Effect of Contract Management Phases on Supply Chain Performance among Manufacturing Firms in Nairobi County, Kenya

Peter Mugumu Kamau and Dr. David Kiarie Mburu

1

Effect of Contract Management Phases on Supply Chain Performance among Manufacturing Firms in Nairobi County, Kenya

[1]*Peter Mugumu Kamau
Master of Science in Procurement and Supplies Management, Mt. Kenya University

[2]Dr. David Kiarie Mburu
Dedan Kimathi University of Technology

How to cite in APA format:

Abstract

Purpose: Contract management entails process which ensures parties to the contract undertake the contracts as per the objectives and obligations in the contract. Contract management also involves execution of roles and responsibilities through creation of conducive working relationship to all parties in the agreement. The objective of the study was to establish effect of contract management phases on supply chain performance among manufacturing firms in Nairobi County.

Methodology: The population of the study was manufacturing companies which are based in Nairobi, Kenya. Nairobi has 640 manufacturing firms. The sample size of this study consisted of 246 supply chain managers in manufacturing firms in the Nairobi, obtained through stratified sampling and randomly selected. Self-administered questionnaire were used to collect data from the respondents. The quantitative data was coded and grouped into to various categories, percentages, frequencies, means were derived and presentation done through tables for compiling the study.

Findings: The study found that pre-contract phase, solicitation, contract execution phase, post award phase influenced supply chain performance as per correlation analysis. The findings indicted buyer specifications are emphasized at pre-contract stage, the contract is signed at execution stage and deliverable during post ward phase and all the stages are crucial for supply chain performance at manufacturing firms. The study concludes that manufacturing firms depend highly on the clear contract singing and fulfillment of the contractual obligations by all parties across the phases. The study also concludes that the success of the firm will depend on efficiency in supply chain therefore; the management should ensure that there are no lapses in the procurement process.

Unique Contribution to Theory, Practice and Policy: The study recommends that there is need for manufacturing firms in Kenya to invest in constant training of their employees on effective contract management across all the phases to enhance their performance. The study also recommends that manufacturing firms in Kenya should put in place appropriate measures that ensure that potential risks regarding contract management phases, detected in advance, and mitigated to enhance operational performance.

Keywords: *Supply Chain, Performance, Contracting, Management, Execution, Manufacturing*

INTRODUCTION

Contract management entails process which ensures parties to the contract undertake the contracts as per the objectives and obligations in the contract. Contract management also involves execution of roles and responsibilities through creation of conducive working relationship to all parties in the agreement. The management has responsibility of ensuring that the contract can forecast any future unforeseen event which might call for renegotiation of contract by adopting needs to make necessary adjustments to the contract (Cruz & Marques, 2012).

According to Cleland and Bidanda (2009), in high and competitive global projects should function through interactions with environments which could as well involve alliances, subcontractors and multinational sourcing which intricate vendor relations. The companies are in a position to have relationships with other external organizations through contracts. This implies that organizations are in a position to supply goods and services based on contract negotiations with the client. When writing a proposal in any profit-making venture one of the key considerations is the nature of the contract anticipated. According to Germaine (2017), contracts face numerous challenges in Sub Saharan Africa; contractors fail to perform as per the contract. Most of them are not fully equipped in terms of personnel, equipment and financial capacity which is mainly not disclosed while signing the contracts.

Where contracts are poorly managed in all the phases of contract management or in any of the phases there is high likelihood of loses or dissatisfaction among the stakeholders in the project. A study conducted by Fapo`hunda and Stephenson (2015) in UK found that some projects are affected if there is disagreements relating to the projects stated objectives with respect cost, time and value. In Ghana, Ofori (2015) diagnosed delays in honoring contractual obligations. They embody month-to-month rate problems to contractors, terrible contract management, material procurement issues, and horrific technical performance and fabric rate escalations. Terrible professional management, fluctuation of costs, developing price of substances and negative web page manage have moreover been diagnosed as factors contributing to undertaking not being complete on time.

There is evidence that the performance of contractual obligations in Kenya is poor. One study established that over 70percent of the projects initiated are likely to escalate with time and costs (Nyangilo, 2014). This has been justified through research in the Kenya's enterprise that have made findings to the impact that value overrun, not on time of completion duration, conflicts in the complex vendor relationship, poor agreement control practices, extortion and corruption, awful risk mitigation and awful best work are the norm instead of exception in the task of contracted creation tasks (Kibuchi & Muchungu, 2015).

The contractor is in a position to estimate the risk of will undertake depending on the nature of the contract. Because onerous risks exist, some contracts provide relief for the contractor (Kerzner, 2009). According to the study, the availability of qualified staff contractors, as well as other factors, should be carefully considered during contract negotiations. The benefits of contractual agreements must be recognized in order to make the best decision on a specific project.

The Project Management Institute claims (2013), there are three types of contract which include fixed or cost reimbursable, time and material contracts. Majority of contractors prefer a fixed contract type though some project managers prefer their teams to come up with ground rules in the contract. It is common to find parties combining two types of contracts in a single

contract. After the parties sign the contract, it becomes legally binding in terms of the obligations stipulated in the contract. The contractor has the responsibility of ensuring there is compliance to the purchaser set contractual terms and conditions which will ensure the final products meet the specified requirements of the project. Further according to Project Management Institute (2013) under fixed-price arrangements, the purchaser should only alter the scope of contract when there agreement of increasing contract price, so specify the product or service being procured. A contract administrator, according to Kerzner (2009), with responsibility of making reports regarding the progress of the project and has responsibility of ascertaining that all the deliverables in the project are ascertained and acceptable to buyers' satisfaction.

Contract Management Phases

Contract management expounds contract-related tasks such as invitation to and evaluation of bids; awarding measurement, payment calculation as well as contract execution (Kakwezi, 2012). This further includes contract monitoring, dealing with related issues, and incorporating necessary contract changes. This is intended to ensure that parties to the contract work beyond each other expectations or meet the actual objectives of contract. This entails monitoring, practical management, reviewing terms of contract and agreements in procurement process to ensure proper delivery (Uher & Davenport, 2009). All Contract management activities have sole aim of ensuring the parties abide by the contractual terms and documentation of any agreeable changes to the contract. Because contract management is a process certain activity, must be completed in order for the benefits to be realized. Contractor monitoring and acceptance management are common contract management practices since it deals with establishing and managing entire contract.

Statement of the Problem

Any organization with an aim of gaining competitive advantage in addition to value of money should deploy contract management practice. Firm's procurement process is incomplete in absence of adherence to proper contract management practices. The activities of ensuring adherence to contract as per the agreement between parties to the contract is known as contract management (Cropper, 2008). Contract management involves managing alterations which can arise as the contract is being executed, errors, payment specification and policy specifications. Its phases are part in of Kenya manufacturing routines.

 Over the last five years stagnation declined profits has been experienced by Kenyan manufacturing firms as a result of volatile operating environment this according to statistics made by the World Bank (Orege, 2016). It has been projected that manufacturing companies in East Africa have lost 70% of market share due to contingencies which are resulting from poor supply chain management among other factors (Vernon, 2017). Kenya's low growth and development in the manufacturing sector is weighing on its economic growth; the country is also losing its ground in East African Community market where previously it has previously dominated. This is due to inefficiencies and unpredictable operating environment according to World Bank (2014).

According to study by Kimani (2013), manufacturing companies face challenges in dealing with the globalization and supply chain while maintaining speed and flexibility, meeting the needs of customers without holding more inventories, eliminating long lead time, efforts and material from all points in the supply chain. Many companies have not succeeded in maximizing their supply chain potential and honoring their contractual obligations. Were and

Ngugi (2015) investigated the influence of technology on the performance of construction projects in Nairobi County. The study established that many projects do not succeed due to failure to utilize the suitable project management software to administer the budget, schedule, project activities and labour. The previous studies have not addressed the effect of contract management phases on performance of manufacturing firms in Kenya and hence the need of the study. The study therefore focused on effect of supply management phases on performance of manufacturing firms in Nairobi County and fill the existing knowledge gap.

Objective of the Study

i. To determine the effect of pre-contract phase on supply chain performance among manufacturing firms in Nairobi County.

ii. To establish the effect of contract execution phase on supply chain performance among manufacturing firms in Nairobi County.

iii. To find out the effect of post award phase on supply chain performance among manufacturing firms in Nairobi County.

Significance of the Study

The study provided information to the management of manufacturing organizations that may enable them to conduct their functions and duties in a more efficient and effective manner. This in turn may lead to better performance and profitability in the industry. It may also provide insight on the various supply chain practices that can be adopted so at to achieve a competitive advantage and operational excellence.

The study would enable suppliers understand how manufacturing entities conduct their operations with regards to supply chain management, thus they may be in a better position to also plan their operations in terms of lead time, logistics, tendering and quoting.

Academicians and other researchers may benefit from this research since it provides more insight on contract management and supply chain management especially in the Kenya context. This research was used as a basis of further study in the future. This study's recommendations generated more research in the field of supply chain management in manufacturing industry. It may also create ways of resolving emerging problems in this field.

The study would be relevant to policy makers in the private and public sector by providing information on supply chain performance. The information may enable them to formulate better policies with regards to contract management, and supply chain management.

Supply chain professionals would be in a position to obtain informed knowledge pertaining to contract management owed to the fact the study was undertaken when supply chain management is evolving despite many challenges facing the industry. The findings would also aid in growth and development of supply chain management in Kenya and other parts of the world.

LITERATURE REVIEW

Transaction Cost Theory

Transaction cost theory was developed in (1937) by Coase it relates to the cost provision of a good service from the market as opposed to obtaining it within. Baily (2005) has provided a detailed clarification of the purchasing function activities on how transaction cost applies to acquiring critical decision points. Main transaction cost activities revolve around five processes

which are; category strategy, supplier strategy, quotation strategy selection and negotiation, operative procurement and supplier ovulation. The buyer can determine a strategy for pooled group category strategy by keeping equal products into one pool in the first process (Schiele 2006).

With organizations supply chain manager acting as organization and understands customer requirement it's possible to come up with right supplier strategy. Every procurement step supports the supplier in acting in accordance with what has been previously agreed upon. After component delivery to the buyer, the supplier performance is measured in terms of quality, cost and service (Papazoglou & Heuvel, 2007). After component delivery to the buyer, the supplier performance is measured in terms of quality, cost and service (Papazoglou & Heuvel, 2007). In case of low transaction cost, the company should be capable of making an element. Depending on single or multiple suppliers, opportunities maybe identified by procurement officer (Ellra m, Tate & Billington, 2008). The transactional cost theory explains the relationship between the cost efficiency of contract management phases and supply chain performance.

Agency Theory

Agency theory is used to explain relations in other disciplines and same can be replicated within chain supply chain performance. Agency theory states illustrates it is the relationship between agents and principal. An agency relationship is where parties collaborate and act as one revelry (Rungtusanatham et al., 2007). Agency theory are main assumptions is that principals and agency contribute to a conflicting goal (Ekanayake, 2004; Rungtusanatham *et al.,* 2007).

As organizations has used extended supply chain while making provision to their customers. Most of these supply chains are not in control of the organization simply because they are not within the scope of the organization. Due to the absence of control the organizations have to come up of ways of maintaining high quality of materials, goods and services supplied.

Traditional tactics alone are neither sustainable nor effective in the long run therefore firms need to establish cooperative relationships with supplier for QM an enhancement. Control of supplier is highly fundamental to the operations for manufacturing entities. Gaining competence and establishing long term relationships with supplier via the agency theory aspects can be better understood.

Despite the benefits of these assumption, two main problems may arise which include an agency problem and risk sharing problem. In agency problems, it occurs when the cost is high due to goals difference from the ideologies set trying to verify all the agents are clean. Nevertheless, the expense of the verification matters. Due to an effective consideration, of the contract management in agency relationship there is need to minimizing the agents cost for instance through monitoring the agent's behaviors. Effective supervision of agents' problem such as preference mismatching, and information acquisition, imperative to any agreement management and supplier chain performance.

Empirical Review

For accelerated performance in any given firm contract management is critical. Contract management in procurement is meant to aid organizations achieve goals as per strategic plan. Through operational measurement of performance efficiency and effectiveness in an organization can be realized. It is interesting to note that performance measures are boosted by contract management through supplier relationship.

A study by Coste (2008) clearly shows suppliers are loyal to organizations that manage their contracts functions in a transparent manner, meeting contractual obligations with high efficiency hence improved organization performance. Wilson and Kusomo (2004) argues that tedious documentation work which is obvious in the pre-contract stage of procurement is expensive and consumes a lot of time to the customer which in turn lengthens the whole process of tendering.

Further arguments have indicated a rise in performance measurements becoming more technical. The technicalities in performance measurement have led into ambiguities in establishing the costs which need to be factored in the tendering process. Again, it becomes technical to exempt some of the contractual items which are not dependent on some of performance measurements.

According to Kakwezi (2012), pre-contract management can be broadly described in three sections which comprise of contract administration, relationship management and service delivery. This implies that service delivery management addresses the issue of contractual deliverables in terms of performance levels and quality of a contract. Contract management in a private partnership aims at optimizing efficiency and effectiveness in contract execution phase through cost reduction and management of contractual relationship taking into account cost benefit analysis that maintain procurement relationship between parties (Silvana, 2015).

According to Aberdeen Group (2006), argues that through contractual agreements the firm is in a position to maintain high contractual commitment in its obligations which leads to high-cost reduction and also minimizes entire purchasing costs. Therefore, this increases the chances of project success. External compliance in a project can take different forms which include but not limited to lack of materials, lack of human resources and failure to meet the project timelines.

With reference to Erridge, Fee and McIlroy (2014), contract management practices in procurement department should lead to effectiveness in supply chain performance. According to Kyengo (2012), Supply Chain Performance should lead to a great understanding of the system and internal controls. Core competencies can be used to have effective supply chain performance. According to Kyengo (2012) research, a core competency is any function that a company excels at.

Literature has shown that competitiveness of any organization in future will be based on effectiveness of supplier chain performance. The organizations should strive to work on procurement policies and procedures in procurement which should include procurement strategies and they can go further by appointing procurement committee with each committee having designated duties and responsibilities which should have high supplier selection and every tender evaluation should consider enhancing supply chain performance in the organization. (Zuckerman, 2002).

Many researches on contract management have a tendency to focus mainly on small and medium sized enterprises as compared to manufacturing firms. Wilson and Kusomo (2004) did a study on pre-contract stage of procurement in state corporations. Others research by Silvana (2015) in a study on the contract management focused on private public partnership and others on quality improvement on contract management by Liker (2004). It is evident that no research has been done on the effect of contract management phases on supply chain performance among manufacturing firms in Nairobi County. This study attempts to fill this gap.

Conceptual Framework

The conceptual framework is developed to aid researcher in developing awareness and understanding of the effect of contract management phases on supply chain performance among manufacturing firms in Nairobi County. The framework has been adopted to aid researcher make meaningful findings. The framework is based on three independent variables, and one dependent variable as shown diagrammatically in Figure 1 that illustrates the conceptualized relationship between the independent which include pre-contract phase, contract execution phase, post award phase and dependent variable, that is, supply chain performance. The conceptual framework shows how variables interact in a diagram format.
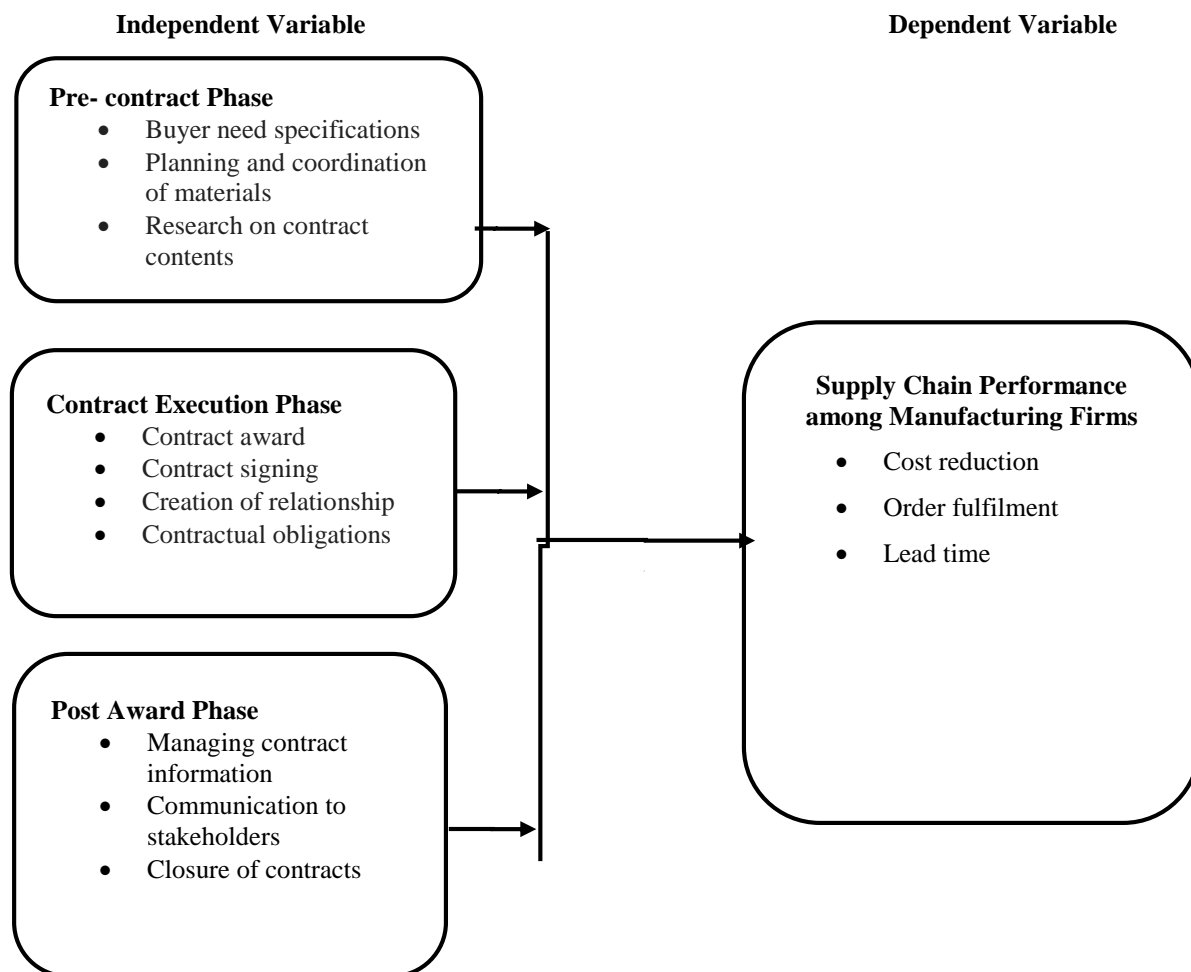
www.iprjb.org

Independent Variable   **Dependent Variable**

Figure 1: Conceptual Framework

Pre-contract Phase

Pre-contract management describes the managements of activities which are performed before commencement of a contract. This stage involves buyer need specifications, planning and coordination of materials, which invites bids by contractors for the work. When a prospective tenderer submits a tender and accepted as an offer. Negotiations to contract between the parties begin (Chong, 2011). Essentially, the pre-contract stage allows to evaluation and outlining of contract steps objectives for effective design which is appropriate for management operations which address potential pitfalls and maximize efficiency. Due to the legal nature of contracts, one must be prepared for strategic approach so that all the tools required in the other phases of the contract are in place and flawless.

Contract Execution Phase

This is the initial phase which maintains an up-to-date contract form; controls and manages contract variations; pays the contractor; manages assets; drafts reports; and terminates the contract (Hannan, 2014). The main purpose of contract execution is ensuring that the contract is satisfactorily performed and each of the parties to the contract undertakes its contractual obligations. Proper contract execution eliminates future potential claims and disputes. A major consideration during contract execution is communication. Its important during contract

execution that all parties to the contract have clear understanding of contractual obligations for effective contract performance.

Post Award Phase

The establishment of good contract is very important since it minimizes claims and potential claim in a contract. The parties to the contract should optimize contractual agreement (Azeem, 2010). Through proper contract review the parties can be in a position to review the contract specifications and contractual obligations (Abeeden, 2011). The contract should be closed when the contract reaches its final end and the work is completed when the work is no longer required or acceptable with quality reasons. When the contract is not completed the contractor may still insist for compensation for partial or fully executed contract at the close of the contract. This involves certification between the contracting parties which also evaluates the success of contract achievement on the expected results (Chong, Balamuralithara & Chong, 2011).

Supply Chain Performance

Shaw, Grant and Mangan (2021), view Supply Chain Performance Measurement as the overall set of measures used to estimate both the competence and capability of the supply chain. Supply Chain management and Performance are major components of competitive strategy that enhance organizational productivity and profitability among firms (Singhry, 2015). Researchers and practitioners have paid a lot of attention lately to organizational performance measurement and metrics. It is impossible to exaggerate the importance of these indicators for an organization's success because they have an impact on strategic, tactical, and operational planning and management. Supply chain Performance measurement and metrics play a crucial role in setting objectives, evaluating performance, and determining future courses of actions (Gunasekaran, et al. 2004). Competition is a constant issue for businesses. The focus of the market today is changing to supply chain performance from individual firm performance as they are more concerned with the entire chain's ability to meet end-customer needs through product availability and responsive, on-time delivery. To achieve that goal, an organization needs performance measures, or "metrics", for global supply chain performance improvements (Gunasekaran, et al. 2004). Performance indicators for the company must demonstrate both how well it manages its business (speed, asset, inventory, and financial metrics) and how well it provides for its clients (service metrics).

METHODOLOGY

Research Design

A research design is the master plan used when carrying out a research which connects the research questions to data. Its primary aim is to provide answers to the research questions and to give guidelines on how to answer these questions in the process (Matula, Kyalo, Mulwa & Gichuhi, 2018). This study utilized a quantitative survey research design specifically cross-sectional survey research design aimed at collecting large number of quantitative data at a point in time so as to establish the effect among key study variables namely; pre-contract phase, contract execution phase and post-award phase as independent variables and the dependent variable was supply chain performance among manufacturing firms in Nairobi City, Kenya.

Target Population

The target population for this study was the 640 manufacturing firms based in Nairobi and its environs (KAM, 2023). The unit of analysis was manufacturing firms and unit of observation were the supply chain managers in the manufacturing firms.

Sampling Frame

The sampling frame for this study was the list of the 640 manufacturing firms comprising of building, chemical, energy, food, metal and allied, motor, leather, paper, pharmaceuticals, plastics, textiles and wood products as per the Kenya association of Manufacturers (2023)'s data base.

Sample Size and Data Collection Tools

In determining the sample size, Slovin's formula was used to calculate the sample size (at 95% confidence level and $\alpha = 0.05$). A sample size of 246 was selected for the study. The stratified random sampling technique was utilized to select a sample size of 246 manufacturing firms. The primary research data was collected using a structured questionnaire which were self-administered to the respondents who were given adequate time to fill them before they are collected.

Data Processing and Analysis

Data collected was analyzed using descriptive statistics. The descriptive statistical tools helped in describing the data and determining the respondents' degree of agreement with the various statements under each factor. Data analysis was done with the help of SPSS version 24.0.

Correlation coefficient was used to analyze the strength of the relations between variables. The multiple linear regression model used to estimate the coefficient was as follows:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ …………………………….. Equation 3.1

Where:

Y = Performance of Supply Chain Performance

β_0, β_1, β_2, β_3 and β_4 = Regression Coefficient to be estimated

X_1 = Pre-contract Phase

X_2 = Contract execution phase

X_3 = Post award phase

ε = Stochastic term

FINDINGS

The study administered 246 semi-structured questionnaires for data collection. However, 200 questionnaires were properly filled and returned. This represented a success rate of 81.30% which is high and sufficient for analysis in this study.

Descriptive Results

The study used descriptive statistics to present the frequency and the percentages of the gathered data on the effect of contract management phases on supply chain performance among manufacturing firms in Kenya.

The first objective of the study was to determine the effect of pre-contract phase on supply chain performance among manufacturing firms in Nairobi County, Kenya. The study results are in tandem with the literature review by Chong (2011) that pre-contract award stage is the initial phase in procurement and one of the most important.

The second objective of the study was to determine the effect of Contract execution phase on supply chain performance among manufacturing firms in Nairobi County, Kenya. The findings indicated that 75% of respondents agreed that contract execution phase was a key driver of supply chain performance among manufacturing firms in Kenya. The study findings are in agreement with literature review by Hannan (2014) that contract execution phase maintains an up-to-date contract form; controls and manages contract variations; pays the contractor; manages assets; drafts reports; and terminates the contract.

The other objective of the study was to determine the effect of post award phase on supply chain performance among manufacturing firms in Nairobi County, Kenya. From the study findings the respondents agreed the procurement managers are in a position to maintain the contract information and manage risks in the contract. Further most respondents agreed that post award phase was a key driver of supply chain performance among manufacturing firms in Kenya. The study findings are in lone with the findings by Azeem (2010) that the establishment of good contract is very important since it minimizes claims and potential claim in a contract.

Finally, the sought to determine the level of supply chain performance in manufacturing firms across different measures that related to order fulfillment, cost reduction and the rate of minimization of lead time.

From the findings, order fulfillment has a significant influence on supply chain performance. This was confirmed by the fact that electronic order processing, order tracking system influences on performance having been adopted in their organization operations. By understanding supply chain costs, implementing cost reduction strategies, and measuring success, companies can improve their bottom line, increase profitability, and gain a competitive advantage. Cost reduction was computed for manufacturing firms for a period of financial 3 years. However, within a period of three years, the study found that in reduction of supply chain costs was poorly done in most of manufacturing firms in Kenya. This is attributed to lack of adherence to contract management phases. The study findings are in agreement with the opinions of Rao and Rao (2009) that reduction of supply chain costs is vital in supply chain performance of a firm. To maximize the effectiveness of cost reduction initiatives, it is essential to follow best contract management phases by collaborating with suppliers, and invest in technology. By doing so, manufacturing firms can build a resilient and agile supply chain that can withstand unexpected events and deliver value to the firms and their customers.

The findings indicate the firms were under performing in terms of lead time. Therefore, the study results imply that lead times play a crucial role in determining the performance of the supply chain. Long lead times can lead to higher inventory levels, which can result in increased costs and reduced productivity. Therefore, organizations should try to shorten their lead times and build stronger relationships with their suppliers.

Correlation and Regression Analysis

Correlation analysis was used to establish the relationship between the study variables while multiple regression analysis was used to estimate the predictive effect of contract management phases on supply chain performance among manufacturing firms in Nairobi County.

Correlation Results

The researcher used correlation technique to analyze the degree of relationship between two variables with the Pearson correlation coefficient (r), which yields a statistic that ranges from -1 to 1. Portney (2020) posit that correlation coefficient explains the magnitude of the relationship between two variables. If the correlation coefficient is positive (+), it means that there is a positive relationship between the two variables. A negative relationship (-) means that as one variable decreases, then the other variable increases and this is termed as an inverse relationship. A zero value of r indicates that there is no association between the two variables (Kothari & Garg, 2014; Saunders et al., 2017; Sekaran, 2019). The correlation among variables is illustrated by the correlations matrix in Table 2.

Table 2: Correlation Coefficients

		Pre- contract phase	Contract execution phase	Post award phase	Supply chain
Pre- contract phase	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	200			
Contract execution phase	Pearson Correlation	.376(**)	1		
	Sig. (2-tailed)	.003			
	N	200	200		
Post award phase	Pearson Correlation	.436(**)	.714(**)	1	.
	Sig. (2-tailed)	.000	.000		
	N	200	200	200	
Supply chain	Pearson Correlation	.594	.659(**)	.561(**)	1
	Sig. (2-tailed)	.138	.000	.000	
	N	200	200	200	200

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

The results in Table 2 above shows Pearson product-moment correlation coefficient which is a measure of the strength of the linear association between two variables. The results indicate that relationship between pre-contract phase and supply chain performance was significant and positively correlated {(r (BS, SD; 200) = 0.594; p < 0.05)}. This means that any positive change in pre-contract phase led to increased supply chain performance in manufacturing firms in Kenya. The results also indicate that relationship between contract execution phase and supply chain performance was significant and positively correlated {(r (BS, SD; 200) = 0.659; p < 0.05)}. This means that any positive change in contract execution phase phase led to increased supply chain performance in manufacturing firms in Kenya.

The relationship between post award phase and supply chain performance was significant and positively correlated {(r (BS, SD; 200) = 0.561; p < 0.05)}. This means that any positive change in post award phase led to increased supply chain performance in manufacturing firms in Kenya. The study findings are in line with the findings by Azeem (2019) that post award phase should optimize contractual agreement through proper contract review the parties can be in a position to review the contract specifications and contractual obligations. When the contract is not completed the contractor may still insist for compensation for partial or fully executed contract at the close of the contract. This involves certification between the contracting parties which also evaluates the success of contract achievement on the expected results.

www.iprjb.org

Multiple Regression Analysis

In order to analyze the joint effect of independent variables on the dependent variable (supply chain performance) multiple regression was employed. The following model was fitted;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon.$$

Where,

Y is Supply Chain Performance,

X_1 is Pre-contract Phase,

X_2 is Contract Execution Phase,

X_3 is Post award Phase,

Table 3: Model Summary (Joint Model)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.898	.806	.787	.32876

Further, the regression results in Table 3 show that the joint relationship between the contract management phases' variables and supply chain performance in manufacturing firms in Kenya was significant (F (4,181) =187.957, p < 0.001). With R^2 = 0.806, the model implies that about 80.60% variation in supply chain performance in manufacturing firms is explained by variations in (contract management phases). However, the model did not explain 19.40% of the variation, meaning that there are other factors associated with supply chain performance in manufacturing firms which were not fitted in the model.

Table 4: ANOVA (Joint Model)

Model		Sum of Squares	df	Mean Square	df	Sig.
1	Regression	1208.188	3	402.729	271.563	.000
	Residual	290.805	196	1.483		
	Total	**1498.993**	**199**			

Table 4 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant as supported by the F-statistic of 271.563 and a p-value of 0.000 which is lesser than the critical p-value of 0.05 implying that contract management phases (pre-contract phase, contract execution phase and post award phase) are good predictors of the supply chain performance in manufacturing firms in Kenya.

Table 5: Regression Coefficient (Joint Model)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	B		
	(Constant)	9.876	1.754		5.629	.000
	Pre-contract phase	.555	.134	.594	4.142	.000
	Contract execution phase	.765	.112	.659	6.829	.000
	Post award phase	.553	.087	.561	8.919	.000

Findings in Table 5 showed that pre-contract phase (X_1) had coefficients of estimate which was significant basing on (β_1=0.555, t cal= 4.142> t critical =1.96, p-value < 0.05). Also, the influence of pre-contract phase (X_1) is more than the effect attributed to the error, this is indicated by the t-test value = 4.142, thus we conclude that there is a significant relationship between pre-contract

phase(X_1) and supply chain performance in manufacturing firms in Kenya. The study findings are in tandem with Namusonge (2016) that pre-contract positively and significantly enhance procurement performance. The management focuses on keeping an updated contact form, planning and monitoring changes in contract; ensuring that contractor are paid on time; monitoring use of assets; coming up with reports; and use of appropriate procedures in contract termination

Findings in Table 5 showed that contract execution phase (X_2) had coefficients of estimate which was significant basing on (β_1=0.765, $_{t\ cal=\ 6.8292>\ t\ critical\ =1.96}$, p-value < 0.05). Also, the influence of contract execution phase (X_2) is more than the effect attributed to the error, this is indicated by the t-test value = 6.829 , thus we conclude that there is a significant relationship between contract execution phase(X_2) and supply chain performance in manufacturing firms in Kenya. The study findings are in line with the findings by Omodi and Kuria (2022) contract execution phase positively and significantly affect supply chain performance. As such, organizations should embrace more relationship management.

Findings in Table 5 showed that post award phase (X_3) had coefficients of estimate which was significant basing on (β_1=0.553, $_{t\ cal=\ 8.919>\ t\ critical\ =1.96}$, p-value < 0.05). Also, the influence of post award phase (X_3) is more than the effect attributed to the error, this is indicated by the t-test value = 8.919, thus we conclude that there is a significant relationship between post award phase(X_3) and supply chain performance in manufacturing firms in Kenya. The study findings are in agreement with the literature review by Omonyo (2019) that there is significant relationship between pos award phase and performance of an organization. Effective post-award contract management can help organizations avoid disputes, reduce risk, and improve their relationship with suppliers or partners. It also helps to ensure that projects are delivered on time, on budget, and meet the required quality standards.

According to Table 5, substituting the general multiple regression model with coefficients, the fitted model was of the form.

$$Y = 9.876+0.555X_1 + 0.765X_2 + 0.553X_3$$

Where,

Y is Supply Chain Performance,

X_1 is Pre-contract Phase,

X_2 is Contract Phase,

X_3 is Post award Phase

Conclusion of the Study

According to the findings performance of management can be assessed through how well the contract signed are executed. The effective management of pre-contract management phase is the critical to overall performance of the supply chain in manufacturing firms since it details the contents of the contract and contractual obligations of the parties to the contract. The perfection at pre-contract stage would therefore mean there are few or no amendments that would be necessary in the other management phases in the contract management.

The study concludes that manufacturing firms depend highly on the clear contract singing and fulfillment of the contractual obligations by all parties across the phases. The study further concludes that the success of the firm will depend on efficiency in supply chain therefore; the management should ensure that there are no lapses in the procurement process.

REFERENCES

Azeem, H., Rashid, C. &Halim, Z. (2010). Effect of information and Knowledge Sharing on Supply Chain Performance: *A survey Based Approach*.3 (2), 11-12

Allen, D. (1999). Transaction costs. *Encyclopedia of law and economics.* Retrieved from: ecsocman.hse.ru

Baily, P. (2005). *Purchasing principles and management.* New Delhi: Pearson Education.

Chong, H., Balamuralithara, B. & Chong, S. (2011). Construction contract administration in Malaysia using DFD: a conceptual model. *Industrial Management & Data Systems,* 111(90), 1449-1464.

Johnston, D., McCutcheon, D., Stuart, F., & Kerwood, H. (2004). Effects of supplier trust on performance of cooperative supplier relationships. *Journal of operations Management,* 22(1), 23-38.

Kamau, I. (2013). *Buyer-supplier relationships and organizational performance among manufacturing firms in Nairobi, Kenya,* Unpublished PhD dissertation, Nairobi: University of Nairobi.

Kakwezi, P. (2012). Procurement Contract Management in Public Procurement and Disposal Entities (PDES). International Journal of Research Journal of Economics and Business Studies, 1(2), 56–61.

Kamotho, K. (2014). *E Procurement and Procurement Performance Among State Corporations in Kenya*. Unpublished Master of Arts Thesis: University of Nairobi.

KNBS (2012), *Leading Economic Indicators.* Nairobi: Kenya National Bureau of Statistics.

KPMG. (2014). Manufacturing in Africa, Sector Report. Retrieved from: kpmg.com/Africa

Nyabiage, J., & Kapchanga, K. (2014). *Thousands of jobs on the line as tens of firms shut down local units.* The Standard Digital, Sunday, October 12th.

Oketch, C. (2014). Supply chain performance and performance of manufacturing pharmaceutical firms in Kenya, Unpublished PhD dissertation, Nairobi: University of Nairobi.

Orege, E. (2016). *The Effects of Capital Structure on Profitability of Manufacturing and Allied Companies Listed In Kenya Capital Market,* Unpublished PhD dissertation, Nairobi: United States International University-Africa.

Oyuke, J. (2012). How Bad Debts led a bank to close doors. *Business Journal Retrieved November, 18(1), 10-15.*

Rotich, C. (2014). *Contract Management Practice and Operational Performance of State Corporations in Kenya*. Unpublished Master of Business Administration Thesis: University of Nairobi.

Rotich, J. (2012). *Contract management practice and operational performance of state corporations in Kenya.* Master's Thesis submitted to School of Business at the University of Nairobi.

Schiele, H. (2006). How to distinguish innovative suppliers? Identifying innovative suppliers as new task for purchasing. *Industrial Marketing Management*, 35(8), 925-935.

Silvana, T. (2015). The Contract Management in Public-Private Partnership. Retrieved from https://fenix.tecnico.ulisboa.pt/downloadFile/395144992772/Resumo alargado.pdf

Vatankhah, S., Barati, O., Tofighi, S., & Rafii, S. (2012). Driving to Contract Management in Health Care Institutes of Developing Countries. Iranian Red Crescent Medical Journal, 14(4), 235–239.

Vernon, R. (2017). *International investment and international trade in the product cycle. In International Business*. London: Rout ledge.

World Bank (2014). *Anchoring High Growth: Can Manufacturing contribute more?*. Geneva: World Bank