



EFFECT OF SUPPLIER RELATIONSHIP MANAGEMENT ON PROCUREMENT PERFORMANCE OF COAST WATER SERVICE BOARD

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ABSTRACT

The general objective of the study was to determine the effect of supplier relationship management on procurement performance. The study focused on four specific objectives which included effects of supplier collaboration on procurement performance, effects of supplier commitment on procurement performance, effects of supplier feedback on procurement performance and effects of supplier lead time on procurement performance. In order to get a deeper understanding of the variables of the study, literature review on supplier relationship management on procurement performance was reviewed and theories used such as social network theory, commitment-trust theory, communication theory and lastly transactional cost theory. The study employed descriptive and inferential research design methods. The target population for the study was 62 employees of Coast Water Service Board from respective departments. The sample size was 54 which were arrived at by using Crochan's formulae from the target population. The study also adopted quantitative research design. The study used both primary and secondary data in collection of data from the respondents. Data collection was done using questionnaire method. Out of the 54 questionnaires that were dropped, only 50 were returned and fully filled. The researcher used pilot testing to ascertain the validity and reliability for the results for the study. Data analysis and interpretation was based on descriptive statistics as well as inferential statistics mainly regression analysis and Pearson correlation. Data presentation was done through frequency distribution of tables. From the findings, the independent variables that are the supplier collaboration, supplier commitment, supplier feedback and supplier lead time have strong significant relationship with the dependent variable procurement performance and is concluded that they are key determinants of procurement performance in an organization. It is therefore recommended that the Management of Coast Water Service Board put more emphases on building long term relationships with suppliers, systems should be integrated with the suppliers for easy flow of procurement processes an also strategies and policies on managing relationships with suppliers should be put in place The study revealed that cooperating with our suppliers is beneficial to organization in regards to long term relationships and in the long run good procurement performance.

Key words: Management, procurement, performance, collaboration, supplier

1. INTRODUCTION

As days go by, the business world is increasingly becoming complex, uncertain and very competitive. Companies thus need to develop strategies to cope with challenges that come with

trying to remain competitive and relevant in the market with SRM being a very important strategy. According to (Jonathan, 2017), SRM came into life in 1983 when McKinsey consultant Peter Kraljic called for corporate buyers to grow more proactive in supply management arguing that buyers should look to understand their categories' risk and profitability impact upon a company and devise supplier management strategies that best meet this need.

In most companies in the world, suppliers represent more than 50% of the supply chain cost, so the greatest potential for improvement in a company's performance involves working with suppliers (Carlos, Kim, & Ralf, 2016). However, success cannot be achieved without managing good relationships with suppliers and companies are now realizing that they have to work with suppliers to grow to procurement excellence. Supplier Relationship Management (SRM), therefore, is the discipline of strategically planning for, and managing all interactions with originations that supply goods and/or services to an organization in order to maximize the value of those transactions. SRM involves creating closer and more collaborative relationships with key suppliers in order to uncover and realize value as well as reduce risk (Rose & Moores, 2016).

2. RESEARCH PROBLEM

No company is an island in the world of business; each company is locked into a complex network of relationships with its customers, suppliers and other counterparts. What happens in these relationships is critical to the success of any business. Managing a company's relationships and its position in the network is a central, but often a misunderstood aspect of business (David, Lars-Erick, & Ivan, 2015). Suppliers are a very important part of the organization more so to the procurement department, however studies shows that most organizations in Kenya have chosen to mainly focus on meeting the customers' needs and they continue to struggle with managing their relationship with their suppliers. Many organizations have not embraced supplier relationship management hence losing out on advantages of having a good relationship with its suppliers which includes getting the best quality of requirements as well as prices (Mettler, 2016).

Organizations that creatively and innovatively exploit the benefits of supply chain management improve performance by up to 80 percent depending on the extent of adherence to key supply chain requirements (Ellram, 2016). The procurement department is mandated to carry out very important functions from manufacturing stage to the end. Challenges often arise hence making it hard to meet its goals like increasing productivity, providing quality materials, at the right quantity among others with some challenges being coming up because of the relationship procurement has with its suppliers.

Although having good suppliers is important, Kenyan organizations continue to struggle with the idea of supplier relationship management. In many public procurement entities, buyer-supplier relationship is viewed as a win-lose situation making suppliers to be treated in an adversarial manner by the buyers. This is not healthy and only short term relationships can be formed in such relationships and it can lead to poor procurement performance and the performance of the organization as a whole. For the success of the business, it is then very important for the supplier and buyer to maintain a very good and healthy relationship. According to (Bolo, 2017), (Gullingham, 2003) stated that care should be taken to make sure that the suppliers selected have capabilities and resources to fulfill the needs.

Supplier Relationship Management has prompted the need to enhance supply chain performance. Gently and Ford (2016) suggested that there is need to work on supply chain relationships in order to increase organizational productivity. According to (Olendo, 2016), Hsiao (2002) found out that Trust, communication and power dependence on supply contracts had a positive relationship on supply chain performance. Researches like (Tschannen-Moran, 2016) only investigated on the relationship between suppliers and buyers and another (Lamming, 2017) focused on performance measurement in strategic-supplier relationships hic failed to ink supplier relationship management and procurement performance.

Even though previous researches have evaluated the effects of supplier relationship management, many have mainly focused on its effects on supply chain as a whole and very few have focused on the procurement performance. Researches like (Tschannen-Moran, 2016) only investigated on the relationship between suppliers and buyers and another (Lamming, 2017) focused on performance measurement in strategic-supplier relationships hic failed to ink supplier relationship management and procurement performance. This study has therefore bridged the gap by providing more knowledge on the effects of supplier relationship management on procurement performance with specific reference to Coast Water Service Board.

3. GENERAL OBJECTIVE

The general objective of the study was to determine the effect of supplier relationship management on procurement performance of Coast Water Service Board.

3.1 Specific Objectives

1. To establish the effect of supplier collaboration on procurement performance of Coast Water Service Board
2. To determine the effect of supplier commitment on procurement performance of Coast Water Service Board
3. To evaluate the effect of supplier feedback on procurement performance of Coast Water Service Board.
4. To examine the effect of supplier lead time on procurement performance of Coast Water Service Board.

4. REVIEW OF LITERATURE

4.1 Theoretical Framework

This study was anchored on the following theories; Social Network Theory, Commitment-Trust Theory, Communication Theory and Transaction Cost Theory.

4.1.1 Social Network Theory

A social network can be defined as an association of people drawn together by family, work or hobby. This theory views social relationships in terms of nodes and ties, nodes being the individual actors within the networks, while ties are the relationships between the actors. This theory focuses on the role of social relationships in transmitting information, channeling personal or media influence, and enabling attitudinal or behavioral change (Liu, Sidhu, Beacom, & Valente, 2017).

The power of social network theory stems from its difference from traditional sociological studies, which assume that it is the attributes of individual actors. Whether they are friendly or

unfriendly, smart or dumb, etc. Social network theory produces an alternate view, where the attributes of individuals are less important than their relationships and ties with other actors within the network. This approach has turned out to be useful for explaining many real-world phenomena, but leaves less room for individual agency, the ability for individuals to influence their success, so much of it rests within the structure of their network (Stanley, Mark, John, & Clyde, 2017).

Rinio (2017) states that we all belong to different social networks which serve different purposes like meeting our varying intellectual, emotional and social needs. She further states that social network goes beyond the job titles and responsibilities one has but it being about how one interacts with others. Social networks have also been used to examine how companies interact with each other, characterizing the many informal connections that link executives together, as well as associations and connections between individual employees at different companies. These networks provide ways for companies to gather information, deter competition, and even collude in setting prices or policies (Moolenaar, 2016).

4.1.2 Commitment-Trust Theory

Morgan and Hunt (1994) came up with the commitment trust theory and argued that trust and commitment are the key links in the exchange between parties which then leads to a relational co-operation. The two then decided to dwell on two variables, that is commitment and trust (Robert & Shelby, 2017). Commitment is very important and can be explained as the degree to which close and persistent relationships with other parties are established and maintained. It can also be described as a strong desire to maintain a relationship (Kamarul & Tan, 2015). Commitments do not often change because people hardly make commitments to valueless relationships and suppliers' commitment to the organization shows the quality of their relationship (Margareta, 2016). According to Meyer and Allen (1991), commitment is divided into three that include affective commitment, continuance commitment and normative commitment. Continuance commitment also known as calculative commitment is the commitment to maintain a cooperative relationship and is based on cost and economic considerations. Affective commitment arises from identification with and emotional attachment to suppliers and normative commitment arises from a buyers' sense of obligation to maintain a cooperative relationship with a supplier.

Trust can be defined as the extent to which supply chain partners perceive each other as credible and benevolent (Doney & Cannon, 2017). It can also be defined as the willingness to rely on an exchange partner in whom one has confidence. According to (Ting, 2016), trust is in five dimensions of dependable/reliable, honest/candid, competent, partner orientation, and likeable/friendly while (Sako, 2015) operationalizes it in three dimensions of contractual trust, based on the belief that the other party will fulfill its promises and act as agreed, competence trust, based on the belief that the other party will be capable of doing what it has promised and trust in goodwill, based on the shared belief of both parties that the other is deeply compromised to promoting a good development of the relationship and is willing to do more than could be expected according to the contractual terms without expecting anything in exchange.

Bolton (2016) argues that trust gives the confidence that the other party can be relied upon and that it is also both a precondition and an outcome of collaboration. He believes that trust is conveyed through faith, reliance, or confidence in the collaborating partner and is viewed as a

willingness to forego opportunistic behavior. Supplier commitment can thus bring about better output as a result of good input by committed and trustworthy suppliers. Trust between the two parties may also reduce the need for buyers to monitor supplier deliveries and quality of inputs as well as reduce the need to enforce penalties in the case of lower quality inputs. In the long run, trust can help lead to increased quality, reduced transaction costs and timely delivery (Robert & Shelby, 2017).

4.1.3 Communication Theory

Communication theory was proposed by (Scudder, 1980). This theory states that all living beings that exist on the planet whether plants, animals or human beings communicate through sound, speech, visible changes, body movements, gestures or in the best possible way they can in order to make the others aware of their thoughts, feelings, problems, happiness or any other information. Thus the universal law of communication theory says that all living beings do communicate even though the way of communication may not be the same. Communication can simply be explained as the process of transferring information from the sender to the recipient where the recipient decodes the information and acts accordingly. Large number of people also supports this model of communication (Daniels, 2017)

Communication theory consists of seven traditions that are characteristic of the field: rhetoric, semiotics, phenomenology, cybernetics, socio-psychology, sociocultural theory, and the critical approach (Craig, 2016). Communication is a process of expression, interaction, and influence, in which the behavior of humans or other complex organisms expresses psychological mechanisms, states, and traits and, through interaction with the similar expressions of other individuals, produces a range of cognitive, emotional, and behavioral effects. According to (Cooren, 2016), communication has the basic elements that made the object of study of the communication theory. These included the Source that is responsible of producing a message or sequence of messages to be communicated to the receiving terminal, Sender that can also be referred to as a transmitter who operates on the message in some way to produce a signal suitable for transmission over the channel which is merely the medium used to transmit the signal from transmitter to receiver, the Receiver performs the inverse operation of that done by the transmitter, reconstructing the message from the signal, Destination is the person or thing for whom the message is intended, the message itself which is a concept, information, communication, or statement that is sent in a verbal, written, recorded, or visual form to the recipient and lastly Feedback.

The most commonly described models of communication by (Craig, 2016) include the Linear Model of communication which works in one direction only, a sender encodes some message and sends it through a channel for a receiver to encode. Another one is the Interactional Model of communication which works in two directions. People send and receive messages in a cooperative fashion as they continuously encode and decode information. The last one is the Transactional Model that assumes that information is sent and received simultaneously through a noisy channel, and further considers a frame of reference or experience each person brings to the interaction.

A world full of people who have brilliant ideas but don't possess the power of communication, they have strong desire for something but cannot express their desires, would make life so dull, blank and not worth living. That is how powerful communication is (Cooren, 2016). Human

beings need to communicate to express their views and feelings. Communication is hence very important between the buyers and the sellers with the sellers being able express their views and feelings on certain products, services or processes. This information can then be used in the organization to help improve the procurement performance.

4.1.4 Queuing Theory

This theory was created by Agner Krarup Erlang (1909) research when he was developing models to describe the Copenhagen telephone exchange. This theory uses mathematics to study queuing or waiting in line. Queues usually form when there are limited resources needed to provide a certain service or a product (Jeff, 2016). This theory uses a formulae known as little's law which can be summarized as the average number of items in a queuing system equals the average rate at which items arrive multiplied by the average time that an item spends in the system.

A model is structured in this theory to help predict how long an activity or a person will take when waiting for a service in a queue. This theory can widely be used in service provision since it shows the various scheduling processes that can be used when serving customers because it helps explain the various times it takes to finish a process. This theory has different policies that include first in first out (FIFO) where customers are attended to depending on their arrival, the first to arrive is served first. There is Last-in-First-Out (LIFO) where the customer who has the least waiting time is attended to first and lastly the priority principle where the customer with the highest priority is served first (Magenda, 2017).

This model helps estimate the waiting times for lead times and also helps predict the future and be able to meet demand. This theory can be used in different service sectors such as the banking sectors, customer care, manufacturing etc. since it enables them know how long customers will have to wait in the line (Ellram, 2016). This theory is useful in Supplier Relationship Management since the organization is able to know or calculate the lead times with which the suppliers will be expected to deliver products or services to the buyers. It also helps the organization know when to carry out the pre-processing activities like generating the LPOs and other documents. It helps shorten some other processes like preparation for quotations and organization will know what to do to help shorten lead times

4.1.5 Transaction Cost Theory

Transaction costs are those that include costs for outsourcing products or services, transaction costs, contracting, coordinating and searching costs. (Jill, 2016) States that organizations are economic actors using the most efficient mechanism for transactions and can be used to analyze supplier relationship management decisions concerning procurement performance. This theory posits that there are costs in using a market which include operational costs such as search costs and inventory holding costs as well as the costs of writing and enforcing a contract.

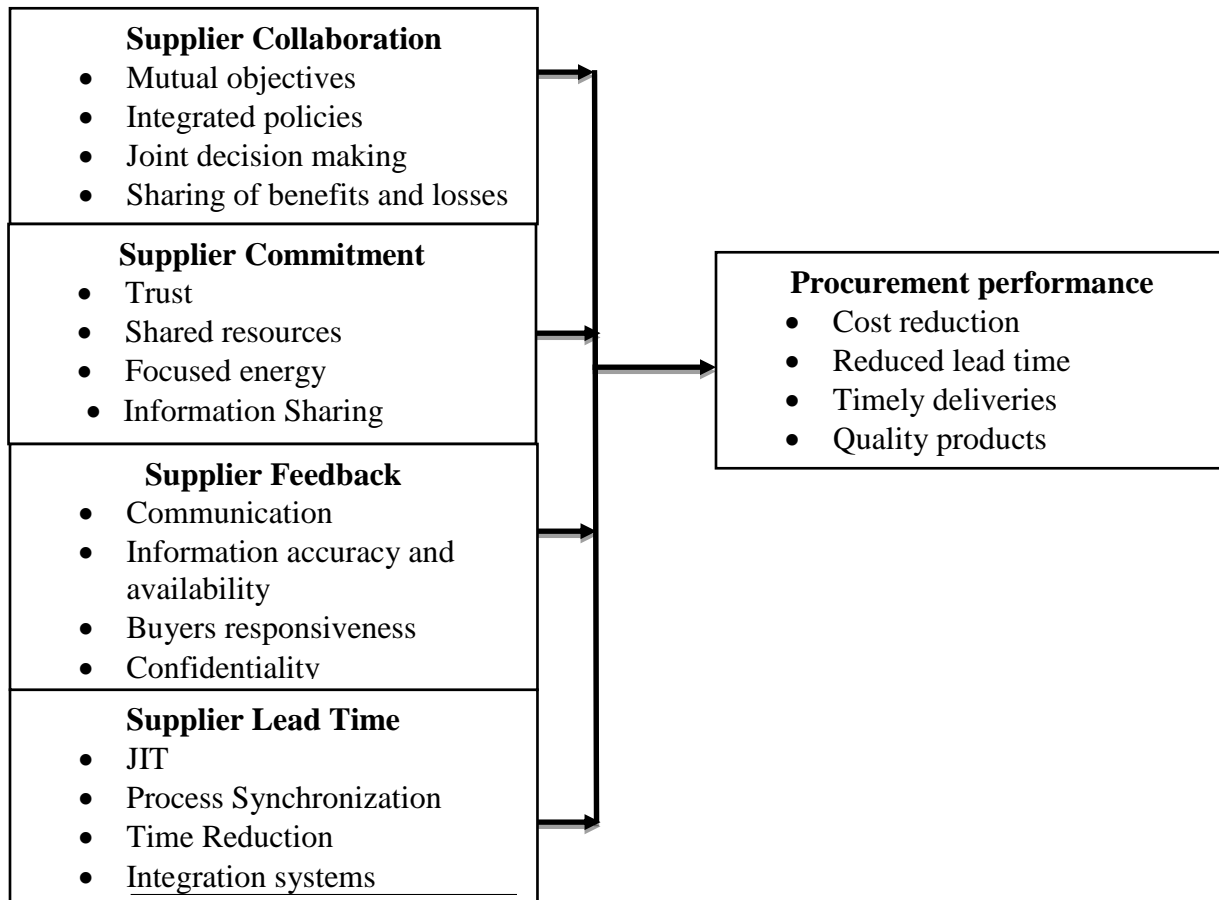
Williamson (1981) states that when a transaction is carried out, a number of costs arise in the economic system, these costs can be defined as transaction costs and are divided into three main categories: Information costs, related to seeking information on the potential partner, Bargaining costs, related to negotiating and drawing up of contracts where all possible situations in future transactions are considered and Enforcement costs, to enforce performance, resolve conflicts and renegotiate contracts. Excessive costs may cause transactions to be transferred to other

institutions through outsourcing, these institutions in turn internalize market transactions by governing them through long-term contracts that create mutual dependence, improve reciprocal control, curb opportunism, and allow for better cooperation between the parties involved (Mroczek-Dąbrowska, 2017).

Having and maintaining good relationships with supplier helps reduce some transactional costs for instance the costs for searching for new suppliers, less coordination costs among other costs. If a firm opts to use suppliers to supply instead of developing in-house, it will definitely increase its transaction costs and most likely lose its economies of scale (Grover, 2017), because the increased size of the firm will require increased internal co-ordination. It would however take advantage of the economies of scale and scope of the vendor while at the same time reducing internal coordination costs. By managing the relationship between the parties, especially the suppliers, the firm will increase its external co-ordination costs. This will in the long run help minimize the costs that are incurred when carrying out transactions in organizations (Bremen, 2016).

4.2 Conceptual Framework

A conceptual framework is a diagrammatical representation of the relationship between the dependent and independent variables. It describes phenomenon under study accompanied by graphical or visual depiction of the major variables of the study. An independent variable is the variable with the primary interest in the study and is affected by the dependent variables.



Independent Variables

Dependent Variables

Figure 1 Conceptual Framework

4.3 Review of Study Variables

4.3.1 Supplier Collaboration

Collaboration can simply be defined as two or more chain members working together to create a competitive advantage through sharing information, making joint decisions, and sharing benefits which result from greater profitability of satisfying end customer needs than acting alone (Simatupang & Sridharan, 2017). In supplier collaboration, business transaction is a relational exchange as the roles of supplier and buyer are no longer defined in terms of the simple transfer of ownership of products. By focusing on relational exchange, collaboration entails the activities that are undertaken jointly rather than unilaterally (Zineldin, 2018).

According to (Mattessich & Monesy, 2016) the requirements for effective collaboration include mutual objectives, integrated policies, joint decision making, information sharing, sharing of benefits and losses. Supply Collaboration also reduces supply chain variability by sharing demand and supply forecast with customers and suppliers across multiple tiers. It allows buyers to share production plans, forecasts, and commitments, allowing suppliers to be more responsive when meeting demand requirements from thousands of miles away. With a high level of communication, companies can improve on-time delivery rates to customers and adapt to rapidly changing demand without adding to inventory costs. Supply Collaboration aligns supply and demand across tiers (Bryman, 2017).

There also is another thing called partnership influence, where the organization gets multiple suppliers to work together to improve the performance of critical components or subsystems (Kamau, 2016). Aligning benefits and incentives in supplier collaboration is very important. One of the obvious challenges for collaboration programs is getting suppliers to participate in them. Companies sometimes undermine their own chances of a partnership by being overly cautious about sharing information. A core requirement for successful collaboration is trust and willingness, on the part of both buyer and supplier, to share information. In addition, strategic suppliers are strategic for a reason; they have their own market power and may be skeptical about what's in it for them. This means that many suppliers can't be forced into a collaborative partnership; they must be persuaded (Sarkar, 2017).

4.3.2 Supplier Commitment

According to (Hands, 2019), Commitment is the belief that business partners are willing to devote energy to sustaining the relationship. It can also be defined as an enduring desire to maintain a valued relationship. Through commitment, partners dedicate resources to sustain and further the goals of the collaboration. A good buyer-supplier relationship is often characterized by several things with commitment being one of them. Relationship continuity is the willingness of parties to prolong their agreement to cooperate during a period of time, indefinite or not, in the future. A strong commitment to a relationship ensures that the relationship stays and continues for long (Allsop & Saks, 2015).

Commitment to a relationship by each party is influenced by the perception it has for other party's commitment. When the buyer makes pledges, it demonstrates commitment, and the other party also responds to this by making pledges, in this manner increasing its own commitment. Commitment by suppliers is very essential since studies show that firms that are committed have high chances of sustaining their relationships compared to those with suppliers that are not

committed to delivering as expected thus leading to short term relationships (Abushal & Adenubi, 2016). There are three major dimensions of operationalizing commitment; instrumental commitment, where an actor is constrained by the costs and inconveniences of leaving the current collaboration, normative commitment, which is based on the partners value in the collaboration and affective commitment which relates to a partner's identification and involvement with the others (Burton, 2017).

Commitment by supplier can lead to procurement effectiveness, efficiency and increased productivity since the suppliers' views and believes that the relationship with the organization has so much importance that it deserves the optimum level of efforts to sustain it. The supplier believes that the relationship endures for the foreseeable future. A strong commitment and high level of trust between supply chain partners are the bases for a successful supply chain performance. Effective planning in supply chain based on trust and shared information among supply chain partners is a fundamental requirement for a successful supply chain management.

4.3.3 Supplier Feedback

Feedback simply means the reaction to a product, a service or a performance of a task which can be used in the basis of improvement. Feedback informs one of how well or bad one is performing. In supplier relationship management, supplier feedback is the reaction that the supplier gives the buyer on the products, services and even performances and sometimes even gives advice on what can be done in order to improve performance in the organization (Bolo, 2017). According to (Wainaina, 2017) there are two general types of feedback, that is the positive feedback which gives a good praise to the product, service or performance and then there is the negative feedback which is not necessarily a complaint but it gives information that will require action be taken. This can be used in procurement where feedback from the suppliers can be both positive, giving praise to the buyer like timely payment and negative feedback.

Easy flow of information between suppliers and buyers can also be made possible through supplier awareness. Supplier awareness is the process of sensitizing and informing suppliers on the importance of using e-procurement system as suppliers with different organizations. Awareness includes any attempt to increase job related information, knowledge and skills of employees or suppliers. This can be done within or outside the organization (Fjermestad & saitta, 2017). The suppliers are made aware of the platforms that are available where information can be received and relayed much faster and feedbacks simply given through the systems.

Supplier feedback is very important when it comes the relationship that the buyer and suppliers have and every organization has there on processes that they have put in place on how feedback can be handled (Ellram, 2016). It is also very important for both the supplier and the procuring entity to practice confidentiality when dealing with information from suppliers. Whether positive or negative, supplier feedback is something that should be encouraged in procuring entities, whether positive or negative, feedback enables an organization know if they are doing the right thing or there are some things that should be changed or encouraged in terms of their products and services thus ways of improving the procurement performance of the organization (Burton, 2017).

4.3.4 Supplier Lead Time

Supplier lead time is the time taken when an order has been taken to when it is delivered by the supplier. Lead time is controllable and can be shortened though at the expense of extra costs in order to improve customer service, reduce inventory investment in safety stocks, and improve system responsiveness. (Roland, 2017) . According to (Magenda, 2017), lead time can be divided into three categories. There is fixed lead time which is also known as quotation lead time is the time taken to get all the details required by the customer and responding back to the client. Pre-Processing lead time is the administrative or procurement lead time, it is the time taken from when a requisition is made to when a contract is executed and lastly processing lead time which can be defined as time taken to complete an order.

According to Joan (2017), Burton (2000) explains that most of the lead time problems, with an approximation of 80% are accounted for by the suppliers. Some strategies like JIT help reduce lead time and its purchasing requires the suppliers deliver frequent supplies in small lots. For this to happen a lot easier, the supplier and the buyer have to synchronize their production planning and control systems. JIT helps avoid uncertainty and increase responsiveness and also helps reduce the amount of stock held hence less costs realized when holding stock.(Larson & Kulchitsky, 2016) empirically found that lead time performance was affected by information quality and close relationships between the buying firm and the supplier firm. (De-Toni, Nassimbeni, & Tonchia, 2016) pointed to the importance of the logistic link between the buyer and supplier, particularly under JIT system, where suppliers have to completely respond to the requirements of the buyer in terms of quality and quantity. They argued that such link would be enhanced by small lot size and coordinated.

4.3.5 Procurement Performance

According to (Bolo, 2017), (Van, 2006) states that SRM is considered to be the result of two elements: purchasing effectiveness and purchasing efficiency. Growth allows the organization to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses and decides on future initiatives with the goal on how to improve growth improvements. One of the measures of procurement performance is responsiveness, time, delivery which measures the amount of time in weeks or months from the concept of ordering to the delivery of final product to the market with the objective of continuous reduction in time.

Delivery of goods and services is another measure of performance and since it directly deals with customers it is referred to the driver of customer satisfaction Gunasekaran, Patel, & Tirtiroglu, (2016). Supply procurement performance must be linked to customer satisfaction and transparency in winning bids and prices Lee & Billington (2017). There also is the need to measure integration of customer specification in design, to set the dimensions of quality, for cost control and as a feedback for the control process.

Some of the performance metrics may include; flexibility, customer query time; that's the time it takes for a firm to respond to a customer inquiry with the required information, reduction in customer complaints, warranty claims, customer satisfaction and order entry accuracy (Pohlen & Coleman, 2016). Transportation performance in procurement can be measured in terms of total transportation costs, number of vehicles operated, percentage of outbound shipment, percentage of inbound shipment, fraction of transportation mode, percentage of timely delivery, average kilometers vehicles operate in full load or empty load, percentage of accidents (Lysons &

Farrington, 2016). According to Pohlen & Coleman (2016), procurement performance can also be measured through inventory performance and the quality of products and goods.

5. RESEARCH METHODOLOGY

This research adopted a descriptive survey research design to address the formulated hypotheses. Stratified random sampling technique was used to select a sample size of 54 respondents from the target population of 62 respondents at Coast Water Service Board. The study selected respondents in the rank of top managers, IT, procurement, accounts and technical division who formed the sample size of 54 respondents. Primary data was collected by use of self-administered structured questionnaires which were distributed through the drop and pick method. Secondary data collected from various government websites, in annual and published financial statements, in national newspapers, during annual general meetings and in-house magazines, important business disclosures in journals, manuals and the various firm’s documents were used to cross validate the primary data information collected.

6. DATA ANALYSIS AND RESULTS

6.1 Correlation Analysis

Table 2 Pearson Correlation

		PP	SC	SCO	SFB	SLT
Procurement Performance	Pearson	1				
	Correlation					
	Sig. (2-tailed)					
	N	50				
Supplier Collaboration	Pearson	.720**	1			
	Correlation					
	Sig. (2-tailed)	.000				
	N	50	50			
Supplier Commitment	Pearson	.613**	.642**	1		
	Correlation					
	Sig. (2-tailed)	.000	.000			
	N	50	50	50		
Supplier Feedback	Pearson	-.343*	-.109	-.268**	1	
	Correlation					
	Sig. (2-tailed)	.001	.294	.009		
	N	50	50	50	50	
Supplier Lead Time	Pearson	.443**	.046	-.219*	.032	1
	Correlation					
	Sig. (2-tailed)	.007	.659	.033	.759	
	N	50	50	50	50	50

KEY:PP=Procurement Performance, SC=Supplier Collaboration, SCO=Supplier Commitment SFB=Supplier Feedback, SLT=Supplier Lead Time

******. Correlation is significant at the 0.01 level (2-tailed).

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

In trying to show the relationship between the study variables, the study used the Karl Pearson's coefficient of correlation (r). The results findings were as indicated in Table 2 above. From the findings, it was found out that there was a positive correlation between the independent variables, supplier collaboration, supplier commitment, supplier feedback and supplier Lead Time and dependent variable procurement performance. According to Sekaran (2015), this relationship is assumed to be linear and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive relationship). The correlation coefficient was calculated to determine the strength of the relationship between dependent and independent variables (Kothari and Gang, 2017). The results findings show that the coefficient of correlation, 'r' equal to 0.720, 0.613, -0.343 and 0.443 for Supplier Collaboration, Supplier commitment, Supplier Feedback and Supplier Lead Time. As indicated in the Table 2 above, it shows that a positive relationship between independent variables and dependent variable apart from Supplier Feedback which is inversely related to Procurement Performance which may be due to the organization not encouraging feedback from its Suppliers.

6.2 Coefficient of Determination (R²)

Table 3 below indicates an overall P-value which less than 0.005 (5%). This implies that the overall regression model is significant at the calculated 95% level significance. Coefficient of determination explains the extent to which changes in the dependent variable that is the procurement performance can be explained by the change in the independent variables that is Supplier Collaboration, Supplier Commitment, Supplier Feedback, Supplier Lead Time or the percentage of variation in the dependent variable that is explained by all independent variables.

Table 3 Coefficient of Determination (R²)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797 ^a	.636	.619	1.86158

- a. Dependent variable: Procurement Performance
- b. predictors: (Constant), Supplier Collaboration, Supplier Commitment, Supplier Feedback, Supplier Lead Time

The regression model summary shows the coefficient determination R square as 0.636. Implying that at 63.6% of the relationship is explained by the identified four independent variables namely; Supplier Collaboration, Supplier Commitment, Supplier Feedback, and Supplier Lead Time. The 36.4% is explained by other factors in the corporation that were not studied in this research.

6.3 Regression Analysis

The study applied ANOVA to establish the significance of the regression model. Statistically, a model is considered significant if its p-value was less or equal to 0.05. The Table 4 below shows significant level of regression model, with p-value of 0.000 which is less than 0.05. This indicates that the regression model is statistically significant in predicting the effect of supplier relationship management performance in Coast Water Services. Fixing the confidence level at 95%, the analysis shows high reliability of the results obtained. The overall ANOVA results

indicates that the model was significant at $F=39.249$, $p\text{-value} = 0.000$, this demonstrates that the overall model was significant and that supplier collaboration, supplier commitment, supplier feedback and supplier lead time significantly affects procurement performance.

The results were consistent with findings of Shalle *et al.*, (2017) who reported that “the organization can enhance its procurement performance and subsequently gain competitive advantage if buyer/supplier collaboration is established through sharing information making joint decision, inter-organizational relationship”. Wachiuri & Waiganjo (2015) adds that “organization should work closely with their supplies to establish a long term relationship which in turn leads to a win-win situation but to also a win more-win more situations”. This implies that collaboration has significant effect between supplier relationship and procurement performance.

Table 4 ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	544.065	4	136.016	39.249	.000 ^b
	Residual	311.893	45	3.465		
	Total	855.958	49			

a. Dependent variable: Procurement Performance

b. predictors: (Constant), Supplier Collaboration, Supplier Commitment, Supplier Feedback, Supplier Lead Time

6.4 Regression Analysis

Table 5 Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.919	7.705		2.196	.031
	Supplier Collaboration	.378	.140	.182	2.706	.008
	Supplier Commitment	.829	.247	-.223	-3.352	.001
	Supplier Feedback	.270	.095	.258	2.835	.006
	Supplier Lead Time	.387	.064	.521	6.054	.000

a. Dependent Variable: Procurement Performance

The general regression Model arrived at was $Y = 16.919 + 0.378X_1 + 0.829X_2 + 0.270X_3 + 0.387X_4$.

Where

X_1 = Supplier Collaboration, X_2 = Supplier Commitment, X_3 = Supplier Feedback, X_4 = Supplier Lead Time and Y = Procurement performance of Coast Water Service Board.

Therefore; Procurement Performance of Coast Water Service Board = 16.919 + 0.378 Supplier Collaboration + 0.829 Supplier Commitment + 0.270 Supplier feedback + 0.387 Supplier Lead

Time. The Beta Coefficients in the regression model show that all of the tested variables had positive relationship with procurement performance of Coast Water Service Board, with all the variables tested being statistically significant with p-values less than 0.05.

The findings implies that a unit change of X_1 (Supplier Collaboration) = 0.378, will results in to 0.378 change in the Procurement Performance in Coast Water Service Board; X_2 (Supplier Commitment)= 0.829, will results in to 0.829 change in the Procurement Performance Coast Water Service Board; X_3 (Supplier feedback)= 0.270; will results in to 0.270 change in the Procurement Performance in Coast Water Service Board., and finally X_4 (Supplier Lead Time) = 0.387, will results in to 0.387 change in the Procurement Performance Coast Water Service Board.

The Y- Intercept ($\beta_0 = 16.919$), predict that the procurement performance in Coast Water Service Board, when all other variables are zero, implying that without the independent variables that include; Supplier Collaboration, Supplier Commitment, Supplier Feedback and Supplier Lead Time

From the analysis in table 4.15, Supplier commitment X_2 ($\beta = 0.829$, $p < 0.05$) has the strongest relationship with the Procurement performance in Coast Water Service Board, followed by Partnership X_4 ($\beta = 0.387$, $p < 0.05$), then Supplier development X_1 ($\beta = 0.378$, $p < 0.05$), and finally Supplier Feedback X_3 ($\beta = 0.270$, $p < 0.05$). All four variables significantly predicted procurement performance of Coast Water Service Board.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The results from instruments were analyzed and interpretations were recorded. From the research study, it is evident that supplier collaboration, supplier feedback, supplier commitment and supplier lead time are key determinants of procurement performance in Coast Water Service Board.

Majority of the respondents agreed by a mean of 3.76 and a standard deviation of 1.335 that collaborating with suppliers has led to efficiency in the procurement processes of the organization.

Study established that Commitment by suppliers has led to procurement effectiveness, efficiency and increased productivity, this in short-term guarantees an increase in productivity, reduction inventory and cycle time while in long-term, organization will experience increase in market share and profit for all members of the supply chain.

The study further showed that supplier feedback has an inverse effect on the procurement performance and this may be due to factors like poor systems to relay and act on feedback from suppliers, information not being accorded maximum security and the organization does not encourage feedback from suppliers.

In terms of effectiveness and efficiency, supplier lead time was noted to play a significant role in enhancing effectiveness and efficiency on the procurement performance. Respondents strongly agreed with (mean= 3.82 and STD, = 1.337) that lead time reduction has helped reduce the

amount of stock to be held in the organization's premises hence reduction in cost realised hence holding stock.

7.2 Recommendation

1. Coast Water Service should involve suppliers in design of projects and programmes and appreciate their inputs.
2. Coast Water Service Board should put more emphases on building long term relationships with suppliers.
3. Coast Water Service should put in good systems for information relay and faster action should be taken on feedback from suppliers.
4. The study recommends that the Coast Water Service board integrates its systems with its suppliers, which eases the flow of the procurement processes, use systems like JIT

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