



# RELATIONSHIP BETWEEN PROCUREMENT MANAGEMENT PRACTICES AND PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN WAJIR COUNTY, KENYA

**Dahira Yarrow Ibrahim**

Department of Management Science, Kenyatta University, Kenya

dahirayaro2011@gmail.com

**Morrisson Kaunda Mutuku** 

Department of Management Science, Kenyatta University, Kenya

mutuku.morrisson@ku.ac.ke ORCID: <https://orcid.org/0000-0003-0662-7157>

## Abstract

*This study sought to investigate the relationship between of procurement management practices and performance of road construction projects in Wajir County, Kenya. The study specifically aimed at determining the relationship between training needs training, contract management, supplier relationship management, and information sharing and performance of road construction projects in Wajir County, Kenya. This study was founded on Agency theory. The study used a descriptive research design. The target population was 50 people therefore a census was employed. 5 project managers and 45 project team members. A semi-structured questionnaire was used for data collection. Descriptive statistics and inferential statistics were used for data analysis. From the findings, regression model coefficients indicated that information sharing, contract management, supplier relationship management, and training needs assessment positively influenced performance of road construction projects in Wajir County. However, contract management was statistically insignificant. This study concludes that training needs assessment, contract management, supplier relationship management and information sharing as part of procurement management practices have a positive correlation with performance of road construction projects in Wajir county, Kenya. The study recommends the county government of Wajir to pay particular attention to procurement management*

*practices as they positively impact performance of road construction projects. There is need to focus on training needs assessment as it enables the right people to be targeted for each training session, helps to identify knowledge and technical skill gaps before they become a problem, ensures that the training is meeting the actual business demand, and helps employees acquire the knowledge and skills they need to perform their jobs. The study also recommends emphasis by Wajir County on contract management practices to improve performance of road construction projects. This can be done by using the right validation and certification tools, making it simple to identify contracts with various suppliers, paying less for legal services, stopping unforeseen service renewals, keeping track of important project milestones, and using automated features and notifications.*

*Keywords: Procurement Management Practices, Performance, Road Projects, Project Procurement, Information Sharing, Kenya*

## **INTRODUCTION**

The tactics used to make procurement decisions, as well as the management of the entire process, have an impact on project performance. Adherence to various procurement management methods influences the quality of material inputs as well as the efficacy with which organizations deliver projects (Ndei & Mutuku, 2021). Globally, procurement methods have been regarded as bureaucratic and convoluted, making it difficult for corporations to meet stated goals. This viewpoint has had a negative impact on supplier morale, lowering the effectiveness of supply chain management. Kirigia (2018) identified numerous procurement management practices, including needs assessment, contract management, ICT adoption, supplier relationship management, information sharing, and inventory management.

Procurement has a huge impact on how a firm achieves its objectives. Procurement methods can be improved to improve organizational performance even more (Odero & Ayub, 2017; Ndei & Mutuku, 2021). According to Marshall, McCarthy, Claudy, and McGrath (2019), companies have a tendency to pick acquirement techniques that are natural to them; instead, they ought to select those that are most suited and valuable to their business. Purchasing integration is being scrutinized more closely. Purchasing integration ties purchasing processes to business outcomes. Procurement strategies are crucial to organizational success because to the direct connection between functional proficiency, production network execution, and authoritative execution. Consolidation of the entire procurement process is essential to improve overall organizational performance, leading to the deployment of procurement strategies such as green purchasing.

Streamlined procurement methods increase efficiency and employee, customer, and stakeholder trust in the company. Moving away from outdated purchase methods and toward more contemporary and effective procurement techniques enables continuous improvement and benchmarking (Islam, Murad, McMurray & Abalala, 2017). At this phase, a corporation compares itself to the finest in its industry. Procurement is no longer a process; it is now a strategic function within the firm that reduces costs and optimizes savings. According to Loosemore and Reid (2019), firms should constantly benchmark in order to improve their processes. Organizations must alter their attention from a predictable company-oriented standpoint to a dual company-customer standpoint.

Procurement ought to be emphatically associated with the turn of events and execution of Sustainable Procurement Policies, with an exceptional accentuation on how ecological issues, as well as issues connecting with different parts of society and the economy, can be coordinated into obtainment process exercises (Vaidya & Campbell, 2016). According to Mutuku, Muathe and James (2019) and Mutuku (2019), it is vital to consider a wide range of performance indicators when determining organizational performance. Quality, efficiency, productivity, profitability, and sustainability should all be considered when measuring organizational performance. Procurement should be viewed as an integral aspect of an organization's overall strategy.

Many road contractors have failed or performed inadequately, particularly in terms of road maintenance (Mashwama, Mushatu & Aigbavboa, 2018). The government's attention has been called to their poor performance, leading the establishment of a performance contract and the installation of authority to oversee the contractors' performance. Poor road contract performance, on the other hand, is ascribed to insufficient financial management and poor service delivery to road users. A road contractor's performance can be measured in a variety of methods, including time, cost, and other performance indicators. Failure of any road contractor is mostly due to resource management concerns and, in some circumstances, political involvement (Damoja & Kumi, 2018). Furthermore, there are a variety of causes and events that contribute to these difficulties.

The county government of Wajir set out in its County Integrated Development Plan 2013 to 2017 to carry out various road projects in order to reverse the county's current weak road infrastructure. The district intends to undertake the staggering action of 2117 km under this First CIDP. In addition to major budget expenditures in the road industry, such as 1,262.2 million in FY 2013/2014 and 1,052.67 million in FY 2017/2018, a review of the implementation of this CIDP revealed that the district has managed to place 320 kilometers to improve access to highways from the city of Wajir (Abdi,2020).

Eriksson and Vennström (2015) investigated how procurement affects project performance and discovered that procurement methods have a favorable influence on collaboration among project actors, which in turn gainfully affects project performance. However, because the study was a survey of Swedish construction clients, the conclusions may differ in the Kenyan setting. Aputo (2017) evaluated the influence of procurement functions on project performance in non-governmental organizations in Nairobi County, Kenya, and discovered that procurement functions have a favorable effect on project performance. The study, however, revealed a contextual gap. Zulu (2020) focused on a critical examination of procurement management practices and their impact on the success of construction projects, revealing that procurement management techniques have the ability to successfully contribute to the success of construction projects. Based on the above discussion, this study set out to determine, the relationship between procurement management practices, training needs assessment, contract management, supplier relationship management and information sharing influence on performance of road construction projects.

## **LITERATURE REVIEW**

### **Theoretical Review**

This study was founded on Stewardship theory by Donaldson and Davis' between 1991 to 1993. The theory posits that stewardship theory is a novel way of looking at the current links among proprietorship and the board in an organization. It emerges as a critical counterbalance to Agency Theory. According to this theory, a steward optimizes shareholder utility through safeguarding and maximizing shareholder capital through the firm's performance. In this context, stewards are chiefs who endeavor to safeguard and boost incomes for investors. Stewardship theory emphasizes management's position as stewards, with management's priorities imbedded in the company. The theory emphasizes the importance of governance frameworks that engage stewards and give full independence in light of trust. It accentuates the significance of workers acting independently to advance investor returns. This will, in reality, reduce the costs of monitoring and regulating employee behavior.

### **Empirical Literature Review**

Laban, Thuo, and Mutegi (2017) used a case study of Nairobi City County to investigate how preparing needs appraisal impacts hierarchical execution in Kenyan Counties. The study sought to analyze the impact of training needs evaluation on hierarchical execution. There were 161 employees in the target population. It was observed that assessing training needs is critical in affecting an organization's success. It was suggested that a training needs assessment look

at the skills, knowledge, and abilities needed by the affected occupational groups. A training needs assessment determines the level of organizational performance. This type of assessment identifies the skills, knowledge, and competences required by a business.

Ejakait (2016) investigated how training needs assessment affects the performance of a postal corporation of Kenya employee in Bungoma County. The review looked to decide what the evaluation of preparing needs means for the exhibition of workers in the Kenyan postal enterprise. A review research configuration was utilized in the review. The ideal interest group comprised of 50 representatives. A poll was utilized to gather data. The information investigation uncovered that the organization didn't direct a preparation needs appraisal prior to laying out a preparation program and afterward choosing representatives for preparing. Notwithstanding the association's continuous preparation responsibility, the review found that assessing individual preparation needs through it was not underlined to prepare needs evaluation. Accordingly, most workers had no idea if their performance was being assessed or whether they were being considered for training. According to the report, the company should stress the need of doing a training needs assessment prior to training.

Salome (2018) investigated the association between contract management techniques and housing building project performance in Nairobi City County. The target demographic consisted of 66 respondents from house development projects in the National Construction Authority. A survey of 66 people was conducted. The study relies on primary data gathered through the use of a questionnaire. The study discovered a substantial favorable association between contract management methods and project performance. Nsanzimana and Mulyungi's (2020) study looked at the impact of contract management strategies on the implementation of Kigali Road construction projects: Case Study for Rwandex-Remera Road Construction Project. Descriptive research was used in the study. The target population includes 62 people, which includes project managers, contractors, customers, and all Rwandan Transport Development Authority staff. Because the population was tiny in this study, the researcher used a census sample technique. The research discovered strong and positive communication between management processes and the success of the Remera-Rwandex road construction project.

Wambani (2017) assessed the effect of provider relationship the executives on the functional execution of sugar delivering endeavors. The reason for the review was to examine the impacts of provider connections on the functional execution of sugar creation endeavors in Kakamega County. A graphic cross-sectional study research configuration was utilized in the review. The review zeroed in on three sugar creation organizations in Kakamega County. A survey was utilized to gather data. The review's discoveries exhibited a positive and critical relationship between provider relationship the board and functional achievement.

Chepkorir (2017) examined how the management of supplier relationships affects procurement performance using Almasi Beverages Ltd as an example. Almasi Beverages Ltd provided 426 respondents for the target population. That's what the review's discoveries uncovered Almasi Beverages Ltd teaches its suppliers by subjecting them to quality requirements. According to the findings of the study, organizations classify their suppliers into bunches in view of value improvement, with quality improvement being underscored all through the acquirement cycle to aid in supplier relationship management and procurement performance.

Luo, Sha, and Huang (2013) conducted research to determine how data and information trade impacts the purchaser provider relationship and execution in the gadgets area. The overview instrument utilized in the review was developed based on previous research. The target population consisted of 117 electronic component suppliers. Face-to-face interviews were used to obtain data. According to the findings of the study, information sharing can be triggered by information exchange, which can increase the buyer-supplier connection and supplier performance.

## **RESEARCH METHODOLOGY**

The study used a descriptive research design. According to Stangor (2014), descriptive research design is a way of assessing people's characteristics, reporting and observation behaviors, awareness of programs, attitudes or ideas, and needs, and their relevance to present the current state of occurrence. A census of 50 people was conducted. This is because, according to Mugenda and Mugenda (2003), if the number of cases is less than 100, the entire population can be analyzed in a quantitative study. Six respondents were given questionnaires as a test run. Moreover, these responders were not considered in during data analysis. Cronbach's Alpha coefficient was used to test for internal consistency. In this case, variable items that are above this internal consistency threshold were kept, and an overall value of greater than 0.7 was adopted to validate that the instrument is reliable. Questionnaires were administered through drop and pick. Descriptive statistics and inferential analysis were carried out.

## **FINDINGS AND DISCUSSION**

### **Descriptive Findings**

#### ***Training Needs Assessment***

The study's first objective was to determine how training needs assessments affected how road construction projects in Wajir County performed. On a Likert scale of 1 to 5, study participants indicated how much they agreed or disagreed with various statements on training needs assessment. Table 1 displays the average outcomes.

Table 1: Descriptive Results on Training Needs Assessment

Statement	1	2	3	4	5	Mean	Std Dev
The assessment of training needs has helped the County to detect knowledge and technical skill deficiencies before they become an issue.	9.1%	11.4%	22.7%	36.4%	20.5%	3.48	1.21
The assessment of training needs has ensured that the training is focusing on the relevant areas.	2.3%	9.1%	15.9%	20.5%	52.3%	4.11	1.13
The County was able to target the right persons for each training session thanks to a training needs analysis.	0.0%	9.1%	36.4%	31.8%	22.7%	3.68	0.93
The assessment of training needs has assured that the training is meeting the actual business demand.	4.5%	9.1%	29.5%	22.7%	34.1%	3.73	1.17
The identification of training needs has enabled employees to learn the necessary information and skills to execute their jobs.	6.8%	6.8%	25.0%	38.6%	22.7%	3.64	1.12

The results of the study indicated that majority of the respondents, represented by a mean of 3.48 and 36.4 percent agreed that the assessment of training needs has helped the county to detect knowledge and technical skill deficiencies before they become an issue. However, a standard deviation of 1.21 shows that responses are spread out from the mean of 3.48. Another statement sought to find out whether the assessment of training needs has ensured that the training is focusing on the relevant areas. In this case, majority represented by a mean of 4.11 and percentage of 52.3 strongly agreed. On whether the County was able to target the right persons for each training session thanks to a training needs analysis, the largest proportion of the respondents, 36.4 percent, moderately agreed. This is also confirmed by a mean of 3.68 as a standard deviation of 0.93 is relatively small implying that responses were well clustered around the mean. The findings also show that majority of study participants, mean 3.73 and standard deviation 1.17, moderately agreed that the assessment of training needs has assured that the training is meeting the actual business demand. Similarly, as represented by 38.6% and a mean of 3.64, majority of respondents agreed that the identification of training needs has enabled employees to learn the necessary information and skills to execute their jobs.

### **Contract Management**

The next objective of this study was to determine how contract management affects performance of road construction projects in Wajir County. Table 2 displays the means and standard deviations of the responses on this variable.

Table 2: Descriptive Results on Contract Management

Statement	1	2	3	4	5	Mean	Std Dev
With the correct validation and certification tools, a contact management system has enabled significantly improved efficacy in supplier onboarding.	18.2%	4.5%	20.5%	29.5%	27.3%	3.43	1.42
Content management has made it possible to easily identify contracts with diverse vendors inside the County.	6.8%	15.9%	22.7%	27.3%	27.3%	3.52	1.25
A contract management system has aided in the reduction of legal fees and the elimination of unplanned renewals of undesirable services.	6.8%	11.4%	31.8%	20.5%	29.5%	3.55	1.23
A contract management system has enabled the tracking of crucial project milestones.	9.1%	11.4%	34.1%	29.5%	15.9%	3.32	1.16
A contract management system has supplied users with automated alerts and features that allow them to schedule notifications as needed.	9.1%	4.5%	15.9%	38.6%	31.8%	3.80	1.21

The results of the study in table 2 indicated that majority of the respondents as represented by a mean of 3.43 moderately agreed that with the correct validation and certification tools, a contact management system has enabled significantly improved efficacy in supplier onboarding with only 18.2 percent of the respondents strongly disagreeing. However, with regard to this statement, there was a relatively high variation in responses as standard deviation is 1.42. On whether content management has made it possible to easily identify contracts with diverse vendors inside the County, as shown by a mean of 3.52, the largest proportion (27.3%) moderately agreed while a standard deviation of 1.25 indicates a high spread of the responses among respondents.

Moreover, results show that majority of respondents, 31.8 percent and mean of 3.55, moderately agreed that a contract management system has aided in the reduction of legal fees and the elimination of unplanned renewals of undesirable services. However, a standard deviation value of 1.23 shows that the responses were not particularly clustered around the mean. Another statement intended to find out whether a contract management system has enabled the tracking of crucial project milestones whereby the largest proportion of respondents, 34.1 percent and mean of 3.32, moderately agreed. Again, a standard deviation value of 1.16 shows that the responses were spread out from the mean value. The last statement sought to establish whether a contract management system has supplied users with automated alerts and features that allow them to schedule notifications as needed. In this case,



the largest proportion of respondents, 38.6% and mean 3.8 agreed. However, as with most of the other statement, responses to the above statement were not clustered around the mean of 3.8 as confirmed by a standard deviation of 1.21.

### ***Supplier Relationship Management***

This study also determined the influence of supplier relationship management on performance of road construction projects in Wajir County. The average responses are as shown on Table 3 based on a Likert scale of 1-5 using mean and standard deviation.

Table 3: Descriptive Results on Supplier Relationship Management

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>	<b>Std Dev</b>
A positive supplier connection has resulted in the exchange of ideas and feedback, which has helped to improve operations.	4.5%	2.3%	31.8%	40.9%	20.5%	3.70	0.98
Good supplier ties have resulted in cost reductions.	4.5%	6.8%	29.5%	36.4%	22.7%	3.66	1.06
The County has been able to identify waste causes and solutions to eliminate them thanks to a supplier relationship management platform.	4.5%	11.4%	22.7%	29.5%	31.8%	3.73	1.17
The improvement in communication has resulted from the creation of a positive relationship between the County and the provider.	9.1%	11.4%	31.8%	31.8%	15.9%	3.34	1.16
The supplier relationship management strategy has strengthened the County's supply chain.	4.5%	2.3%	34.1%	31.8%	27.3%	3.75	1.04

As indicated on table 3, the largest percentage of the respondents, 40.9, agreed that a positive supplier connection has resulted in the exchange of ideas and feedback, which has helped to improve operations. This is also confirmed by a mean of 3.7 whereas a standard deviation of 0.98 is small indicating that responses were not spread out from the stated mean. on whether good supplier ties have resulted in cost reductions, the largest fraction of respondents 36.4 percent, agreed and this was confirmed by a mean of 3.66. The next claim sought to find out whether the County has been able to identify waste causes and solutions to eliminate them thanks to a supplier relationship management platform. In this case, a significant part of the sample, 31.8% strongly agreed while a mean of 3.73 shows that overall, respondents moderately agreed. However, the data around the mean had a lot of volatility and was widely dispersed with standard deviation of 1.17. On whether the improvement in communication has resulted from the creation of a positive relationship between the County and the provider,

majority of respondents, mean 3.34 and standard deviation of 1.16 moderately agreed as only 9.1 percent strongly disagreed. The final statement was intended to determine whether the supplier relationship management strategy has strengthened the County's supply chain. In this regard, the largest proportion of respondents, 34.1 percent, moderately agreed. This is also confirmed by a mean of 3.75 while only 4.5 percent of the sampled participants strongly disagreed.

### **Information Sharing**

The study's final objective was to determine how Information Sharing affects performance of road construction projects in Wajir County. On a Likert scale of 1 to 5, study participants indicated how much they agreed or disagreed with various statements on Information Sharing. Table 4 displays the average outcomes.

Table 4: Descriptive Results on Information Sharing

Statement	1	2	3	4	5	Mean	Std Dev
Employees of the County now feel that they are a part of the organization because to information sharing.	4.5%	4.5%	31.8%	29.5%	29.5%	3.75	1.08
The sharing of information has enabled the incorporation of procedural changes into the County's project management.	9.1%	11.4%	36.4%	18.2%	25.0%	3.39	1.24
The use of information sharing tools has made it possible for vital project information to be disseminated broadly and swiftly within the county.	9.1%	13.6%	22.7%	27.3%	27.3%	3.50	1.28
The sharing of information has resulted in better and faster decision making.	4.5%	15.9%	18.2%	40.9%	20.5%	3.57	1.13
Knowledge loss has been decreased as a result of information exchange.	2.3%	9.1%	40.9%	22.7%	25.0%	3.59	1.04

The results of the study indicated that majority of the respondents, 31.8 percent and mean 3.75, moderately agreed that employees of the County now feel that they are a part of the organization because to information sharing. A standard deviation of 1.08 indicates a large amount of variation in the sampled respondents. Similarly, majority of respondents represented by 36.4 percent and mean of 3.39 moderately agreed that sharing of information has enabled the incorporation of procedural changes into the County's project management. The responses were not highly centered around the mean, however, as indicated by the standard deviation value of 1.24. With regard to the statement that use of information sharing tools has made it possible for vital project information to be disseminated broadly and swiftly within the county, the

largest percent of respondents, 27.3, agreed or agreed strongly whereas a mean of 3.5 indicates that overall majority moderately agreed. Only 9.1 percent of the respondents strongly disagreed and a standard deviation of 1.28 shows data around the mean had a lot of volatility and was widely dispersed. The next statement was meant to establish whether sharing of information has resulted in better and faster decision making whereby only 4.5 percent of the participants strongly disagreed but the largest fraction, 40.9 percent, agreed. This is also shown by a mean of 3.57 which indicates majority of respondents moderately agreed. The last statement established whether knowledge loss has been decreased as a result of information exchange whereby a mean of 3.59 demonstrates that majority of respondents moderately agreed. Only 2.3 percent of the respondents strongly disagreed and a standard deviation of 1.04 indicates volatility of data around the mean.

### ***Project performance***

The measures of project that were used in this study were project quality and completion within time and cost/budget. This section presents the average responses of these indicators as shown on Table 5.

Table 5: Descriptive Results on Project performance

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>	<b>Std Dev</b>
The projects are of excellent quality.	6.8%	13.6%	25.0%	22.7%	31.8%	3.59	1.26
All of the projects were completed under budget.	4.5%	13.6%	22.7%	25.0%	34.1%	3.70	1.21
All of the projects were completed within the timeframes provided.	6.8%	18.2%	27.3%	27.3%	20.5%	3.36	1.20

With regard to the projects being of excellent quality, results show that majority of the respondents moderately agreed (mean=3.59). Similarly, most respondents moderately agreed on the statement that all of the projects were completed under budget (mean=3.7). On whether the projects were completed within the timeframes provided, majority of the respondents also moderately agreed (mean=3.36). However, respective standard deviations of 1.26, 1.21 and 1.2 shows that the responses were spread out from the mean values.

### **Inferential Analysis**

The study set a significance level of 5% on the coefficients of the variables in order to determine the significance of the relationship between procurement management practices and

performance of road construction projects. Results of correlation and regression analysis are shown in the following sections.

### **Correlation Analysis**

The study conducted a correlation analysis to determine the relationship between procurement management practices and performance of road construction projects in Wajir County, Kenya using Pearson correlation coefficient. The Pearson correlation coefficient,  $r$ , ranges from +1 to -1 with values closer to either value indicating strong positive or negative association respectively. The study findings on correlation are as presented in Table 6.

Table 6: Results on Pearson Correlation Analysis

<b>Correlations</b>		Training needs assessment	Contract management	Supplier relationship management	Information sharing	Project Performance
Training needs assessment	$r$	1				
	Sig.					
Contract management	$r$	.547**	1			
	Sig.	0				
Supplier relationship management	$r$	0.288	0.271	1		
	Sig.	0.058	0.075			
Information sharing	$r$	.454**	.522**	0.23	1	
	Sig.	0.002	0	0.133		
Project Performance	$r$	.571**	.492**	.432**	.549**	1
	Sig.	0.000	0.001	0.003	0.000	
	N	44	44	44	44	44

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

As indicated in table 6 above, training needs assessment has a positive and significant relationship with performance of road construction projects in Wajir County, Kenya ( $R = 0.571$ ,  $p=0.000$ ). This implies that a positive change in training needs assessment results to significant improvement in performance of road construction projects in Wajir county. Similarly, there was a moderate positive and significant relationship between contract management and performance of road construction projects in Wajir County, Kenya ( $R = 0.492$ ,  $p=0.001$ ) whereby a positive variation in contract management results to positive and significant change in performance of road construction projects in Wajir County.

The results also show existence of a positive and significant relationship between supplier relationship management and performance of road construction projects in Wajir County ( $R = 0.432$ ,  $Sig=0.003$ ). The findings imply that an improvement in supplier relationship management results to positive and significant change in performance of road construction projects in Wajir County. Additionally, a positive and significant relationship exists between information sharing and performance of road construction projects in Wajir County, Kenya ( $R = 0.549$ ,  $Sig=0.000$ ). An improvement in information sharing therefore results to significant improvement in the performance of road construction projects in Wajir County, Kenya.

### **Regression Analysis**

A multiple regression model was employed with summary findings shown in table 7 to determine the effect of procurement management practices on the performance of road construction projects in Wajir County, Kenya.

Table 7: Model Summary

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.705	0.497	0.445	0.561452

Predictors: (Constant), Information sharing, Supplier relationship management, Training needs assessment, Contract management

The model summary results indicate that the procurement management practices had a strong positive influence on performance of road construction projects in Wajir County as shown by a joint Pearson correlation of 0.705. The coefficient of determination (R-square) is 0.497 implying that procurement management practices (Information sharing, Supplier relationship management, Training needs assessment, Contract management) jointly account for up to 49.7% of the variation in performance of road construction projects in Wajir County. The results on significance of the model are presented in table 8 below.

Table 8: Model Significance

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	12.138	4	3.034	9.626	.000
Residual	12.294	39	0.315		
Total	24.432	43			

a Dependent Variable: Project Performance  
 b Predictors: (Constant), Information sharing, Supplier relationship management, Training needs assessment, Contract management

The results indicate that the overall model was statistically significant. Further, the results imply that procurement management practice is a good predictor of performance of road construction projects in Wajir County. This was supported by an F statistic of 9.626 higher than the F (4, 39) critical value of 2.462 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level. This suggests that the practices of procurement management such as information sharing, supplier relationship management, training needs assessment, and contract management are appropriate predictors of the change in performance of road construction projects in Wajir County, Kenya. Regression coefficients are presented in Table 9.

Table 9: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.024	0.77		1.33	0.191
Training needs assessment	0.385	0.176	0.308	2.183	0.035
Contract management	0.112	0.165	0.099	0.676	0.503
Supplier relationship management	0.364	0.177	0.247	2.059	0.046
Information sharing	0.401	0.183	0.301	2.187	0.035

a Dependent Variable: Project Performance

**Thus, the optimal regression model with significant only coefficients is:**

*Road construction project performance = 1.024 + 0.385 Training needs assessment + 0.364 Supplier relationship management + 0.401 Information sharing*

The regression results as shown in Table 9 indicate that training needs assessment positively and significantly influence performance of road construction projects in Wajir County, Kenya as shown by beta value of 0.385 and p-value of 0.035 which is less than 0.05. This implies that a positive change in training needs assessment, all other factors held constant at zero would result to a significant improvement in performance of road construction projects in Wajir County. The results are collaborated by the findings of Laban, Thuo, and Mutegi (2017) who found a positive influence of assessing training needs on organization's project success. It was suggested that a training needs assessment look at the skills, knowledge, and abilities needed by the affected occupational groups. A training needs assessment therefore positively influences the level of performance of organizational projects. On the same note, contract management practices positively influenced performance of road construction projects in Wajir County as shown by beta value of 0.112. However, this effect is not significant as confirmed by a p-value of 0.503 which is greater than 0.05. The implication in this case is that an

improvement in contract management practices, *ceteris paribus*, results to insignificant improvement in performance of road construction projects in Wajir County. The results backed up the findings of Nsanzimana and Mulyungi's (2020) which discovered a positive relationship between contract management processes and the success of the Remera-Rwandex road construction project.

Similarly, the results indicate that that supplier relationship management positively and significantly influenced performance of road construction projects in Wajir County, Kenya as shown by beta value of 0.364 and p-value of 0.046. This implies that a positive change in supplier relationship management would result to a significant improvement in performance of road construction projects in Wajir County if all other factors are held constant at zero. Mumelo et al. (2017) suggested that supplier relationship management ensures the supply of trustworthy and consistent deliveries which benefit all parties involved, including purchasing and supply firms thereby improving project performance. Wambani (2017) also exhibited a positive and significant relationship between provider relationship and functional achievement of a project.

Lastly, information sharing positively and significantly influenced performance of road construction projects in Wajir County, Kenya as shown by beta value of 0.401 and p-value of 0.035. This implies that a positive change in information sharing would result to a significant improvement in performance of road construction projects in Wajir County. This finding is supported by Baihaqi and Sohal (2013) who revealed that integrated information technologies and data quality expands the power of data sharing in a positive way, and that information sharing has a direct positive relationship with project performance.

## CONCLUSIONS

Based on the study findings results, this study concludes that training needs assessment, contract management, supplier relationship management and information sharing as part of procurement management practices have a positive correlation with performance of road construction projects in Wajir county, Kenya. Similarly, with the exception of contract management, training needs assessment, supplier relationship management and information sharing positively and significantly influenced performance of road construction projects in Wajir county, Kenya. To this end, this study concludes that training needs assessment positively influence performance of road construction projects in Wajir county and this effect is statistically significant. As such, assessment of training needs helps to detect knowledge and technical skill deficiencies before they become an issue, ensures that the training is focusing on the relevant areas, enables the right persons for each training session to be targeted, assures that the

training is meeting the actual business demand and enables employees to learn the necessary information and skills to execute their jobs.

Similarly, the study also concludes that, despite the insignificant effect of contract management on performance of road construction projects in Wajir county, the effect is still positive. Consequently, performance of road construction project is positively affected with correct validation and certification tools, easy identification of contracts with diverse vendors, reduction of legal fees and the elimination of unplanned renewals of undesirable services, tracking of crucial project milestones as well as automated alerts and features. Another conclusion arrived at by this study is that supplier relationship management positively and significantly influenced performance of road construction projects in Wajir County. In this case, a positive supplier connection leads to exchange of ideas and feedback, results in cost reductions and identification of waste causes and solutions to eliminate them, creation of a positive relationship between with the provider and strengthens supply chain performance.

Finally, this study concludes that information sharing positively and significantly influenced performance of road construction projects in Wajir County. To this end, project performance is enhanced when employees feel that they are a part of the organization because of information sharing, if there is incorporation of procedural changes into the project management, when it possible for vital project information to be disseminated broadly and swiftly and better as well as when there is faster decision making and knowledge loss decrease as a result of information exchange.

## **RECOMMENDATIONS FOR PRACTICE**

Based on the above findings and conclusions, this study recommends the county government of Wajir to pay particular attention to procurement management practices as they positively impact performance of road construction projects. Firstly, there is need for Wajir county to focus on training needs assessment as it enables the right people to be targeted for each training session, helps to identify knowledge and technical skill gaps before they become a problem, ensures that the training is meeting the actual business demand, and helps employees acquire the knowledge and skills they need to perform their jobs.

This study also recommends emphasis by wajir county on contract management practices to improve performance of road construction projects. This can be done by using the right validation and certification tools, making it simple to identify contracts with various suppliers, paying less for legal services, stopping unforeseen service renewals, keeping track of important project milestones, and using automated features and notifications.



Moreover, the study recommends Wajir County to focus on supplier relationship management practices as they positively and significantly affect performance of road construction projects. In this regard, it is important to promote a positive supplier relationship because it results in an exchange of ideas and feedback, cost savings, identification of waste causes and ways to eliminate them, development of a good rapport with the provider, and an improvement in supply chain performance. In order to further improve the performance of road construction projects, it is also necessary to pay attention to information sharing practices because they foster a sense of belonging among employees, allow for the incorporation of procedural changes into project management, ensure that project information is disseminated widely, quickly, and effectively, as well as encourage quicker decision making.

### SCOPE FOR FURTHER RESEARCH

Since procurement management practices (Information sharing, Supplier relationship management, Training needs assessment and Contract management) account for 49.7% variability in performance of road construction projects in Wajir County, a study can be done to establish other procurement practices that explain performance of road construction projects. Further, additional research can be done on how public procurement practices affect performance of other public-related projects outside those for road construction.

### REFERENCES

- ABDI, A. A. (2020). *Resource Management Practices and The Performance of Road Infrastructure Projects in Wajir County, Kenya* (Doctoral Dissertation, Kenyatta University).
- Aputo, S. L. (2017). *The Effect of Procurement Functions On Project Performance In Non- Governmental Organizations In Nairobi County, Kenya* (Doctoral dissertation, KCA University).
- Baihaqi, I., & Sohal, A. S. (2013). The impact of information sharing in supply chains on organisational performance: an empirical study. *Production Planning & Control*, 24(8-9), 743-758.
- Chepkorir, L. V. (2017). *An Assessment of the Effect of Supplier Relationship Management Strategies on Procurement Performance: A Case Study of Almasi Beverages Limited*
- Damoah, I. S., & Kumi, D. K. (2018). Causes of government construction projects failure in an emerging economy: Evidence from Ghana. *International Journal of Managing Projects in Business*.
- Ejakait, J. E. (2016). Effects of training needs assessment on employee performance in the postal corporation of Kenya, Bungoma County. *Research on Humanities and Social Sciences*, 6(17), 140-145.
- Eriksson, P. E., & Vennström, A. (2015). Effects of procurement on project performance: a survey of Swedish construction clients. *Journal of Business Management*, 1(1), 2 - 14.
- Kirigia, E. (2018). *Project procurement practices and operational performance of donor funded projects at United States Agency for International Development in Kenya* (Doctoral dissertation, University of Nairobi).
- Laban, J. M., Thuo, A., & Mutegi, D. (2017). Effect of Training Needs Assessment on Organizational Performance in the Counties in Kenya a Case Study of City County of Nairobi. *International Journal of Current Aspects in Human Resource Management (IJCAHRM)*, 1(1), 44 – 59.
- Loosemore, M., & Reid, S. (2019). The social procurement practices of tier-one construction contractors in Australia. *Construction management and economics*, 37(4), 183-200.

- Luo, H., Sha, S., & Huang, G. Q. (2013). The impact of information and knowledge sharing on the buyer-supplier relationship and performance in electronics industry. *IFAC Proceedings Volumes*, 46(9), 1944-1949.
- Islam, M. M., Murad, M. W., McMurray, A. J., & Abalala, T. S. (2017). Aspects of sustainable procurement practices by public and private organisations in Saudi Arabia: an empirical study. *International Journal of Sustainable Development & World Ecology*, 24(4), 289-303.
- Marshall, D., McCarthy, L., Claudy, M., & McGrath, P. (2019). Piggy in the middle: How direct customer power affects first-tier suppliers' adoption of socially responsible procurement practices and performance. *Journal of business ethics*, 154(4), 1081-1102.
- Mugenda, O. & Mugenda, A. (2003). *Research Methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press
- Mumelo, J. N. (2017). *Mumelo-Influence of supplier relationship on performance of small scale enterprises in Bungoma Town, Kenya* (Doctoral dissertation, JOOUST).
- Mutuku, M. K., Muathe, S., & James, R. (2019). Mediating effect of competitive advantage on the relationship between e-commerce capability and performance: Empirical evidence from commercial banks in Kenya. *European Journal of Business and Management*, 11(17), 48-57.
- Mutuku, M. K. (2019). *Electronic Commerce Capability and Performance of Commercial Banks in Kenya* (Doctoral Dissertation, Kenyatta University).
- Ndei, F. M., & Mutuku, M. (2021). Electronic Procurement and Performance of Non-Governmental Organizations in Kenya. Empirical Evidence from Pathfinder International, Kenya. *J. Bus. Manag. Sci*, 9, 71-80.
- Nsanzimana, J., & Mulyungi, P. (2020). *Effect of Contract Management Practices on Performance of Road Construction Projects in Kigali: A Case of Rwandex-Remera Road Construction Project* (Master's Project, Kigali University).
- Odero, J. A., & Ayub, S. E. (2017). Effect of procurement practices on procurement performance of public sugar manufacturing firms in Western Kenya. *International Journal of Management Research and Reviews*, 7(4), 521.
- Salome, O. L. (2018). *Contract management practices and performance of housing construction projects in Nairobi City County, Kenya: A Case of National Construction Authority* (Doctoral dissertation, Kenyatta University).
- Stangor, C. (2014). *Research methods for the behavioral sciences*. Nelson Education.
- Vaidya, K., & Campbell, J. (2016). Multidisciplinary approach to defining public e-procurement and evaluating its impact on procurement efficiency. *Information Systems Frontiers*, 18(2), 333-348.
- Wambani, W. A. (2017). *Supplier Relationship Management and Operational Performance of Sugar Manufacturing Firms in Kakamega County, Kenya* (Doctoral dissertation, University of Nairobi).
- Zulu, A. T. (2020). *A critical analysis of procurement management practices and their impact on the success of construction projects—A Case Study of Road Development Agency* (Doctoral Dissertation).