

## Assessing the Operational Relationships within the Supply Chain Management: Case Study at Koforidua Central Hospital, Eastern Region.

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### **Abstract:**

*The modern approach to purchasing is to create a common objective that enables a climate of mutual cooperation and assistance in which both parties win. This study was to assess the operational relationships within the supply chain management in the health sector. A sample size of 40 was chosen and it consists of personnel from the finance, stores, procurement, quality control and administration of Koforidua Central Hospital. Questionnaire and interview were employed in the data collection. The study revealed that the type of buyer supplier relationship that exists in Koforidua Central Hospital is that of a collaborative relationship but supply chain activities of the various facilities does not integrate. It was also evident that the organization experiences stock redundancy and the reason behind the stock redundancy is lack of data on consumption. It is therefore recommended that, the organization should integrate the entire internal department and should also involve suppliers at the early stage of planning, designing so that the right specification can be obtained. With this the management can use two stage tendering as its procurement method. Spot check should be used in stock taking to identify the loopholes in stock and also use stock monitoring systems to help curb stock redundancy in the organization.*

**Keywords:** Operational; Relationships; Supply Chain Management; Koforidua Central Hospital; Ghana.

### **INTRODUCTION**

Supply chain management has become the importance through global industry and competition and is likely to remain a major element in worldwide competition (Shakerian et al., 2016). Supply chain management is defined by Mentzer, (2001) as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. Supply chain management focuses on how firms utilize their suppliers' processes, technology, and capability to enhance competitive advantage. Hence, Supply chain management enhances competitive performance by closely integrating the internal cross-functions within a company and effectively extending them to the external operations of external partners to be successful (Cooper, 1993 and Ellram; Lambert, James and Elram, 1998; Kim, 2006; Tan, Kannan, and Hadfield, 1998, Otchere et al., 2013). It is a holistic advance to request, source, and purchase logistics process administration (Kherbacha and Mocan., 2016).

The term "supply chain management" according to Van der Vorst (2004) is relatively new. It first appeared in logistics literature in 1982 as an inventory management approach with an emphasis on the supply of raw materials Oliver and Webber (1982). By 1990, academics first described supply chain management from a theoretical standpoint to clarify how it differed from more traditional approaches to managing the flow of materials and the associated flow of information Cooper and Ellram (1993). The growing interest in Supply chain management, according to Lummus and Vokurka (1999) is attributable to three (3) basic factors, thus, growing specialization or focus on core activities by many firms, intense competition from both local and international sources, and the realization by firms that maximizing performance of one department or function may lead to less than optimal performance for the whole company. Agreeing with this assertion, Cooper et al., (1997) in their research concluded that, the concept of supply chain

management arose over the recognition that sub-optimization occurs if each organization in a supply chain attempts to optimize its own results rather than to integrate its goals and activities with other organization to optimize the results of the chain.

As stated by Christopher (1998), it is not actually individual companies that compete with each other in this modern period; rather, competition is between supply chains. Supply Chain Management has become a critical factor for the organization's success. Over the years, the nature of competition has changed to the extent that companies no longer compete against other companies on the bases of quality as traditionally practiced in the 80s Fawcett et al. (2007). However, the new source of business competition lies outside the walls of an organization, and is determined by how effectively companies link their operations with their supply chain partners; suppliers, distributors, wholesalers, retailers and end costumers (Petrovic-Lazarevic et al. 2007).

Per definition, Lyons and Farrington (2006) explained relationship as an association or a connection. Supply chain results in a set of relationships among suppliers, manufacturers, distributors and retailers that facilitates the transformation of raw materials into final products. Therefore an assessment of a supply chain system cannot be divorced from the consideration of the types, importance as well as challenges of relationships that exist between the players in the chain. Despite the expectations from the health institutions, the world as a whole and Ghana in particular is faced with plethora of health problems ranging from pestilence, poor and ineffective collaboration between the upstream and downstream suppliers for effective management, inadequate health logistics for effective and efficient health delivery, lack of data on consumption is also reported and finally inventory cost were high because of large stock of redundancy and information sharing. The objective of this present study is therefore to assess the operational relationships within the supply chain management in the health sector at Koforidua Central Hospital. That is to find out operational relationship that will enhance supply chain function, examine health logistics that will promote efficient health delivery, to identify the types of data that must be shared in the operational function to promote efficiency in the supply chain and to access the cause of large stock of redundant and merely used component.

This study is significant in that the result will add to knowledge in the area of relationship within the supply chain which seems to be limited. The outcome of the study obviously will help the organization to better plan their relationship activities to suit the supply chain in the organization. Also a study of this sort will inform management of the organization as to how possible challenges of relationship management could be mitigated to bring better performance.

## **RESEARCH METHODOLOGY**

### **Sample Size and Sampling Procedure**

The instrument used in the collection of data was a questionnaire and interview. A sample size of 40 was chosen and the sampling frame consisted of personnel from the finance, stores, procurement, quality control department and administration of Koforidua Central Hospital. The questionnaires allocated to the departments include 5, 7,4,6,6 and 12 respectively.

### **Data collection Techniques/Methods**

The source of data collection was that of primary data. A major determinant of the validity and objectivity of the work is the technique employed in the data collection. The instrument used in the collection of data was a questionnaire. The questionnaire was a form prepared by the researchers and that shows the list of questions arranged in a sequential manner. The questionnaires were administered and sent by hand to the respondents.

## **Questionnaires**

Questionnaires were used because it is clear, unambiguous and uniformly workable. It permits wide coverage for the minimum expense that is both money and effort. Besides, it elicits more candid and objective replies, since it does not require any means of identification. Questionnaires were issued to elicit information from the procurement division of the Koforidua central hospital, administration and quality control department. Closed ended and open questions were used in the questionnaire. Closed ended and opened questions were used because they provide relevant information and the respondents will know what is required of them.

## **Interviews**

Apart from the questionnaires that were administered, interviews were also conducted on 10 of the respondents to seek vivid opinion on the topic under consideration. The interview was to allow the researcher to gain an extensive understanding of the procurement processes, challenges and merits being endured by the hospital. Open ended questions were used to allow the interviewee the opportunity to express their views and give explanations as to the reasons why things are done the way they are done in their organization.

## **Instrumentation**

In this research, questionnaires and interview were used to collect the data. Close ended items in the questionnaire was used to come out with the divergent view from the respondents. The theme of the questionnaire was to solicit and discover the contribution of buyer-supplier relationship in the organization.

## **Source of data**

**Secondary data:** analysis of secondary data the central hospital was critically examined and compared against recommended buyer-supplier relationships that exist in the organization.

**Primary data:** this was gathered through the use of questionnaire, interviews made by the researchers. The respondents were asked to indicate their opinion about the contribution of buyer-supplier relationships in terms of the level of customer satisfaction, communication network in the organization and complaints of customers in the organization.

## **Data analysis**

Both qualitative and quantitative tools of data analysis were employed to analyze the volume of information that was obtained from the field. Through interviews, opinions of respondents on the topic were analyzed, summarized and tabulated. For the quantitative analysis, charts, tables and graphs drawn from statistical package for social science (SPSS) software to analyze the data collected with questionnaires.

## **DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

### **Demographic Characteristics of Respondents**

**Age of Respondents**

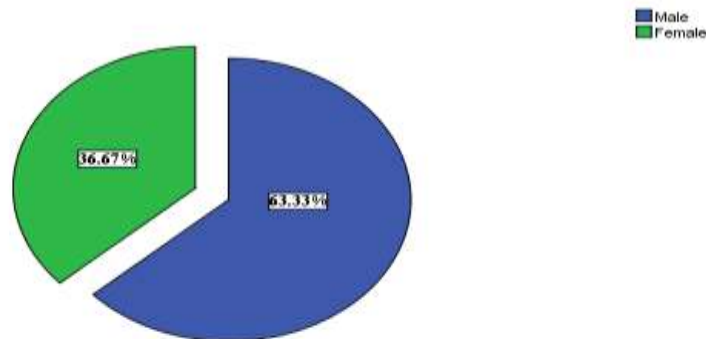
Age	Frequency	Percentage	Valid Percentage	Cumulative Percentage
25-30	4	13.3	13.3	13.3
31-35	8	26.7	26.7	40.0
36-40	14	46.7	46.7	86.7
41-50	3	10.0	10.0	96.7
51 and above	1	3.3	3.3	100.0
Total	30	100.0	100.0	

**Source: Field survey, July, 2015**

Table 1 shows that 4 respondents which represent 13.3% fell between the age of 25 to 30 years; 8 of the respondents which represent 26.7% fell between the ages of 31-35 years; 14 respondents which represent 46.7% fell between the ages of 36 to 40 years; 3 respondents which represent 10% fell between the ages of 41 to 50 year and 1 respondent which represent 3.3% fell between the age of 51 and above. This implies that most of the respondents who are involved in the supply chain are in their middle ages.

**Gender of Respondents**

**Gender Of Respondents**



**Source: Field survey, July, 2015**

Figure 1 shows that 19 respondent representing 63.3% were males whilst 11 respondents representing 36.7% were females. This means that most of the supply chain practitioners were males.

**Analysis of Departments Involved In Supply Chain Management**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Account	5	16.7	16.7	16.7
Procurement	15	50.0	50.0	66.7
Stores	8	26.7	26.7	93.3
Administration	2	6.7	6.7	100.0
Total	30	100.0	100.0	

Source: Field survey, July, 2015

Table 2 shows that 5 respondents were from the accountancy department representing 16.7%, 15 respondents were from the procurement department representing 50%, 8 respondents were from the stores department represent 26.7% and 2 respondents were from the administrative department representing 6.7%. This means that most of the staffs involved in the supply chain are from the procurement and stores departments.

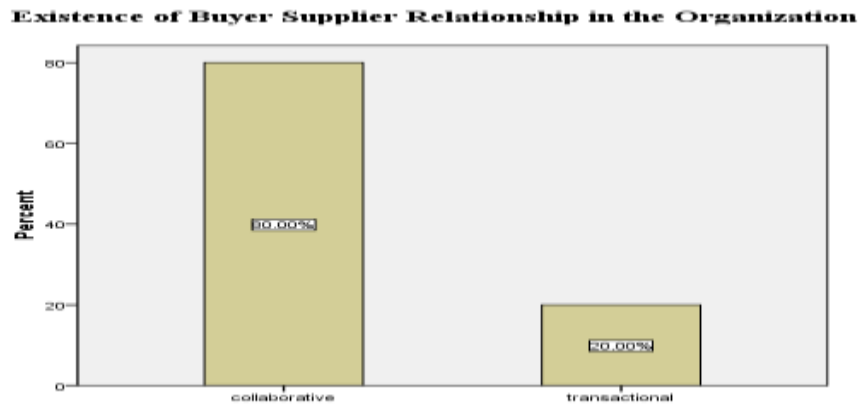
**Number of Year’s Respondents Has served in the Organization**

Years	Frequency	Percentage	Valid Percentage	Cumulative Percentage
1-2	5	16.7	16.7	16.7
3-4	7	23.3	23.3	40.0
5-6	15	50.0	50.0	90.0
7-8	3	10.0	10.0	100.0
Total	30	100.0	100.0	

Source: Field survey, July, 2015

Table 3 shows that 5 respondent which represent 16.7% have spent 1 to 2 years in the organization; 7 respondents which represent 23.3% have spent 3 to 4 years in the organization; 15 respondents which represent 50% have spent 5 to 6 years in the organization and 3 respondents which represent 10% have spent 7 to 8 years in the organization. This means that majority of the respondents have worked in the organization for long and have enough knowledge in the aspect of supply chain management.

**Assessing the Relationship that exist in the Organizations Supply Chain**



Source: Field survey, July, 2015

Figure 2 shows that 24 respondents which represent 80% said that collaborative relationship exist between the buyer and the supplier, 6 respondents which represent 20% said that short term relationship exist between the buyer and suppliers. This means that the relationship that exists between the organization and its suppliers is that of a collaborative relationship.

**Level of Collaboration that Exist between the external Suppliers and the Organization**

Parameters	Frequency	Percentage	Valid Percent	Cumulative Percentage
Excellent	4	13.3	13.3	13.3
very good	16	53.3	53.3	66.7
Good	6	20.0	20.0	86.7
Poor	3	10.0	10.0	96.7
very poor	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Source: Field survey, July, 2015

Table 4 shows that 4 respondents which represent 13.3% said that the level of collaboration that existed between external suppliers and the organization is excellent, 16 respondents which represent 53.3% said the level of collaboration between the external suppliers and the organization is very good, 6 respondents which represent 20% said the level of collaboration between the external suppliers and the organization is good, 3 respondents which represent 10% said the level of collaboration between the external suppliers and the organization is poor and 1 respondents which represent 3.3% said the level of collaboration between the external suppliers and the organization is very poor.

This means that the level of collaboration between the external suppliers and the organization is very good.

**Factors that Account for Stock Redundancy**

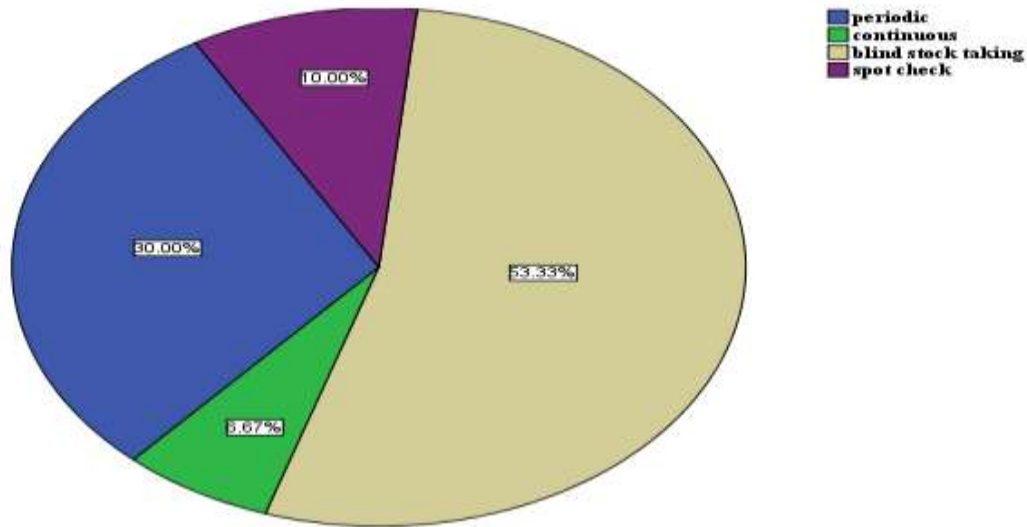
	Frequency	Percentage	Valid Percentage	Cumulative Percentage
lack of data on consumption	17	56.7	56.7	56.7
stock proliferation	4	13.3	13.3	70.0
poor stock taking	3	10.0	10.0	80.0
over supplying	6	20.0	20.0	100.0
Total	30	100.0	100.0	

Source: Field survey, July, 2015

Table 5 shows that 17 respondents which represent 56.7% said lack of data on consumption account for redundancy in the organization, 4 respondents which represent 13.3% said stock proliferation account for redundancy in the organization, 3 respondents which represent 10% said poor stock taking account for redundancy in the organization, 6 respondents which represent 20% said over supplying of items by the suppliers account for redundancy in the organization. This means that, what mostly accounts for redundancy in the organization is lack of data on consumption.

**How the Organization Takes Stock**

**How the Organization Take Stock**



Source: Field survey, July, 2015

Figure 3 shows that 9 respondents which represent 30% said stocktaking is than on periodic basis, 2 respondents which represent 6.67% said stock is taking continuously, 16 respondents which represent 53.3% said the organization uses blind stocktaking and 3 respondents representing 10% the organization uses spot check in taking stock. This satisfies that stocktaking is conducted on a blind stock check in the organization.

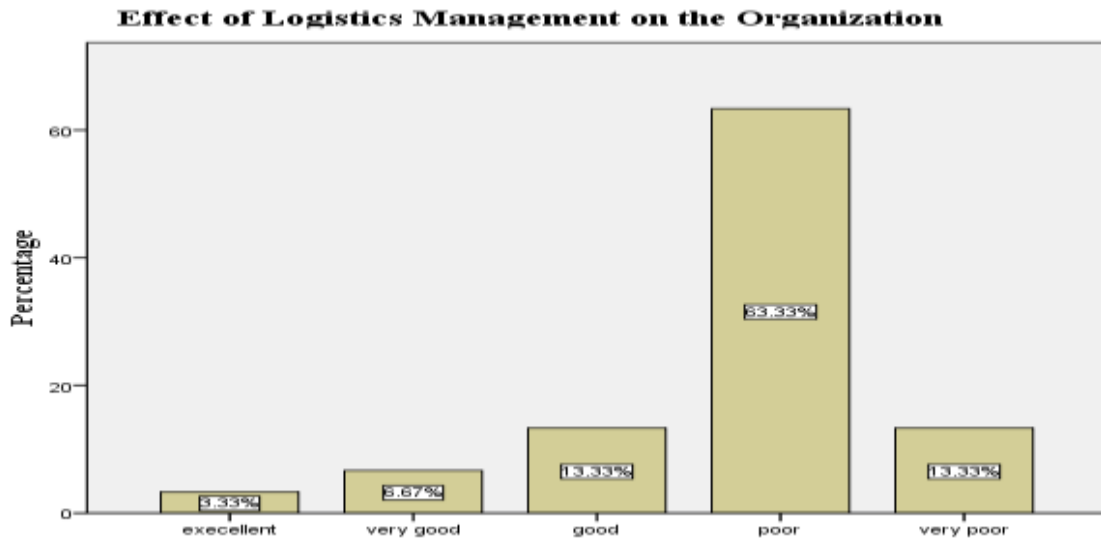
**Assessing the Complains Reported by Customers**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
wrong packaging	1	3.3	3.3	3.3
non-availability of goods	5	16.7	16.7	20.0
expired goods	3	10.0	10.0	30.0
damaged goods	21	70.0	70.0	100.0
Total	30	100.0	100.0	

Source: Field survey, July, 2015



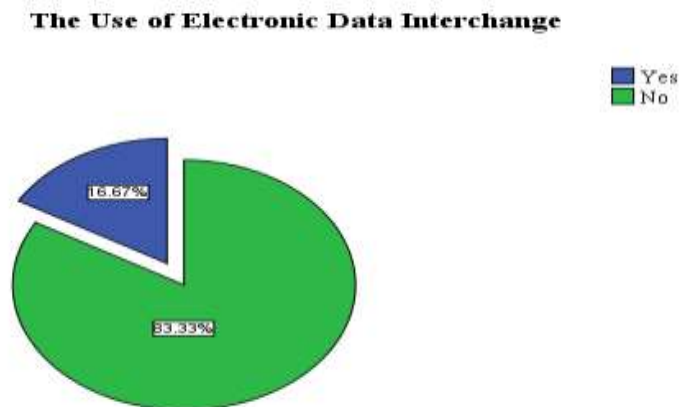
Table 6 shows that 1 respondent which represent 3.3% said customers complain of wrong packaging, 5 respondents which represent 16.7% said customers complain of non-availability of product, 3 respondents which represent 10% said customers complain of expired goods and 21 respondents which represent 70% said customers complain of damaged goods. This means that customers normally complain of damaged good in the organization.



Source: Field survey, July, 2015

Figure 4 shows that 1 respondents which represent 3.33% said that the effect of logistics management on the organization is excellent, 2 respondents which represent 6.67% said that that effect of logistics management on the organization very good, 4 respondents which represent 13.33% said that the effect of logistics management on the organization is good, 19 respondents which represent 63.33% said that the effect of logistics management on the organization is poor and 4 respondent which represent 13.33% said that the effect of logistics management on the organization is poor. This means that the effect of logistics management on the organization is poor.

**The Use of Electronic Data Interchange**



**Source: Field survey, July, 2015**

Figure 5 shows that 5 respondents which represent 16.7% agreed that electronic data interchange is used in the organization and 25 respondents which represent 83.3% disagreed to the use of electronic data interchange in the organization. This means that electronic data interchange is not used in the organization.

**How Stock Is Classified**

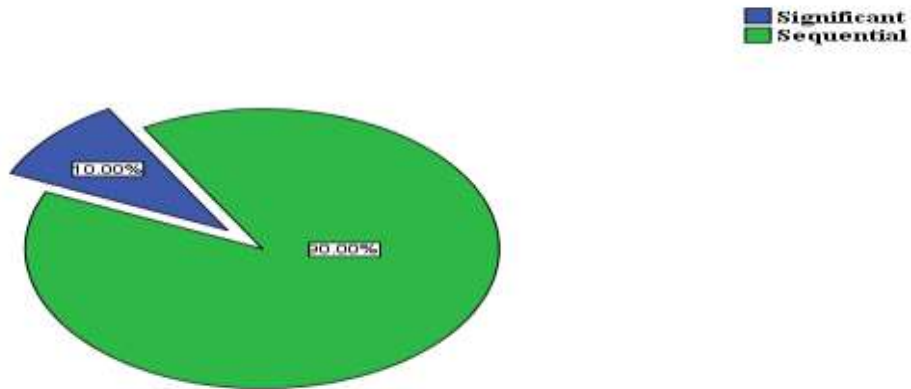
	Frequency	Percentage	Valid Percentage	Cumulative Percentage
ABC analysis	4	13.3	13.3	13.3
Usage	3	10.0	10.0	23.3
Demand	4	13.3	13.3	36.7
lead-time	19	63.3	63.3	100.0
Total	30	100.0	100.0	

**Source: Field survey, July, 2015**

Table 7 shows that 4 respondents which represent 13.3% said that stock is classified base on the ABC analysis, 3 respondents which represent 10% said that stock is classified base the usage, 4 respondents which represent 13.3% said that stock is classified base on demand and 19 respondents which represent 63.3% said that stock is classified base the lead-time of the items. This means that the organization classify it stock based on the lead-time of the consignment.

**Assessing the Coding Systems used by the Organization**

**The Coding System Used by the Organizaion**



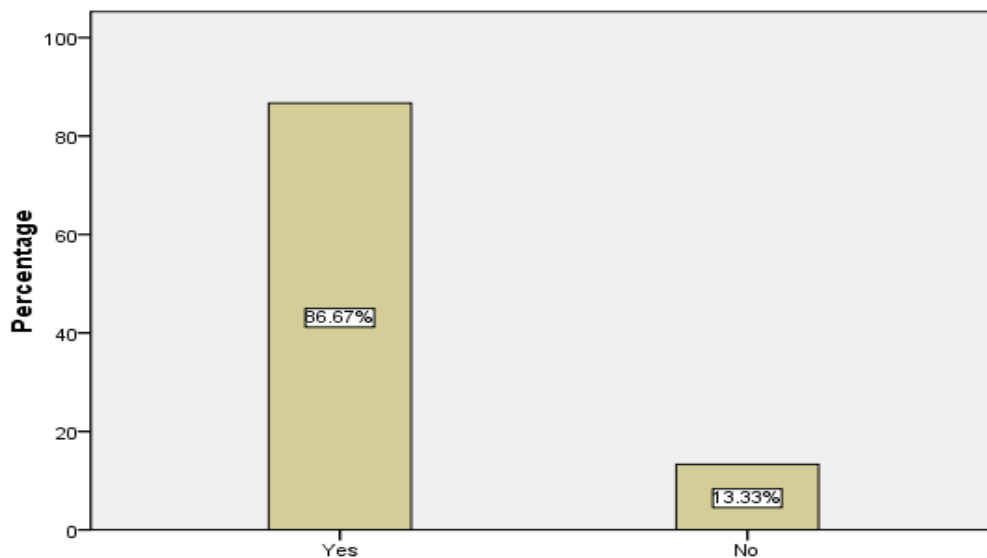
**Source: Field survey, July, 2015**

Figure 5 shows that 3 respondents which represent 10% said the organization uses the significant coding system and 27 respondents which represent 90% said the organization uses the sequential coding system.

This means that the organization uses the sequential coding system to code it stock items.

**Availability of a Professional Procurement Officer in the Organization**

**Availability of Procurement Officer**



**Source: Field survey, July, 2015**

Figure 6 Shows that 26 respondents which represent 86.7% said yes to the existence of a professional procurement officer and 4 respondents which represent 13.3 said no the existence of a professional procurement officer. This shows that the Organization has a professional procurement officer.

## **SUMMARY OF FINDINGS**

The findings made during research indicated that, Koforidua central hospital is into buyer- supplier relationship. It was also discovered that the type of buyer supplier relationship that exists in Koforidua Central Hospital is that of a collaborative relationship.

The researchers also discovered that the organization experiences stock redundancy and the reason behind the stock redundancy is lack of data on consumption. The researchers also discovered that the Organization faces stock out because there are no stock control systems to monitor stock levels and stock taking was done periodically.

The researchers also unveiled that, customers normally complained of damaged goods in the organization and this was as a result of poor effect of logistics management on the organization.

The survey also revealed that the organization do not use electronic data interchange to transact business with suppliers and the lack of electronic data interchange resulted into poor specification and late delivery.

The research showed that, the organization used the sequential coding system to code it stocked items. And also it was clear that the organization classified it stock base on the lead time of the item. The researchers found out that the organization used manual systems to keep data on stock.

According to the study, it was revealed that Koforidua Central Hospital has a professional procurement officer. The researchers discovered that procurement was a unit on its own and makes all purchases with respect to the components, parts and services in the hospital.

## **CONCLUSION AND RECOMMEDATION**

The study saw the importance of the contribution of operational relationship to the firms supply chain management. It is therefore important for an Organization to pay keen attention to the relation they adopt since purchasing has evolved from an adversarial relationship to a strategic and collaborative supply chain function.

The study concludes that every organization can enjoy a more flexible, responsive partnership and improve their firm's performance when they adopt an integrative and collaborative type of buyer supplier relationship.

Based on the findings, the following recommendations are made:

- Management should integrate the internal departments and external suppliers to reduce supply chain inefficiencies and enhance joint planning and development for mutual benefit.
- The organization should integrate the entire internal departments and should also involve suppliers at the early stage of planning, designing so that the right specification can be obtained.
- The researchers recommends that the organization should use spot check in stock taking to identify the loopholes in stock and also use stock monitoring systems to help curb stock redundancy in the organization. This will help to free up capital to the organization.
- Management should use the significant coding systems to keep data on stock for easily identification to avoid stock proliferation. Standardization a variety reduction can be used to solve the problem of stock proliferation.

- Management should apply both the computerized system and the manual systems as a method of keeping records. The use of computerized systems will help the procurement department source for suppliers electronically.

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