



THE EFFECT OF POST-CONTRACTING PROCUREMENT PRACTICES ON SUPPLY CHAIN PERFORMANCE IN ROAD SECTOR IN KAKAMEGA COUNTY

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ABSTRACT

Public institutions have continuously faced the challenge of ensuring that supply chain performance is optimal. Institutions are operating in a competitive business environment that is dynamic and unpredictable. Due to this factor supply chain performance levels in most public institutions is wanting. Key to optimal performance is understanding the procurement practices. The study focused on the effects of the post-contracting procurement practices on the supply chain performance in road sectors, Kakamega County. The study covered three road sectors in Kakamega County, KeNHA, KURA, KeRRA.

Methodology: Research design used was explanatory. The target population was 48 respondents that comprised of supply chain officers, roads officers and accounts officers on the road sector institutions. Census method was adopted in the study. Structured questionnaires were used as a data collection instruments. Pilot testing was conducted in Vihiga County. Data was analyzed using normality, multi-collinearity and regression. Data presentation was done diagrammatically by use of tables and figures.

Findings: Post-contracting procurement has a significant influence on supply chain performance in Road Sector in Kakamega.

Conclusion: The study concluded that the KeNHA, KURRA and KeRRA can promote supply chain performance by adopting the procurement practices in all the levels of contracting especially post contracting activities.

Recommendation: the study recommended the use of post contracting procurement practices as it poses the biggest contributions to supply chain performance.

Key Words: Post- Contracting, Supply Chain Performance.

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INTRODUCTION

Procurement is becoming a basic component in many business organizations in order to operate beyond the traditional boundaries. Guinipero, (2006) defined procurement as an accession of commodities, skills as well works needed in a firm objectively to meet the five purchasing rights that enables a company achieve its goals. Procurement means “acquisition by purchase, rental, lease, hire purchase, license, tenancy, franchise, or any other contractual means, of any type of works, services or supplies or any combination”, (PPDA2005). The acquisition process begins when the need arises from the user departments and thereafter the procurement requirements are decided on. The entire process involves risk assessment, contractor sourcing and evaluation, contract management, delivery and payment. Waters (2004), asserts that procurement process goes beyond purchase, it extends to the products disposal end-life-cycle.

According to Sollish and Semanik (2012), procurement practices are the organizational responsibilities performed to enhance the end results in the chain of supply. According to CIPS, (2007) UK procurement practices are the procurement activities performed by the buying firm. There are various variables that impact procurement practices including: management and accountability, understanding of the procurement practices, firm’s capability in handling stakeholder’s objectives, proper forecasting, supply chain relationships and power balance in the supply chain. A study by Makori (2017) opined that procurement practices may involve adoption of new technologies, contracting activities, building buyer-contractor relationships and team approach to procurement. An observation by Dahwa (2010) indicated that procurement practices include: setting standard specifications for goods needed, contractor prequalification, contract management and order processing. Rono (2017) stipulated that procurement practices greatly improves the supply chain management performance when well managed and integrated. Most organizations are

moving towards integrating their pre-contracting and contracting procurement practices so as ensure transparency, accountability and efficiency.

Post contracting are the activities done in the great grand finale of the procurement process. For the institutions to receive value for money, post contracting practices is crucial. In this phase inspection and acceptance is done to ensure that the contract requirements are met. The Whole-of Government contracts and management established a coordinated procurement contracting initiatives that enables institutions enhance on savings and efficiencies. A study by Wanjugu, Kiarie & Marendi (2018) Indicated that management and inspection of contractor or supplier performance ensures desired performance levels are realized. Further posed that the benefit realized extends beyond the active phase of the contract to the final phase of the contract.

Research Objective

Establish the effect of post-contracting procurement practice on the supply chain performance on road sector in Kakamega. The study was guided by research hypothesis;

- **H₀:** Post-contracting procurement practice has no significant influence on supply chain performance on road sector in Kakamega County.

LITERATURE REVIEW

Theoretical Literature review

System Theory

Institutions as systems consists of many units referred to as sub systems that are interdependent to each other. As these institutions develop and bring in more units they become more complex that makes coordination a vital element with each unit (Shane & Von 2003). The theory focuses on the interdependencies of these subsystems in an organization. The theory was propounded by Ludwig Von Bertalaniffy in 1950.

The interrelations and interdependence of the elements in the supply chain is natural. This means

that when a subsystem is affected or when it's not performing the other elements are affected by the same measure. Based on the system theory, an organisation is a system where elements are arranged and interact with each other. With this interrelations, management need to play skillfully to strike a balance so as to optimize performance. Modern organizations face the difficulty in incorporating a specific management style in planning and decision making (Chekere, 2015). The system theory also advocates for a participatory relationship in supply chain planning in to boost performance.

Institutions does not exist in vacuums. These organizations are dependent on the environment both external and internal where the external environment has the larger system (Weihrich, 2008). The theory depicts that the organization as a system is dependent on the environment, organization exchanges information from the external environment and materials. Procurement as a process involves a number of parties that are interdependent. Contractors are dependent to organizations for quick payment and development through trainings whereas the organization for quick deliveries of products that are of good quality and quantity that will enhance performance. In conclusion therefore, the theory gives a good platform for illustrating the connectedness and complex nature of the supply chains.

Agency Theory

Agency theory tries to describe the agency relationship, where the principal delegates work to the other person who is the agent, who performs that work (Gohlich, 2012). The theory was first propounded by Ross and Mitnick (1973). Agency theory is management theory that clearly explains the relationships and interest of a firm. Two problems can arise in such relationships, the desires and goals of the principal and agent can conflict and it is difficult for the principal to verify what the agent actually is doing. Principal-agent researchers are concerned with a general theory of the principal-agent relationship, a theory that can be

applied to employer-employee, buyer-contractor and other agency relationships. Agency theory is most relevant in situations in which contracting problems are difficult. These include situations in which there is a substantial goal conflict between principals and agents and sufficient outcome uncertainty to trigger the risk implications of the theory (Fayezi, O'Loughlin, and Zutshi, 2012).

Fayezi, O'Loughlin, and Zutshi, (2012) discusses the assumptions of the theory and raises the issue of principals learning about the agents when there is a long term relationship, when there may be less need for outcome-based contracts. This may be more the case with procurement in the private sector, where there are fewer regulations than in the public sector, and where tendering criteria's is not strictly implemented. This theory is relevant to this study since it will provide guidelines on development of long term relationships between the buying agencies and the supplies under contractor development. The limitation of the Agency theory is that an agency problem may arise between managers and shareholders because the principals (the shareholders) cannot adequately monitor the actions taken by the agent (the managers).

The theory provides a useful framework in designing governance and controls in organizations. The agency theory explains how best to organize relationships in which one party (principal) determine the work of the other party (agent) and performs on behalf of the principal (shchroeder, 2011).

Institutional Theory

Institutions are influenced by other institutions which impacts on their behavior and decision making and thus such pressure gradually creates institutions rules. For example, the government, media and other public associations greatly influence institutions behavior. Institutions seek survival and growth and therefore conforming to such critical pressures that influence internal operations is vital.

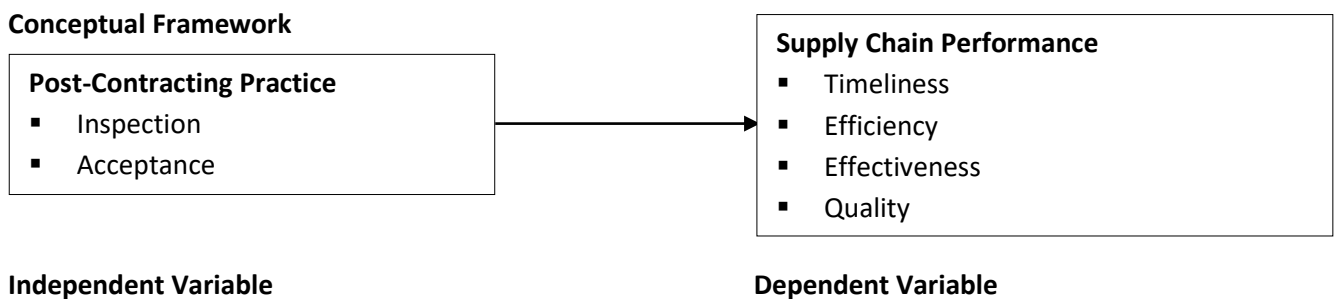
Institution theory came to existence in the late 1970s being propounded by John Meyer and Brian Rowan. The spirit was to explore how organization is shaped by society, state, national and international environment. According to Carvalho, Cuhna and Carstens (2017), the growth of institutional theory is due to the articles done by Dimaggio and Powell (1983) and Rowan (1991). Institutional theory is an add-on of the intellectual revolution that started in 1960 which gave rise to the idea of open system in the study of organizations, (Carvalho, Cuhna & Carstens, 2017).

According to Scott and Davis (2008), institutions consist of cultural cognitive, normative and regulative pieces which together brings stability and purpose of life. These institutions comprise of informal rules that they follow based on the results expected by the society they operate in and this defines their actions thus shaping their processes. The theory stipulates that institutional behavior and decision making is impacted by the external institutional pressures. The institutional behavior

stems Coercive isomorphism, mimetic isomorphism, and normative isomorphism are all cases of isomorphism. The coercive isomorphism explains how the government exerts pressure on the institution, influencing its processes. In this case, KeNHA, KURA, and KeRRA are all state-regulated and monitored by the other institution, PPDA (2005), and PPOA.

As observed by Jones and George (2009) procurement in public entities is controlled by a number of formal and informal rules that shapes its functions and behaviors. This ensures efficiency, transparency and effectiveness. The theory therefor explains clearly the relationship between the laws/policies set and the supply chain performance of the public institutions, road sector. The institutional theory provides an excellent framework of understanding how organizations are shaped by the other external institutions, norms and rules in order to ensure survival and compliance.

Conceptual Framework



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Review of the variables

Post-contracting procurement practices

The activities done in the grand finale of the procurement process. These are activities of inspection to ensure that the specifications are met. This process starts after the contracting process is over. For the institutions to receive value for money, post contracting practices is crucial. In this phase inspection and acceptance is done to ensure that the contract requirements are met. The Whole-of Government contracts and management established a coordinated procurement contracting

initiatives that enables institutions enhance on savings and efficiencies. A study by Wanjugu, Kiarie & Marendi (2018) Indicated that management and inspection of contractor or supplier performance ensures desired performance levels are realized. Moreover, the benefit realized is not only realized during in the contracting stage, but the value delivery continues throughout the contract's life.

Morgan and Yeung (2007) opined that many countries have sought to reform inspections since 1995 where Mexico started and from then many nations have followed up to latest Italy in 2011.

These reforms in inspections are focused on risk, compliance and output. According to Ondiek and Oteki (2015) inspection occur so that the public institution confirms that the work performed is within the specified standards. Business operations is becoming more complex and therefore the institutions strive to enhance their operations to have a competitive advantage and retain customers, (Kabaj 2014). These calls for managers to embrace all the techniques in procurement that will advance the efficiency of the supply chain, (Moharity, 2011). Gituro (2013) observed that about 75% of public institutions in the world does not conduct inspection effectively and thus incur extra cost of rework and poor performance levels. Inspection reduces a lot of risks that an organization can get, (Trepte, 2013). Once the effective inspection is done contractor or contractor complaint is immediately created if the delivered output is not within the specified specifications. This contributes to getting the most for your money and so achieving quality, effectiveness, and efficiency.

About 30% of the procurement performance issues is attributed to contractor inefficiencies (PPOA, 2017). Public procurement is still facing challenges of poor products and services and substandard works (Ahmad, 2011). Lack of the implementation of the enacted procurement policies In real situation inspection results to poor business operations, high costs of business transactions and poor deliveries (Kumar, 2012).

A study by Njuki (2013), on the importance of inspection of purchases in the management established that an organization's profitability and performance levels are significantly influenced by the inspection and acceptance team. Citizens have raised concern on the procurement process of the public institutions since deliveries are or poor standards. In real situations, inspection is expected to positively influence supply chain performance in public sectors which is not the case. However, Scheele (2013) observed that inspection of

purchases inefficiencies is at its highest 93% that leads still to poor supply chain performance.

Despite several studies, lately little information on the effect of inspection on the efficiency of supply chain in public institutions is available. Public institutions have several activities that are performed by contractors or contractors in day to day operations that need to be inspected to avoid unsatisfactory or shoddy works. Lack of effective inspection leads to poor supply chain performance.

Supply chain performance

Performance of any organization is attached to the end results of the supply chain. Chain of supply is a network that integrates various activities from customer to contractor to firm and services (Zigiari, 2000). Performance of the supply links, according to Warren (2002), are activities extended in the link in meeting the end-user needs that encompasses availability of product, right time delivery and right quality and quantity. Efficient management of supply chains would impact the supply chain performance by ensuring that the five rights of purchasing are met and thus customers' demands are met satisfactorily. According to Kwai (2005), supply chain performance encompasses three components; minimization of cost, customer satisfaction and timeliness in delivery and services. A well-managed supply chain enhances the firm's competitiveness, customer services and the profitability levels. A study done by Azevedo & Cruz (2011) noted that supply chain performance is crucial and strategic. Most public institution is aware that supply chain management need to be assessed on performance, processes to be organized and controlled. Businesses must enhance supply chain performance due to growing market demand for quality services in public institutions. Simchi (2008) stipulated that companies that excel in the world wide environment highly is as a result of efficient supply chain and its ability to satisfy the end users.

Stakeholders and management evaluate the institutions operations and processes using the outcome. Good performance opens up for more

donors and investors and this creates confidence to management. Since the rise of the concept of performance measurement several metrics have been introduced to help measure performance of institution. For instance, quality management, economic value added, value analysis, (Haar and Spell, 2008). According to Brush (1992) performance can be measured on effectiveness, realized objectives, quality, employee satisfaction, efficiency on operations and time element apart from financial measures. The supply chain performance is measured against quality works, cost efficient processes, timeliness, effectiveness and environmental responsibility, (Adeyemi & Salami 2010). Measuring performance is vital since it enables identify entities weaknesses and strengths, potential risks and opportunity in the operations and therefore corrective measures are taken, (Walker & Rowlinson (2008).

METHODOLOGY

This study employed descriptive survey design. A research design is the entire methodological frame of the study (Ayacko, 2016). This is because descriptive research design suitably describes the population. The target population for this study was supply chain staff, finance staff and the technical team (road engineers) because they are fully involved in the levels of contracting procurement process and thus are in good position to have the relevant information sought by this study. Road sector under study were KeNHA, KURRA and KeRRA within Kakamega County that had 48 staff both in supply chain department, accounts department and technical department. The study used census technique. According to Tengeye and Kwasira (2018), census entails collection of complete information from all the participants in the population. Data was collected in all the three public institutions within Kakamega County for the target population of 48 drawn from the Procurement, Accounts and Technical departments. The study used structured questionnaires to collect data from the respondents. This was done through a drop and collect later basis. The pilot testing on

data collection instrument was done in the Vihiga County. 15 respondents responded to the questionnaires in pilot testing. The researcher used cronbach,'s alpha formula to test for the reliability of the research instruments. A Cronbach correlation coefficient greater or equal to 0.6 is acceptable (George and Marley, 2003). To ensure validity of the instruments, the researcher sought for expert opinions especially from the supervisors.

A descriptive analysis was employed to analyze the bio-data. The data was presented through table. Quantitative technique was incorporated in the study to facilitate description and explanations of the study findings. A regression model was used to check the relationship between the variables.

For the purposes of this study, the researcher employed the analytical model to test the hypothesis.

Model 1: Effect of the Level of Contracting Procurement Practices on the Supply Chain Performance

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where;

Y =Represents dependent variable - supply chain performance

X₁ =Represents independent variable 1-pre-contracting

X₂ =Represents independent variable 2- contracting

X₃ =Represents independent variable 3- post-contracting

ε =Represents an error term random variation due to other unmeasured factors

β₀ =Represents y-intercept/constant

β₁, β₂, β₃ = Represents the slopes of the regression equation.

Model 2: Moderating effect of government policy on the relationship between the levels of contracting procurement practices and the supply chain performance.

$$Y = \beta_0 + \beta_1 X_1 z + \beta_2 X_2 z + \beta_3 X_3 z + \varepsilon$$

Where;

Z = represents the moderator

RESULTS, DISCUSSION CONCLUSIONS AND RECOMMENDATIONS

Response Rate

In this study, a total of 48 questionnaires were administered at Road Sector in Kakamega County all

were successfully completed by the respondents which showed a response rate of 100%. This response rate was considered excellent to make conclusions and recommendations for this study.

Table 1: Response rate

Response	f	%
Successful	48	100%
Unsuccessful	0	0%
Total	48	100%

Source: Field Data 2021

According to Mugenda and Mugenda (2003), 50% response rate was adequate, 60% response rate was good and 70% and above response was rated excellent.

Post-Contracting Procurement Practices

The following six statements were formulated to measure Post-Contracting and the respondents were asked to indicate the levels to which they agreed or disagreed with the statements on the questionnaire. The results were presented in the table below: -

Table 2: Post-Contracting Procurement Practices

Post Contracting	5(SA)	4(A)	3(N)	2(D)	1(SD)	Mean	STD
We have an effective inspection and acceptance committee in out institution	37(77.1%)	11(22.9%)	0(0%)	0(0%)	0(0%)	4.7708	0.42474
My institution does inspection on contracts performed	24(50%)	24(50%)	0(0%)	0(0%)	0(0%)	4.5000	0.50529
We always inspect contracts performed immediately to ensure satisfaction is met	23(47.9%)	25(52.1%)	0(0%)	0(0%)	0(0%)	4.4792	0.50485
Only work done that meets the set standards by my institution can be accepted	24(50%)	24(50%)	0(0%)	0(0%)	0(0%)	4.5000	0.50529
Through inspection our institution realizes value for money and quality on services	27(56.3%)	21(43.8%)	0(0%)	0(0%)	0(0%)	4.5629	0.50133
Inspection has led to procurement efficiency since adopted by my institution	24(50%)	24(50%)	0(0%)	0(0%)	0(0%)	4.5000	0.50529

Source: Field Data 2021

A majority of the respondents were in agreement that they had an effective inspection and acceptance committee in their institution as indicated by a mean of 4.7708. With regards to whether their institution did inspection on contracts performed, most of the respondents were in agreement with a mean of 4.5000. As to whether

they always inspected contracts performed immediately to ensure satisfaction was met, a majority of the respondents agreed with a mean of 4.4792. The respondents were also in agreement that only work done that met the set standards by their institution could be accepted as shown by a mean of 4.5000. As to whether inspection enhanced

realization of value for money for the institution, a majority of the respondents were in agreement with a mean score of 4.5629. With regards to procurement efficiency as attributed to inspection, the respondents were in agreement with a mean of 4.5000.

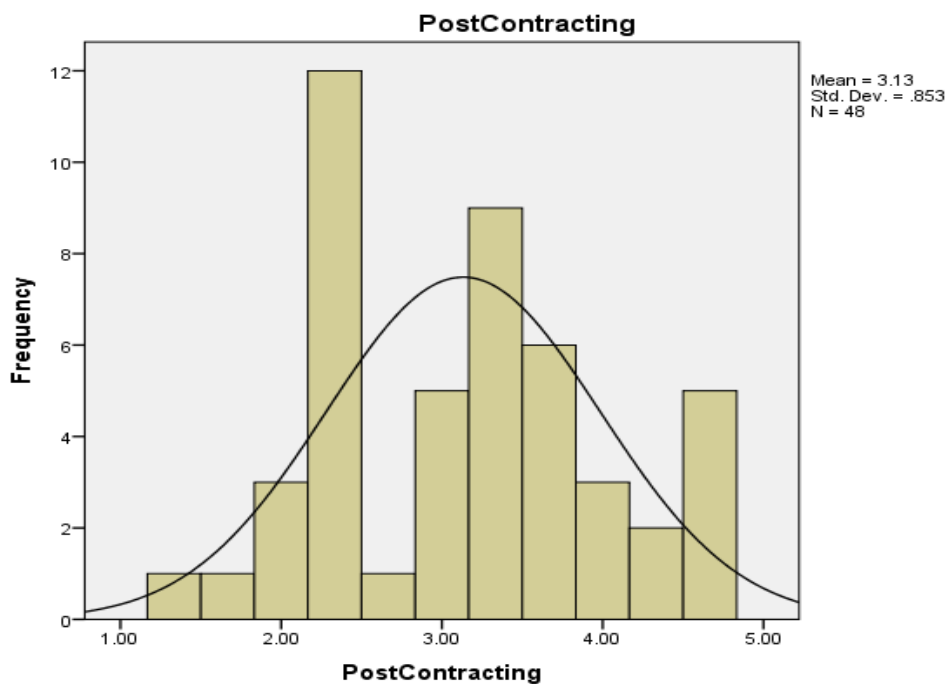
The study agrees with Njuki (2013), who sought to figure out the significance of purchase inspection in management and established that the inspection and acceptance team play a crucial role in an organization's profit growth and performance

levels. Wanjugu et al. (2018) conducted a study on the effects of inspection on procurement performance in Nyeri county level four hospitals., is in agreement that effective inspection impacts positively on the quality products and the whole hospital processes.

However, Kumar (2012) disagrees and argues that in real situation inspection results to poor business operations, high costs of business transactions and poor deliveries.

Test for normality in Post Contracting

Graph 1: Post-Contracting Procurement Practices



The findings of the third independent variable (Post Contracting) indicated normality of responses. The distribution of the histograms show that a majority of the responses are concentrated towards the mean with a mean value of 3.313 and a standard deviation of 0.853. This shows that the assumption of normality was not violated hence the data could be subjected to regression analysis.

Regression Analysis

The regression analysis allows the researcher to explore the relationship between the dependent

and independent variables. According to Sarstedit, Marko & Erik (2014) regression analysis indicates strength of the relationship, makes predictions and indicates if the relationship exists. In this study, the researcher employed simple regression.

Post contracting and Supply Chain Performance

The percentage change in the dependent variable (Supply Chain Performance) as attributed by the independent variable was tested using simple regression analysis (Post Contracting). This was significant in answering the study's third objective,

which was to determine the effect of post-contracting procurement practices on Supply Chain Performance on Kakamega County parastatals in

the road sector. The following table displays the regression results:

Table 3: Regression analysis of post-contracting and supply chain performance

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. Change
1	.387 ^a	.150	.132	.63959	.150	8.118	1	46	.007
ANOVA ^a									
Model		Sum of Squares	df	Mean Square	F	Sig.			
1	Regression	3.321	1	3.321	8.118	.007 ^b			
	Residual	18.817	46	.409					
	Total	22.138	47						
Coefficients ^a									
Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.			
1	(Constant)	3.131	.355		8.822	.000			
	Post-Contracting	.312	.109	.387	2.849	.007			

a. Dependent Variable: Supply Chain Performance

b. Source: Field (2021)

The results indicate an R (Coefficient of correlation) of 0.387 and an R² (Coefficient of Determination) of 0.150. This implied that 15% of the changes in the dependent variable (Supply Chain Performance) was explained by the independent variable (Post Contracting).

The F test gave a value of (1, 46) =8.118, P<0.05, which supports the goodness of fit of the model in explaining the changes in the dependent variable. It also signifies that post contracting was a very important predictor of supply chain performance on Parastatals in the Road Sector in Kakamega County.

The regression equation to measure the changes in supply chain performance as attributed to contracting was stated as below;

$$SCP = 3.131 + 0.312PSC + e$$

Where;

SCP is the Supply Chain Performance

PSC is Post Contracting

When all other external factors are maintained constant, supply chain performance would improve by 3.131 units. With each unit increase in post contracting, there will be a 0.312 increase in supply chain performance. The hypothesis of the study stated that there is no significant relationship between post-contracting procurement procedures and supply chain performance on Kakamega County parastatals in the road sector. The findings of this objective indicated that post contracting had P<0.05 and contributed to 15% of the changes in Supply chain performance. Therefore, the null hypothesis is rejected, and the alternate hypothesis is accepted as post contracting had significant effects on supply chain performance. The study is in agreement with Njuki (2013) who sought to find out the importance of inspection of purchases in the management and established that inspection and the acceptance team had a significant impact on an organization's profitability and performance levels.

Findings: Post Contracting Procurement Practices and Supply Chain Performance

The study found a coefficient of correlation (r) as 0.387**, $P < 0.05$ at 95.0% confidence level. This indicated a positive and significant relationship between Post Contracting and Supply Chain Performance in Road Sector in Kakamega County. The results further indicated an R^2 value of 0.150 indicating that Post Contracting could predict 15% changes in Supply Chain Performance hence a moderate predictor. The finding implicates that post contract procurement practices; Inspection and Acceptance affects supply chain performance though with a small magnitude compared to other procurement practices in the study. The findings are tandem with Mlinga (2014) who conducted a study on contract audit and observed that there is a significant relationship between contract inspection and audit and performance. The findings are also supported by Wanjugu, Kiarie & Marendi (2018) where they have indicated that management and inspection of contractor or supplier performance ensures desired performance levels are realized.

Further added that the benefit realized is not only in the contracting stage but the value delivery continues for the life of the contract. However, Scheele (2013) observed that inspection of purchases inefficiencies is at its highest 93% that leads still to poor supply chain performance. He further added that despite conducting the post-contracting activities, performance of supply chain has not improved.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions: Post contracting procurement practices have a significant influence on supply chain performance in Road Sector in Kakamega. Effectiveness and efficiency are enhanced with the adoption of post contracting procurement practices even though to a lower extent as shown by a low coefficient of determination.

Recommendation: The study recommended adoption of post contracting procurement practices so as to increase its contribution to supply chain performance.

REFERENCES

- Ahmad H., (2011). Formalizing under-the-table payments to control out-of-pocket hospital expenditures in Cambodia '. *Health Policy and Planning* 19:199–208.
- Ayacko, O.M. (2016). Transformational Leadership Style and Its Influence on Performance of Judicial Staff in Kenya. Published Thesis. *United States International University*.
- Fayezi, S. & Zutshi, A., O'Loughlin, A., (2017). Positivist agency theory and sourcing decisions: Perceptions, pressures, and contexts.
- Gituro P, & Bolo D, (2013). *Purchasing Principles and Management*, eighth edition, Prentice Hall: Great Britain
- Kabaj K, (2013). *Research Design in Social Sciences*, Sharma, B.A., Prasad, D.R. and Satyanarayana, P. Research Methods in Social Sciences, Sterling Publishers: New Delhi.
- Moharthy W, (2011). The Determinants of the Global Digital Divide: A Cross-Country Analysis of Computer and Internet Penetration. Discussion Paper No. 881, empirically testing factors that drive ICT
- Njuki B, (2013). Government procurement as a policy tool in South Africa ', *Journal of Public Procurement and distribution*, Vol. 6 No.3, pp.193-217
- Waters D. (2004). *Introduction to Supply Chain Management*, (2rd Edition), Pal grave Macmillan, Britain
- Sollish, F., and Semanik, J. (2012). *The procurement and supply mangers' desk reference* (2nd.). USA, New Jersey.

Rono T. K (2017): Effects of procurement practices on organizational performance within public sectors. A case of East African Portland Cement Company Limited.

Walker D.H.T, Bourne & Rowlinson (2008). Survey of stakeholder visualization approaches. 76.

Wanjugu B. W, Kiarie D.M, and Marendi P. (2018) Effects of inspection on procurement performance in level four public hospital in nyeri county. *International Journal of Human source and Procurement*. Vol 11 (4) pp 75-87.

Sarstedt, Marko & Mooi, Erik. (2014). Regression Analysis. 10.1007/978-3-642-53965-7_7.