) Review and critique of supplier selection process and practices.
- [84] Swaffield, I.M. & McDonal, A.M. (2008) The contractors use of life cycle costing on PFI projects, *Engineering, Construction and Architectural Management*, 15(2):132-148
- [85] Stewart, B. and Hrenwitch, D. (2009) A Cost Model for Project Based Information and Communication Technology: Creative commons, Attribution No 3
- [86] Taming corruption in Kenya Public Procurement. EACC 1(2)
- [87] Tillery, K.R. & Rutledge, A. L. (1991) Quality-Strategy and Quality Management Connections, *International Journal of Quality and Quality Management*, 8(1)
- [88] Trochin, W.K. (2006) *Research methods*. Knowledge base. Koogan Page Ltd, London, UK.
- [89] Warren, S. & Dalrmpole, (2010) Exploring infrastructure procurement by Australian state governments, *International Journal of Managing Projects in Business*, 4 (3):512-523
- [90] Wee, S.H., Othman, R., Omar, H.N., Rahman, A.R., & Haron, H.N. (2011) Procurement issues in Malaysia, *International Journal of Public Sector Management*, 24(6):567-593)
- [91] World Bank (2013), World Bank Participatory Source book. A World Bank Publication, Washington DC
- [92] Yamane, T. (1967) *Statistics, an Introductory Analysis*, 2nd Edition, Harper Row
- [93] Zuo, K., Potongaroa, R., Wilkinson, S. & Rotimi, J.O. (2009) A project management perspective in achieving a sustainable supply chain for timber procurement in Banda Aceh, Indonesia, *International Journal of Managing Projects in Business*, 2(3):386-400