



**PROCUREMENT PRACTICES AND PERFORMANCE OF ROAD PROJECTS IN  
KISUMU WEST-SUB COUNTY, KISUMU COUNTY, KENYA**

**<sup>1</sup> Okuku Clement Nixon Agwingi, <sup>2</sup> Prof. Oloko A. Margaret**

<sup>1</sup> MsC, Logistics and Procurement Management, Jomo Kenyatta University of Agriculture and Technology

<sup>2</sup> Lecturer, Department of Business Administration, 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 the effect of procurement practices on performance of road projects in Kisumu West Sub-County. The study specifically sought to determine the effect of procurement planning and information technology on performance of road projects in Kisumu County. 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 55.3% of the respondents strongly agree that planning affects project performance. Results also showed that procurement planning, and information technology affected project performance. Recommendations are; 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 and 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.

**Key Words:** Procurement Performance, County Roads, Procurement Practices, Procurement Planning, Information Technology

## **INTRODUCTION**

Procurement play an important role in an organization overall performance and the procurement performance is important for the overall success of the organization. Due to the turbulent business environment in some regions of the world, procurement practices have become an area of interest in the modern organization since it enables firms to better manage various costs and wastes thus leading to high customer satisfaction and value generation to the stakeholders (Kristensen, Mosgaard, & Remmen, 2021). Procurement management practices are primarily concerned with the strategies used while making procurement choices. Procurement management practice is also defined as the method involved with acquiring products for a company in accordance with established policies guiding the selection of products, suppliers, and techniques with the goal of employing sound business methods that maximize the organization's value (Quesada, González, Mueller, & Mueller, 2018).

World Trade Organization (2018) stated that procurement procedures is guided by three main principles: all parties interested have an equal opportunity to submit tenders, all enquiries must receive equal treatment in order to eliminate discrimination on the grounds of the nationality of the contractor or the origin of the goods/services, and all tendering and award procedures must involve the application of objective criteria. Proper application of procurement practices give rise to a number of benefits to an organization and to the strategic plans of organizations that could lead to acceleration and flow of important information between the buyer and supplier, and also helps to respond quickly to highly competitive new. Procurement practices enables the organization to procurement planning effectively, ethically practices procurement and best performance measurement in procurement activities. Procurement's integral role in a company's operations makes it the fulcrum for all stakeholders, customers, suppliers, subcontractors and service providers to effectively collaborate and build sustainability across the entire supply chain (Beamon, 2021).

Procurement is to manage the procurement process and supply base efficiently and effectively through identifying opportunities, managing internal operations and achieve objectives, in identification of opportunists procurement adds true values by evaluating and selection of suppliers, approval of procurement process, increasing use of sourcing teams, review of specifications and statement of work, review requirements for materials or service being provided, suggest alternative standardized material that can save organization money, periodic review of requisition that allows leveraging of requirements and finally act as a contact with suppliers (Stock&Lambert, 2021).

### **Statement of Problem**

The roads infrastructure ideally is supposed to serve the residents with movement from one point to the other and play an economic role of alleviating poverty by ensuring that goods and services are moved to where they are required at the right time and right place. The road system under the national government before the devolution was well maintained and of good quality, funded at affordable cost and was constructed within reasonable timeline. However currently after devolution many road projects have failed due to time inefficiency, poor quality, and inflated costs. The roads are in poor state due to poor quality construction, there is an extended construction time and rampant corruption in the tendering process itself. Others are due to lack of adequate funds allocation, lack of advanced equipment and inadequate understanding of the roads projects construction legal frameworks (Kenya Roads Authority, 2022).

Kisumu County is facing challenges in the Construction Industry despite it being the fastest developing county and the construction industry is an area of focus and has been drawing positive attention and top heavy weight companies are now fully focusing in the Kisumu County road

construction industry. The dulling of Nyamasaria-Kisian Road in Kisumu in 2016 showed bitumen bleeding defects soon after surface dressing while the expansion of Kisumu International Airport Road in 2015 had a time overrun of 10 months resulting into cost overruns (Ogutu & Muturi, 2020). Kisumu County government roads department a work plan showed that in the year 2019, the county was to spend substantial amount to improve road network in the county's 35 wards yet there are reported cases of poor state and quality of roads like poor roads in Nyalenda, Nyando, Muhoroni, and Seme, (CIDP report, 2019). Irrespective of the large allocation for roads maintenance fuel levy fund, the road network in Kisumu county still remains poor with some poorly constructed urban and rural county roads that get dilapidated shortly after completion and use. County revenue streams for the year 2022-2023 percentage efficiency for roads, transport and public works was not indicated despite other revenue streams categories recording a better performance in terms of percentage efficiency (CIDP report, 2023). The report further show that transport and infrastructure expenditure absorption rates were quite low; which has translated to poor and inefficient road network within urban and rural areas of the county and underutilization of the Lake as mode of transport. Despite previous studies (Apiyo & Kiarie, (2014), Kwasira & Chanzu, (2016) & Mburu et al., (2015) focusing on Ministry of Roads. None of the studies focused on the effect of procurement practices on performance of roads in Kisumu West Sub-County. The study sought to fill the knowledge gap by investigating the effect procurement practices on performance of roads projects in Kisumu West Sub-County.

### **Research Objectives**

The research was guided by the following specific objectives:

- i. To determine the effect of procurement planning on performance of road projects in Kisumu West Sub-county.
- ii. To determine effect of procurement information technology on performance of road projects in Kisumu West Sub-county.

## **LITERATURE REVIEW**

### **Theoretical Framework**

#### **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).

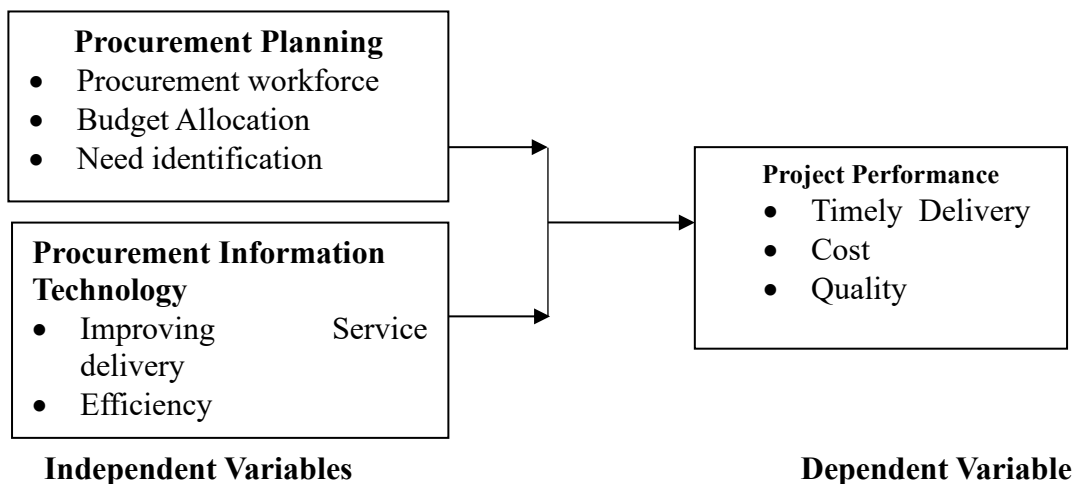
Road construction is capital intensive and need a big allocation of funds, these funds have to be accounted for and it is the responsibility of those in procurement department to ensure that they develop mechanism that will ensure the money is used wisely. Cost associated with road construction are many from tendering to the final post project conclusion as such the transaction costs involved in the acquisition of such projects should be clearly understood in order to get the correct work done. The theory supports procurement planning is important in the construction of roads as it is capital intensive and developing a closer link with contractors can help in identifying

the areas which cost can be made by developing a less adversarial relationship and forging a closer relationship like co-ownership where one partner see itself as an extension of the other.

### System Theory

According to Bertalanffy (1972), system theory is the transdisciplinary study of systems in general, with the goal of elucidating principles that can be applied to all types of systems at all nesting levels in all fields of research. The term does not yet have a well-established, precise meaning, but systems theory can reasonably be considered a specialization of systems thinking, a generalization of systems science, and a systems approach. The term originates from Bertalanffy's General System Theory (GST) and is used in later efforts in other fields, such as the action theory of Talcott Parsons and the system theory of Niklas Luhmann. Systems theory on the other hand, has its origins from the work of German biologist Von Bertalanffy who understood the limitations of these traditional approaches. He saw the need to create a revised approach and hence emerged systems theory (Irving, 1999). The theory is relevant to the study because all organizations interact with the outside world and rely on Information Technology to communicate and coordinate their operations through systems. Sections of organizations interact amongst themselves in exchange of key information and materials. System theory is very helpful in the discussion of the place of IT in procurement practices and helps in the assessment of the relationship between IT tools and procurement practices.

### Conceptual Framework



**Figure 1: Conceptual framework**

### Procurement Planning

Procurement planning is the process of identifying and consolidating requirements and determining the timeframes for their procurement with the aim of having them as and when they are required (Halord, 2020). 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 (Kombe, 2020). The planning usually takes place in line with the organizations normal planning cycle. For most organizations, this planning process is undertaken either on the annual or biennial basis. The procurement strategy is

developed by first reviewing the organization's strategic direction and objectives. Procurement strategies must reflect the overall aim, strategy, and objectives of the organization (Gurmu, 2019).

Basheka, Oluka and Mugurusi (2015) argue that procurement planning is one of the primary functions of procurement with a potential to contribute to the success of government operations and improved service delivery. Section 53(2) of the Public Procurement Asset and disposal Act (2015) provides that an accounting officer shall prepare an annual procurement plan which is realistic in a format set out in the Regulations within the approved budget prior to commencement of each financial year as part of the annual budget preparation process. Further section 53(4) provides that all asset disposals shall be planned by the accounting officer concerned through annual asset disposal plan in a format set out in the Regulations. Moreover, Section 53(8) provides that an accounting officer shall not commence any procurement proceeding until satisfied that sufficient funds to meet the obligations of the resulting contract are reflected in its approved budget estimates. Additionally section 53(9) provides that an accounting officer who knowingly commences any procurement process without ascertaining whether the good, work or service is budgeted for, commits an offence under this Act

### **Procurement Information Technology**

Procurement information technology is the implementation of computerized procurements process. It reduces paper works, aids in evaluation and enhances comparative analysis between different service providers (Ghazal & Alzoubi 2021). Integration of information technology in business operations involves digitization of traditional manual processes. This integrates procurement process and minimize its life cycle. Information technology that supports procurement practices is one that contributes to productivity improvement, enhances routine operations, as well as improving logistical activities in the procurement network. The level of productivity is assessed through procurement optimization network while procurement within operations covers the capacity and supply chain inventory management. Firms adopts different forms of information technologies aiming at facilitating performances in the area of procurement practices (Thogori et al., 2018)

According to Yao, Dresner and Zhu, (2019), the inclusion of technology in procurement was originally meant to ease some of the more difficult aspects of the process. Reduce common problems, track data, and generally make it easier for procurement teams to make their purchases and track their progress. Technology had already appeared in other analytical sectors of the business world as a staple of operations in those areas, and was increasing its presence in other parts of society. Schoenherr (2019) associated technologies in procurement include: electronic data interchange (EDI), materials requirement planning (MRP I), manufacturing resource planning (MRP II), and enterprise resource planning (ERP). Modern automated information technology offers paperless means of doing business and delivers big savings over manual systems - from reduced administrative costs to shortened procurement and fulfilment cycles (Keanna, 2019).

Automation of procedures for the purchase through e-procurement technology enables companies to achieve a reduction in costs (average 8-12%) of total purchases. A good e-procurement system must have all elements that enable the buyers and sellers to interact effectively including all supply chain activities from procurement planning information to supplier evaluation. Both buyers and sellers should have access to each other's information as and when required electronically for smooth functioning of e-procurement (Oteki, 2020). Ronchi, Brun, Golini, and Fan, (2020) noted that technology is used in managing the multitudes of data that teams need to use in negotiating and decision-making. They track their inventories, orders, strategies, contracts, and finances with software and digital systems. Even smaller procurement teams who do not necessarily have an overwhelming amount of data to navigate through as their larger counterparts will have all of their

business practices tied to the usage of technology. It is safe to say that tech in procurement is everywhere and it plays whatever role you want it to play.

Kamble (2019) identified e-payment to be a very convenient means of payment as compared to the traditional payment methods such as cash and cheque. This is because payment is made instantly leading to saving time. Ability to pay for goods, services and works online at any time from any part of the world is very pleasing since customers do not have to queue awaiting to make payments. Customers also do not have to wait for the checks to clear. Olayeni (2019) also highlights that e-procurement leads to improved information management, provides significant opportunity for management to oversee the entire base supply and have control over the purchasing process. The system also leads to improved relationships with the suppliers and enables quick and timely payment of bills as the study further outlines.

The Public Procurement System in Kenya has evolved from a crude system with no regulations to an orderly legally regulated procurement system (PPRA, 2020). The Public Procurement Regulatory Authority monitors, assesses and reviews the public procurement and asset disposal system to ensure that they respect the national values and other provisions of the Constitution. The authority runs a Public Procurement Information Portal which is an online platform for publication of contract awards and tender notices by procuring entities (PPIP, 2020). The authority and the procurement system therefore governs and monitors the public procurement process. In Kenya the adoption of e-procurement in organizations is still at the inception stages.

Information sharing can rapidly improve the way procurement is done with contractors especially in the wake increasingly globalization and outsourcing, which has and will continue to have a profound effect on procurement operations. By exchanging information such as inventory levels, forecasting data, sales, and trends, organizations can reduce cycle times, fulfill orders more quickly, cut millions of dollars in excess of inventory, improve forecast on inventory, customer care and streamline the procurement operations. Information sharing in the supply chain can be applied in almost all the core domains of organizational activities. Starting from developing the chain process where information sharing can happen in the product design stages and product lifecycle management activities with both internal and external partners (Alzoubi, & Yanamandra, 2020)

## **Empirical Review**

### **Procurement Planning and Performance**

Ahmed (2019) studied effect of procurement practices on organizational performance in Somalia's telecommunications industry. The study employed descriptive research approach. Questionnaires were used to collect data. Findings showed that procurement planning has a major influence on corporate performance. Macha (2021) studied impact of procurement design on Tanzanian public administration. The study adopted a cross-sectional research design. Purposive sampling was used to sample 67 respondents. Questionnaires were used to collect data. Results showed that there is a significant relationship between timely procurement plan creation, quality planning, cost estimation, and procurement function performance. Chepkesis and Keitany (2018) researched effects of procurement strategy on the performance of suppliers in public entities. The study employed an explanatory research design. The sample was 119 suppliers sampled using census. The team used interview schedules and questionnaires to collect data. According findings, procurement planning improves procurement decision making, product quality, creativity, and procurement issue resolution.

Sindiga, Paul, and Mbura (2019) examined the role played by procurement planning in influencing performance of construction firms in Nairobi County. The study target was 4,142 construction companies in Nairobi County. Data was collected using questionnaires. Conclusions

were that procurement planning a great impact on performance of construction firms in Kenya. Miriti and Mwangangi (2018) investigated effect of procurement planning on performance of the supply chain of the Kenya Medical Supplies Authority. The study has shown that the evaluation of procurement needs, budgeting, quality standards and supplier selection have had a positive and significant effect on the supply chain performance of Kenya Medical Supplies.

Amenya, Ngacho, and Nyaboga (2022) assessed procurement practices performance of infrastructural projects in the universities using Rongo university. The study adopted descriptive research design. The target population was 60 employees working in the selected departments of Rongo University. The main research instrument was the questionnaires. The study found that procurement plans indicate timelines of what and when items would be procured, followed by infrastructural projects contracts are completed within set period. Advertisement of infrastructural project tenders considers the mode to use. The study established that supplier selection was applied in the university. Oenga and Thogori (2022) sought to determine the influence of procurement plan on the effectiveness of procurement process of public universities in Eastern region, Kenya. The study employed a descriptive research design. The population was 94 departmental heads. Questionnaires were used to collect data. Findings showed that procurement plan and effectiveness of the procurement process had a significant effect on procurement process of the university.

### **Procurement Information Technology and Performance**

Masudin et al. (2021) investigated the influence of the adoption of e-procurement on organizational performance and found that its' implementation has a significant effect on company performance. The study also highlights the direct and indirect benefits of applying e-procurement. The direct benefits can increase efficiency and effectiveness in the operation process, data accuracy, and useful application process; while indirect benefits can improve customer services, make the procurement process more competitive and improve relationships with business partners.

Tao (2019) found that B2B order management and fulfilment of customers' needs is a major component for a successful supply chain. Due to the excess availability of communication tools, organizations face transactional challenges especially in online ordering brought about by the rising expectations of customers. The study revealed that one way to face the challenges is through introduction of online ordering system for the businesses. The system saves time and it consolidates real-time information across multiple channels. Madzimure, Mafini and Dhurup (2020) conducted a study on e-procurement, supplier integration and supply chain performance in SMEs in South Africa and found that e-design and e-negotiation exerted a significant positive influence on supply chain integration. The study further revealed that supplier integration exerts a positive and significant linear relationship with both the tangible and intangible dimensions of supply chain performance

Kisimbii and Maalim (2019) studied influence of electronic procurement and performance of organizations. The study revealed that the arrival of web-based electronic procurement, electronic ordering, electronic sourcing, e-receipt, e-invoicing and e-requisitions should be able to minimize the time spent during the process of order execution, minimize storage and stock levels, reduce all administrative expenses related to procurement and also boost fulfilment of order and improve organizational performance.

Gitonga and Kyule (2021) investigated effect of compliance audit of the procurement system on performance of supply chain management in state corporations in the ministry of transport. Findings showed that low level of compliance with procurement regulations hinder execution of effective procurement practices. Additionally, compliance audit had a significant influence on supply chain performance of state corporations in the ministry of transport.

## RESEARCH METHODOLOGY

A research design is a plan for selecting research subject, from which the research is conducted and all possible procedures that a researcher use to answer research questions (Pandey & Pandey, 2021). This study adopted qualitative cross-sectional survey research design. This study targeted the residents within Kisumu West Sub-County, the staff that included those who are working in Sub-County in the various departments; Finance and Procurement, Inspectorate, Human Resource, Engineering and the County road users. The population for the study was 500 residents and staff members in Kisumu West Sub-county.

The sample size was determined by use of normal approximation to the hyper geometric population distribution is arrived by:

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

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%

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

$$n=77$$

**Table 1: Sample Size**

Cadre of Organization	Population of employee in every cadre	Sample size of employee in every cadre(NP/Tp*SP)
Engineering Department	5	1
Finance Department	15	2
Inspectorate Department	25	4
Human Resource Department	5	1
Sub County Household Road Users	450	69
Total	500	77

**Np**=Size of employee in every cadre, **Tp**=Total size of population, **SP**=Sample size of population.

In this case stratified sampling whose logic lies in the selection of sample of items from a given sub population to obtain a representative sample(Kothari,2014). The purpose of stratified random sampling technique is to group population into sub sets. The variable chosen increase stratified random sampling technique ensures that sub groups are proportionally represents and accounts for difference in sub groups characteristics thus raising extern validity of the study ((McLeod, 2019).

The research instrument for the study was questionnaire designed by the researcher. Data was collected by the use of drop and pick technique. A pilot was carried out with h 10% of the sample hence 8 respondents. Pilot findings were used to test questionnaires' validity and reliability. After piloting, the questionnaires were deemed fit to collect actual data. The excel software was used to transform the variables into a format suitable for analysis after which the statistical package for social sciences for data analysis, was used which provided various statistics which was then applied to analyze the quantitative data in terms of percentages frequency distribution, means and



standard deviation. Tables and charts was used to summarize responses for further analysis and facilitate comparison.

## RESEARCH FINDINGS AND DISCUSSIONS

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. Mugenda and Mugenda (2019) indicated that a response rate of above 70% is adequate for analysis. Rowley (2014) noted that a high response rate results in highly credible findings.

### Descriptive Statistics

#### Procurement Planning

The respondents were asked to what extent procurement planning measurement affects performance of 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 2 below;

**Table 2: 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 2: 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.

### Information Technology

The respondents were then asked to indicate whether they agreed with various statements on procurement 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 3: Information Technology in Project 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 performance of road projects in Kisumu West Sub-County. On this, 30 respondents asserted that to a great extent there was poor extent application of information technology affected negatively the overall road 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.

### Project Performance

The respondents were asked to indicate their level of agreement with some various statements in relation to procurement practices 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: Procurement 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.

### Inferential statistics

#### ANOVA

ANOVA was conducted to test the relationship between the study variables. ANOVA results are presented in Table 5.

**Table 5: ANOVA Results**

		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			
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.

#### Regression Analysis

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

**Table 6: 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 project performance is explained by procurement practices. This means that 68.7% of the total variance of level of project performance cannot be explained by procurement practices. The Durbin-Watson value of 2.118 is less than 7 meaning there was no autocorrelation in the study variables.

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

**Table 7: Analysis of Variance of the Study Variables**

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 affected project 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 that procurement practices affected performance of road projects in Kisumu West Sub-County.

**Table 8: Co-efficients of the Regression Model**

Model	Unstandardized	Standardized	t	Sig.	Model
	Coefficients	Coefficients			
	B	Std. Error	Beta		
(Constant)	.168	.457		.368	.714
Procurement Planning	.467	.103	.494	4.517	.000
Information Technology In Procurement	.358	.207	.190	1.731	.089

The regression equation is as shown below

$$Y = 0.168 + 0.467X_1 + 0.358X_2$$

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

### 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.

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.

### 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 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

## 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

- Ahmed, M. (2019). *Procurement Practices and Organizational Performance in Selected Telecommunication Industry in Hargeis, Somalia*. Unpublished Masters' Thesis, Kampala International University
- Alzoubi, H., & Yanamandra, R. (2020). Investigating the mediating role of information sharing strategy on agile supply chain. *Uncertain Supply Chain Management*, 8(2), 273-284.
- Amenya, J. M., Ngacho, C. & Nyaboga, Y. (2022). Effect of procurement practices and government policies on performance of the infrastructural project in public universities in Kenya: A case of Rongo University. *International Academic Journal of Procurement and Supply Chain Management*, 3(2), 238-262.
- Changalima, I., Ismail, I.J. & Mchopa, A.D. (2021a), "A review of the forms, rationale, and challenges of supplier development in public procure
- Chepkesis, K. & Keitany, P. (2018). Effect of Procurement Planning on Suppliers Performance in Public Institutions: A Case of Moi University. *European Journal of Logistics, Purchasing and Supply Chain Management*, 6(2) 1-9
- Ghazal, T. M., & Alzoubi, H. M. (2021). Modelling supply chain information collaboration empowered with machine learning technique. *Intelligent Automation & Soft Computing*, 29(3), 243-257.
- Gitonga, I. & Kyule, A. (2021). Effect of Compliance Audit of the Procurement System on Performance of Supply Chain Management in State Corporations in the Ministry of Transport. *International Journal of Procurement and Supply Chain Management*, 5(2) 603-613
- Kembero, E. & Ombui, K. (2018). Determinants of Procurement Performance in Public Entities in Kenya: A Case of Kenya School of Law. *International Journal of Scientific and Research Publications*, 8(5) 650-667
- Kisimbii, J., & Maalim, A. (2019). Influence of E-Procurement on the Performance of Infrastructural Projects in Devolved Units; a Case of Roads Construction Projects in Mombasa County. *Journal of Entrepreneurship & Project Management*
- Kristensen, H. S., Mosgaard, M. A., & Remmen, A. (2021). Circular public procurement practices in Danish municipalities. *Journal of cleaner production*, 281, 124962.
- Kyalo, J. K., & Kitheka, S. (2020). Effect of Ethical Procurement Practices on Performance of State Corporations in Kenya: A case of Kenya Ports Authority. *The Strategic Journal of Business & Change Management*, 7(2), 205 – 221
- Macha, Y. (2021). *Effect of Procurement Planning on Performance of Local Government Procurement Functions in Bahi District, Dodoma Region*. Unpublished Masters' Thesis, Kampala University
- Madzimure, J., Mafii, C., & Dhurup, M. (2020). E-procurement, supplier integrating and supply chain performance in small and medium enterprises in South Africa. *South African Journal of Business Management*
- Magut, F. J. (2019). Influence of Supplier Relationship on Performance of Procurement Function at MOI Teaching and Referral Hospital, Kenya. *IOSR Journal of Business and Management*, 21(10), 67-89

- Masudin, I., Aprilia, G. D., Nugraha, A., & Restuputri, D. P. (2021). Impact of E-Procurement Adoption on Company Performance: Evidence from Indonesian Manufacturing Industry. *Logistics*, 5(1), 16.
- Mchopa, AL. (2022). Effects of supplier selection and supplier monitoring on public procurement efficiency in Tanzania: a cost-reduction perspective. Emerland Publishing Ltd.
- Mutambo, P. (2018). Empirical Analysis of Factors Affecting International Competitiveness of Zambia's Tourism Industry. *International Journal of Psychological and Brain Sciences*, 3(1), 7-17.
- Mutuku, M. (2021). *Influence of Supplier Selection Criteria on Performance of Public Corporations In Kenya: A Case of Water Resources Authority*. Unpublished Thesis, St. Paul's University
- Mwaiseje, S. & Chagalima, I. (2020). Procurement planning as a strategic tool for public procurement effectiveness: Experience from selected public procuring entities in Dodoma city, Tanzania. *Journal of Public Procurement*. 21(1) 37-52
- Mwasikili, N. (2020). *Assessment of the Factors Influencing Procurement Performance of Goods in Public Sector*. Unpublished Masters' Thesis, Mzumbe University
- Oenga, O. & Thogori, M. (2022). Influence of Procurement Plan on the Effectiveness of Procurement Process among Public Universities in Eastern Region, Kenya. *International Journal of Economics, Business and Management Research*, 6(2)106-121
- Orio, G. (2020). Analyzing the Impact of Strategic Procurement Practices on the Effectiveness of Procurement Function in Public Sector. *International Journal of Creative Research Thoughts*, 8(6)40-46
- Ronchi, S., Brun, A., Golini, R., & Fan, X. (2020). What is the value of an IT e-procurement system?. *Journal of Purchasing and Supply management*, 16(2), 131-140.
- Schoenherr T. (2019). The Evolution of Electronic Procurement. In *Transforming Business as Usual*. Palgrave Pivot, Cham
- Sindiga, L. K., Paul, S. N. & Mbura, L. K. (2019). Influence of procurement management practices on performance of construction firms in Nairobi County, Kenya. *International Academic Journal of Procurement and Supply Chain Management*, 3(1), 143-163
- Wanjiku, F. (2019). *Effect of Strategic Procurement Practices on Organizational Performance In Public Organizations: A Case of Kenya School of Revenue Administration*. Unpublished Masters Thesis, United States International University – Africa
- Wanjiru, W., Kiarie, D. & Marendi, P. (2018) Role of Strategic Procurement Practices on Performance of Nyandarua County Government. *International Journal of Human Resources and Procurement*, 7 (4) 64 – 74
- Yao, Y., Dr esner, M., & Zhu, K. X. (2019). “Monday Effect” on Performance Variations in Supply Chain Fulfillment: How Information Technology–Enabled Procurement May Help. *Information Systems Research*, 30(4), 1402-1423