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## Influence of Contract Management on Supply Chain Performance in Moi Teaching and Referral Hospital in Kenya

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**Abstract:**

**Purpose:** The purpose of this study paper was to investigate the effects of contract management on supply chain performance in Moi Teaching and Referral Hospital in Kenya. The study was anchored on network theory.

**Material/method:** This study adopted a correlational research design. It targeted 100 employees who include Chief Procurement officer, Assistant Chief Procurement officer, Accountant, Procurement officers and storekeepers. A census technique was employed. The instruments for data collection were questionnaires. Cronbach's Alpha coefficient was used to determine the reliability of the research instrument and results ranged from 0.747 to 0.945 which was above the recommended 0.7 threshold. Expert judgment was used to establish the validity of the questionnaires. The collected data were coded and analysed using descriptive and inferential statistics. Descriptive statistics included mean, frequencies and standard deviation, while inferential statistics comprised of Pearson's product moment correlation coefficient and multiple regression.

**Conclusion:** The results indicated that contract management ( $\beta = .379$ ,  $p < .05$ ) has an incremental effect on supply chain performance. Based on these findings the study concludes that contract management enhances supply chain performance.

**Recommendations:** The study recommended that there is a need for the hospital to ensure that there is timely management of possible problems in the contract and continuous monitoring of the contracts through the completion of projects.

**Keywords:** Contract Management, Supply Chain Performance, Procurement

**Paper Type:** Research Article

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## **1. Introduction**

In the past, contract management in procurement was not seen to be necessary the world over. Globally, procurement contract need to be tailored to enhance the fulfilment of different project objectives. As a result of globalization, today firms have started to embrace effective procurement contract management strategies (Susan & Michael, 2012). Managers, now more than ever before, need reliable and effective procurement contract management strategies in order to reduce costs and remain competitive (Mohd Lair et al., 2014). Procurement contract management is critical to an organization's success in today's competitive and dynamic market. The idea of contract management is directly associated with the performance of the business. Various benefits through procurement contract management for the business organizations are identified in present literature (Maroofi, Ardalan, & Tabarzadi, 2017; Kucuk-kocaoglu & Bozkurt, 2018; Maldonado-Guzman et al., 2018). For instance, proper procurement contract management can significantly lower the factor of risk and uncertainty for the business and customer as well (Haapio & Siedel, 2017; Mo et al., 2001; Wiengarten et al., 2016).

Due to the high complexities in the supply chain function, ever changing technology, intense competition and the economic reforms in the recent past, there is need for organizations to develop and implement practices in the organization in order to enhance their performance. Procurement contract management should not to be undermined as it is essential and critical resources for the performance of the organizations; hence there is need for the firms to effectively manage procurement contract as it directly affects the efficiency and effectiveness of the operations in the organization, which ultimately affects the sustainability and performance of the firm (Pujari, 2012). Efficient and effective management of the procurement contracts in the organization can enable a firm to achieve a sustainable competitive edge and foster customer values through optimal levels of the stocks in the firm that reduces the operations costs while meeting and exceeding customers demand (Devaraj et al, 2007).

The challenge of demand for quality service and upcoming competitions for most of the firms has realized the need for quality service delivery and efficiency. Past investigations done around this area recognized poor condition of health care services in the greater part of public health care institutions including majority of the health facilities in Kenya due to poor supply chain performance. An effective procurement process ensures the availability of the right drugs, equipment, foodstuffs in the right quantities available at the right time for the right person at reasonable prices, and at recognizable standards of quality. For instance, a case of MTRH hospital in 2015 where 200 patients were advised to proceed to the hospital pharmacy or with an apology by the healthcare provider that the prescribed drug was currently unavailable at the hospital pharmacy and that they had to buy them from a chemist. Ideally, procurement is an important part of management and supply and is an important procedure for all levels of health care institution. According to World Bank, supply chain performance has declined at an alarming rate resulting to a decrease in global GDP to up to 4.7%. There has been drastic increase in the pressure on organizations to find new ways to create and deliver value to customers to improve on their supply chain performance, While there has been an endeavour to enhance the circumstance it appears very little has been accomplished in raising the supply chain performance in public health facilities and this is intensified by restricted data on the components that distress the supply chain performance in the public health sector in Kenya. These difficulties distressing public

hospitals have prompted question amongst administration and operations staff. Contract management in procurement of health facilities is a standout amongst the most basic variables for their prosperity. Sourcing plays a key role in ensuring that this is achieved, therefore there is a need for firm Contract management in procurement to ensure that they don't only source but source strategically. Contract management in procurement have resulted in a delay in procurement of goods and services, poor quality goods procured. Previous studies of Contract management in procurement in various organizations have identified several benefits of contract management in procurement practices enables the company to concentrate its key resources and capacity on building and expanding its core competencies, internal integration and information sharing, supplier evaluation, sourcing flexibility and trust in supply chain members. Furthermore, through supplier contract management, there will be an overall reduction on the organizational cost hence better performance. This study has been done in other sectors of the economy and state corporations; however, none has been done in a hospital set up in Kenya, therefore in light of this, this study sought to investigate the influence of Contract management in procurement on supply chain performance in Moi Teaching and Referral Hospital in Kenya.

## **2. Literature and Theoretical Review**

### *2.1. Network Theory*

This study adopted the network theory to show the relationship between contract management and supply chain performance. Network theory is key to the relationships a firm has with other organizations, and on how these relationships influence an organization's behaviour and outcomes (Thorelli, 1986). Network theory inform on choice of which an organization chooses to buy from or engage with as alliance partners. Centrality is a crucial concept within network theory. Centrality refers to how critical an organization is within a network. High supremacy refers to an organization that is often sought out as a partner. Such organizations enjoy high consideration and status among the network (Gulati *et al.*, 2000). Being central within a network would seem to offer the ability to enhance the four key competitive priorities within supply chains: cost, quality, speed, and flexibility (Hult *et al.*, 2006).

A highly central organization can tap its tight links in order to rush orders when required, make seamless transitions over time and seek out the provider offering the best materials and lowest prices. Enhanced supplier relationship management practices with strategic suppliers can enable acquisition of best material at low price which will boost MTRH especially on reducing production cost which will ultimately help to offer better services to customers at competitive prices than the competitors hence better positioning.

Network theory inform on choice of which firms an organization chooses to buy from or engage with as alliance partners (Chepng'etich, Waiganjo, & Karani (2015). Also, an organization that is able to rush customer orders is likely to improve their satisfaction and loyalty hence contributing to long term success of the firm. Thus, with regard to sourcing, a firm should strive to be central to its network and should seek sources that are central to their networks. Though this theory doesn't inform the choice on whether to make or to buy it guides on the firms to buy from or engage with as partners. This is very critical since there is a need for structural alignments between a firm and the network it has with its suppliers for effective and efficient performance.. network theory Network theory inform on choice of which firms an organization chooses to buy from

or engage with as alliance partners firm should strive to be central to its network and should seek sources that are central to their networks

## *2.2. Literature Review*

The effective practice of contract management in an organization is crucial in boosting the supply chain performance. Contract management refers to those activities related to contract handling including invitation to and evaluation of bids; awarding and implementation of contracts; measurement, and payment calculation (Kakwezi, 2012). This also entails monitoring contract associations, handling related issues, integrating essential contract modifications or changes (Cherotich, 2014). This is meant to ensure that all contract parties exceed or meet each other's expectations and interact with contractor to attain the objectives of the contract. On the other hand, contract administration involves maintaining an updated form of the contract; controlling and managing contract variations; paying the contractor; managing assets; drafting reports; terminating the contract.

As Uher and Davenport (2009) notes, it also involves practical monitoring, management and review of terms of contract established through the process of procurement, ensuring delivery is done appropriately. Contract management activities aim at ensuring that parties comply with the contractual terms and conditions, as well as documenting and accepting any necessary changes in the contract execution. Common contract management practices include contract administration; contractor monitoring and acceptance management; dispute resolution; managing the contractor relationship and contract closure. This also is helpful to the contracting authority in identifying any issues or problems in advance that could arise and offer timely solutions.

Contract management entails monitoring contract associations, handling related issues, integrating essential contract modifications or changes. An organization can optimize its competitive position through contract management by undertaking measures such as contract monitoring which ensures that the contractor is performing his duties and fulfilling his obligations in compliance with the contract. This helps the contracting authority in identifying any issues or problems in advance that could arise and offer timely solutions. Also, resolution of contract disputes which entails management of all conflicts that may arise between the two parties with an aim of reaching an amicable solution for the better good of both the organization and supplier/contractor (Cherotich, 2014).

Lastly, contract closure happens when all contractual terms and obligations have been honoured (Cropper, 2008). Therefore, mutual understanding between MTRH and their supply partners can significantly contribute to ensuring supply contracts are completed in time so as to guarantee a smooth flow of operations within the firm. This can entail handling imminent disputes in time and also monitoring supplier's contractual activities so as to ensure that they stick to the set guidelines and standards.

Review of literature on contract management and supply chain performance revealed that monitoring contract associations, handling related issues, integrating essential contract modifications or changes attain the objectives of the contract (Cherotich, 2014). Contract management activities ensure parties comply with the contractual

terms and conditions, as well as documenting and accepting any necessary changes in the contract execution (Uher and Davenport, 2009) and resolution of contract disputes is an amicable solution for the better good of both the organization and supplier/contractor (Cherotich, 2014). However, the above studies were limited in terms of methodology to show conclusive effect of contract management on supply chain performance.

### **3. Materials and Methodology**

The study adopted correlational research design to investigate the influence of contract management on supply chain performance in Moi Teaching and Referral Hospital in Kenya. The target population were 100 respondents comprising of finance, procurement and stores departments. The respondents comprised of chief procurement officer, assistant chief procurement officer, accountant, procurement officers and storekeepers. The study employed a census sampling method. A total of 79 questionnaires out of the 100 were returned, which gives a response rate of approximately 79 percent. This response rate is above average. Even though the percentage rate of response was above average, the number of distributed questionnaires may have implications on the validity of the statistical analysis. The writer did however decide to continue with the analysis because the theoretical part of the project was already done.

The researcher collected data using structured questionnaires. The questionnaires contained both open-ended and close-ended questions with the quantitative section of the instrument utilizing both a nominal and a Likert-type scale format. A pilot study was carried out to determine reliability of the questionnaires. Reliability analysis was subsequently done using Cronbach 's Alpha which measures the internal consistency by establishing if certain items within a scale measure the same construct. Findings illustrates that questionnaire were reliable as their reliability values exceeded the prescribed threshold of 0.7. This depicts that the research instrument was reliable and therefore required no amendments. The study was analysed using both descriptive and inferential statistics. Descriptive statistics included frequencies, measures of central tendencies (mean, median or mode) and measures of dispersion (standard deviation, range and variance). Further, both Pearson's correlations and regression analyses as forms of inferential statistics were used. Correlations were used to test for significant relationship between variables and multiple regression to check the extent to which the dependent variables were predicted by the independent variables and this helped to test the hypotheses.

### **4. Findings and Discussion**

This section presents and discusses the results of this study based on the formulated objective as presented in previous section. Contract management is done with the goal of ensuring all contract parties exceed or meet each other's expectations and interact with contractor to attain the objectives of the contract. Thus, the study sought to determine the perspectives of the employees regarding contract management at MTRH and eventually how this might influence supply chain performance at MTRH. The views of the employees were measured on a 5- point Likert scale to gauge their level of agreement or disagreement and the findings were presented in Table 1.

**Table 1: Contract Management**

	<b>Mean</b>	<b>SD</b>
There is timely management of possible problems in the contract	4.25	0.759
There is Continued monitoring of contracts through the completion of projects	3.89	1.109
The hospital maintains an updated form of the contract	3.84	1.067
The hospital controls and manages contract variations	3.11	1.301
The contract management team has the necessary relevant qualifications, skills, knowledge and experiences for the job	3.28	1.3
The contract management controls and certifies that both contracting parties have honoured their contractual responsibilities	3.89	1.209
<b>Contract Management</b>	<b>3.317</b>	<b>0.778</b>

*Source: Research Data (2021)*

From the findings in Table 1, it is showed that that there is timely management of possible problems in the contract (M=4.25, SD = 0.759). The findings further show that there is continued monitoring of contracts through the completion of projects (M =3.89 , SD = 1.109). In addition, hospital maintains an updated form of the contract (M=3.84, SD = 1.067) and that the contract management controls and certifies that both contracting parties have honoured their contractual responsibilities (M=3.89, SD = 1.209). In general, the mean response was 3.317 (SD = 0.778) and showed that majority of the employees were not sure regarding the level of contract management.

The fundamental objective of a high performance of supply chain is to produce products to match customers demand cycle, while producing the greatest value possible to the customers. The increasingly competitive environment calls for speedy, cost efficient, accurate and reliable supply chain. Thus, the study sought to establish the views of the employees of MTRH regarding the level of supply chain performance especially given the perceived level of supplier development, Supplier Relationship Management, contract management and Supplier Involvement. Their views were measured using a 5-point Likert scale to indicate their degree of agreement or disagreement with various aspects that define supply chain performance and the findings were presented in Table 2.

**Table 2: Supply Chain Performance**

	<b>Mean</b>	<b>SD</b>
Our suppliers present high quality levels	2.94	1.23
Our suppliers present high service levels	3.47	1.26
Our suppliers deliver product/service on-time	3.24	1.32
Our suppliers respond quickly to our petition	3.20	1.41
Our suppliers have low price/cost of products/services	3.42	1.29
Our suppliers have enough flexibility to respond to unexpected demand changes	3.49	1.04
Our suppliers deliver the correct quantity of products	3.72	0.89
Our suppliers are willing to adjust products/services to meet changing need	3.78	1.15
The hospital has short order to deliver cycle time	4.08	1.11

**Supply Chain Performance****4.02 0.78**

The findings in Table 2 show that MTRH suppliers deliver the correct quantity of products (M=3.72, SD = 0.891). and are willing to adjust products/services to meet changing needs (M=3.78, SD = 1.151). Finally, the findings show that the hospital has short order to deliver cycle time (M= 4.08, SD = 1.107). Generally, the mean response regarding supply chain performance was 4.02 (SD = 0.780) indicating considerable level of supply chain performance at MTRH. Despite suppliers delivering the correct quantity of goods, willingness to adjust products/services to meet changing needs and short order to deliver cycle time, there are gaps identified in terms of quality and service levels, delivery time, prices/ cost and flexibility of the suppliers.

*4.1. Factor Analysis*

Factor analysis for contract management was conducted to ensure that all the constructs used are valid and reliable before proceeding for further analysis. The study requested that all loading less than 0.5 be suppressed in the output, hence providing blank spaces for many of the loadings. All factors were retained for further data analysis. Additionally, the first factor accounted for 26.004% of the total variance, the second factor 49.978% of the total variance and the third factor 66.971% of the total variance. Sampling adequacy was tested using the Kaiser- Meyer- Olkin Measure (KMO measure) of sampling adequacy. As evidenced in table 3. KMO was greater than 0.5, and Bartlett's Test was significant.

**Table 3: Factor Analysis for Strategic Sourcing Practices**

	loadings
There is timely management of possible problems in the contract	0.807
There is Continued monitoring of contracts through the completion of projects	0.846
The hospital maintains an updated form of the contract	0.901
The hospital controls and manages contract variations	0.718
The contract management team has the necessary relevant qualifications, skills, knowledge and experiences for the job	0.818
The contract management controls and certifies that both contracting parties have honoured their contractual responsibilities	0.638
There is timely management of possible problems in the contract	0.686
There is Continued monitoring of contracts through the completion of projects	0.771
The hospital maintains an updated form of the contract	0.718
Rotation Sums of Squared Loadings	
Total	1.119
% of Variance	14.311
Cumulative %	81.282
KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.55
Bartlett's Test of Sphericity	779.578

#### 4.2. Correlation Results

The Pearson Correlation coefficient is used to measure the relationships between the variables. The findings in Table 4 show that contract management has a positive and significant relationship with supply chain performance,  $r = 0.771$ ,  $p = 0.000$  indicating that there is a probability of 0.771 that supply chain performance would increase with increase in contract management. The regression analysis in this case was used to assess the effect of the independent factors on the dependent factor (supply chain performance) and answer the underlying research questions. First the model summary and the analysis of variance which is used in assessing model fit were assessed and findings were presented in Table 4. The regression analysis findings are used in answering the research questions for the study. The findings in Table 4 on the model summary show that all the predictors explain 68.2% of the variation in supply chain performance ( $R = 0.826$ ,  $R\text{-squared} = 0.682$ ,  $\text{Adjusted } R\text{-squared} = 0.664$ ). The coefficient of determination explains the extent to which changes in the response variable can be explained by the change in the explanatory variables or the percentage of variation in the dependent variable that is explained by all the independent variable.

ANOVA results in Table 4 show that the model fit was good as illustrated by overall test of significance with  $F(4, 74)$  value of 39.607 with  $p < 0.001$ . Thus, the model was fit to predict supply chain performance based on strategic sourcing factors.

**Table 4: Correlation and Regression Results**

	Unstandardized		Standardized Coefficients			correlation
	B	Std. Error	Beta	t	Sig.	r
Contract management	0.351	0.107	0.379	3.274	0.002	0.771
summary statistics						
R Square	0.682					
Adjusted R Square	0.664					
Std. Error of the Estimate	0.458					
ANOVA						
	39.60					
ANOVA (F-stat)	7					
ANOVA (F-prob)	0.000					

Dependent Variable: Supply Chain Performance

The specific objective of this study was to ascertain whether contract management affect supply chain performance at MTRH. In line with this objective, the study sought to answer the research question that: How does contract management affect supply chain performance at MTRH? From the findings in Table 4, contract management has a positive and significant effect on supply chain performance,  $\beta_3 = 0.379$ ,  $p = 0.002$ . This means that with each unit increase in contract management, supply chain performance would increase by 0.379 units. Thus, the results infer that contract management practiced in MTRH significantly improves supply chain performance. The results therefore reveal that timely management of possible problems in the contract, continued monitoring of contracts through the completion of projects, maintaining an updated form of the contract, controls and manages contract variations, contract

management team having the necessary relevant qualifications, skills, knowledge and experiences for the job and certifying that both contracting parties have honoured their contractual responsibilities are critical for improving supply chain in Hospitals.

These findings support those of Uher and Davenport (2009) which stipulated that contract management ensures that there is practical monitoring, management and review of terms of contracts which ensures that deliveries are done appropriately thereby leading to superior supply chain performance. Further support to the study findings is by Cherotich (2014), who noted that organizations can optimize their competitive position through contract management by undertaking measures such as contract monitoring. Similarly, Cherotich (2014) contract administration involves maintaining an updated form of the contract; controlling and managing contract variations increases supply chain performance. The results also confirm Uher and Davenport (2009) argument that ensuring that parties comply with the contractual terms and conditions, as well as documenting and accepting any necessary changes in the contract execution have high probability of enhancing performance of supply chain operations. Therefore, mutual understanding between MTRH and their supply partners can significantly contribute to ensuring supply contracts are completed in time so as to guarantee a smooth flow of operations within the firm. This can entail handling imminent disputes in time and also monitoring supplier's contractual activities so as to ensure that they stick to the set guidelines and standards. The study provides new knowledge by giving evidence on positive and significant effect of contract management on supplier chain performance in MTRH. This shows that increasing contract management enhance supplier chain performance in MTRH.

## **5. Conclusion and Recommendations**

The findings have shown that contract management has an incremental effect on supply chain performance especially when possible, problems in the contract are addressed in a timely manner and whenever there is continued monitoring of contracts through the completion of projects. The other aspect that contributed to an improvement in supply chain performance is the maintenance of an updated form of the contract and emphasis on ensuring that contracting parties have honoured their contractual responsibilities. There is however uncertainty as to whether the contract management team have the requisite skills and knowledge to ensure that there is effective contract management. Since contract management had a positive influence on customer satisfaction, there is need for hospital to ensure that there is timely management of possible problems in the contract and continuous monitoring of the contracts through the completion of projects. Other than that, it is utmost necessary for the hospital to have an updated form of the contract. As well, it is a requirement for the contracting parties to honour their contractual responsibilities in attempts to improve supply chain performance. In addition, the contract management team should have the appropriate skills and knowledge to ensure that there is effective contract management.

This study focuses on Moi Teaching and Referral Hospital in Eldoret only. However, there is need to increase the scope to cover other referral hospitals in Kenya so as to confirm the findings of this study and also to add more knowledge. Furthermore, while there are hospital-inherent factors that determine the direction of strategic sourcing and how this influences supply chain performance; there are factors that are inherent from the external environment in terms of policies and operational procedures that might have an influence on the hospital's practices in supply chain management. Thus, there is need to have a deeper look into the role of the external environment more, in terms

of practices and policies, so as to get an overview of the challenges with view of addressing them from all angles.

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