Role Of Supplier Relations Management On The Performance Of Hospitals In Nairobi County

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ABSTRACT
This study sought to find out the role of supplier relations management on the performance of selected hospitals in Nairobi County. The main factors that were examined include; supplier selection, supplier contracting, supplier development and supplier payment. The methodology of this study was purely qualitative. In the present study, a census survey approach was taken in which the target population comprising all the 115 registered hospitals in Nairobi County formed the study sample. Purposive sampling techniques was then employed whereby the units of analysis were key informants comprising top level officials from procurement departments across the 115 hospitals, bringing the sample size to 115. Data was obtained through primary data sources by means of questionnaires administered to a selected sample. Descriptive and inferential statistics were used to analyze the data collected. In descriptive statistics, frequencies, percentages, mean and standard deviation were used. In inferential statistics, regression analysis was used to determine the relationship between variables. The findings are presented in tables and graphs. Descriptive statistics reveal that a majority of practitioners in supplier relations management across the institutions surveyed put significant consideration both in the suppliers' organizational and financial stability and product quality thereof. There is low adoption levels of various supplier development measures across a majority of the institutions surveyed. It was also found that prices are a key consideration in supply chain performance. This can be attributed to the fact that spending less in procurement leads to minimized logistical expenditure and a higher profit margin. The study also found that supplier contracting has moderately to greatly impacted supply chain performance in most of the institutions reached. Inferential statistics revealed a positive correlation is seen between the each supplier relations management aspect and Performance. The strongest correlation was obtained between supplier selection and Performance (r = .798) and the weaker relationship found between Supplier development and Performance (r = .436). Supplier payment and Supplier contracting are also strongly and positively correlated with Performance at correlation coefficient of .716 and .708 respectively. All the independent variables were found to have a statistically significant association with the dependent variable at 0.05 level of confidence.
Keywords: supplier relations management, supplier development, supplier contracting, hospitals

INTRODUCTION
The study sets out to explore the role of supplier relations management on the performance of hospitals in Nairobi County. Although labor costs constitute the major share of the total costs of a medical treatment, there is still a high economic potential in improving expenditure on products and services (European

Commission, 2008). Supplier Relationship Management (SRM), understood as approach to systematically managing an organization's interactions with the companies that supply products and services to it, can help to reduce costs and enhance quality of service delivery (Mettler & Rohner, 2010). However, since hospital buying agents were only expected to attain the best price for the needed goods in the recent past, the trust between the buyer and the supplier is weak and the relationship is antagonistic. Therefore, and in contrast to industries with intense competition like for example the automotive or the consumer electronics industry, SRM is not paid much attention to in health care academia and practice yet. Although the adoption of electronic services saves the costs of the preparation and transmission of paper requests and invoices and eliminates costly, time-consuming errors from manual data entry by connecting ordering systems with production systems (Giannakis. 2010), only 38 percent of the German hospitals implemented an electronic purchasing order and 35 percent an electronic invoice (Forker *et al.,* 2012).

Global Perspective of Supplier Relationship Management in Hospital

In Switzerland, health care research and practice and the concept of SRM are not paid much attention yet. The weak positioning of the purchasing department in the value chain of health service delivery and resulting low attention on the part of the hospital's board of directors makes it difficult to promote the purchasing function from a pure cost driver to a respectable facilitator of health service delivery that contributes to revenue increases, knowledge acquisition, and added value to the organization. Accordingly, hospital buyers were just expected to attain the best price for the needed goods. Therefore trust between the buyer and the supplier is weak and the relationship is oftentimes adversarial. Due to the onward 'marketization' of health care, open-minded hospital managers expect that the hospital procurement department will increasingly contribute to revenue gains and to knowledge acquisition in future (Mettler & Rohner, 2010).

In order to achieve this goal, the hospital purchasing departments have to better integrate internal consumers as well as the external suppliers. Hence, cooperation (trust and commitment), coordination (processes and work practices), and communication (information systems) will be the key concepts to implement the required change. However, as the current research is mainly focused on industrial enterprises, it is the aim of this paper to provide an actual but sector-specific discussion of the subject matter and present first experiences of a SRM implementation project of a Swiss hospital. We believe that a better understanding of the meaning and perspectives of SRM could improve collaboration between internal and external partners (purchasing department, medical clinics, suppliers, and trading partners) and possibly enhance the adoption of SRM concepts and technologies (Sonmez, 2008).

The Swiss government has hence adopted health care and considered it to be different from most other industries due to the high level of regulation, the high proportion of governmental investment, the associated low pressure in respect of effectiveness and efficiency of state-subsidized health care organizations and the lack of orientation towards customer benefit (Quayle, 2012). As a consequence of that, the health care sector shows a relatively underdeveloped information system structure. However, in order to provide optimal health service delivery there is a long-standing practice of including information beyond the traditional boundaries of a single health care organization (Tracey & Vonderembse, 2010). Furthermore, Mettler and Rohner (2010) add that there is an imminent obligation for cooperation in order to comply with the requirement of both, internal (for instance, doctors, pharmacists, nurses) and external stakeholders (patients, governmental agencies, suppliers).

Local Perspective of Supplier Relationship Management in Hospital

In Kenya, studies on supplier relationship management and development, concludes that Supplier Development Strategy, Supplier Motivation Strategy and Supplier Relationship Strategy affect procurement performance positively though the effect is not on a very significant scale. Supplier Evaluation and Rating Strategy and Communication Strategy affect procurement performance negatively. Between these two, only communication Strategy has a significant impact on procurement performance. On how hospitals use Supplier Motivation Strategy, Supplier Relationship Strategy, Supplier Evaluation and Rating Strategy and Communication Strategy to develop suppliers, the study concludes that Nairobi

Hospital has a better approach to supplier development compared to Kenyatta National Hospital (Chepkwony, *et al*., 2014).

The origin of this study, very minimal evidence exists so far, but considering the similarities between the health systems the adoption rate should be more or less at the same level. This ratio is diminutive compared to the aviation industry where 85 percent of the organizations actively use e-procurement in their daily business. Between 35 and 40 percent of hospital supply-related costs are caused by handling and processing material and purchasing orders, while in competitive industries this amount is less than 10 percent (Grossman, 2010).

Some evidence suggests that this is going to change. To some extent hospital purchasing departments already are stipulated to contribute to revenue increases and to knowledge acquisition. Hence, the role of the supplier who formerly was considered to be an opponent (for example, within price negotiations) will change to a business partner who contributes an added value to the hospital and therefore needs to be better involved in terms of cooperation (business relationships), coordination (processes and work practices), and communication (electronic services).

As a consequence, the concept of SRM will become more relevant for health care organizations as well as for supply chain management research. Because the hitherto existing literature is mainly focused on industrial enterprises, it is the aim of this chapter to provide a sector-specific discussion. In taking a different approach to perceive SRM, the understanding of possible impacts of SRM will be enhanced and encourage the application of these concepts and electronic services.

Statement of the Problem

The health care sector shows a relatively underdeveloped information system structure and therefore poor relations management (Parente, 2010). However, in order to provide optimal health service delivery there is an imminent obligation for moving beyond the traditional boundaries of a single health care organization to strategically managing key relations management in order to comply with the requirement of both, internal (case in point doctors, pharmacists, nurses) and external stakeholders (patients, governmental agencies, suppliers) (Porter and Olmsted, 2011; Avison and Young, 2012). Herzlinger (2012) and Porter and Olmsted (2011) however concede that health care is considered to be different from most other industries due to the high level of regulation, the high proportion of governmental investment, the associated low pressure in respect of effectiveness and efficiency of state-subsidized health care organizations and the lack of orientation towards customer benefit.

Supply chain management practices and innovation have been found to positively influence supply chain performance as well as the overall performance of the organizations (Ling and Ling, 2012). Studies on supplier relations in the healthcare context are however scanty, and largely conducted in developed economies. In Kenya, Hassan (2012) asserts that supply chain management practices in humanitarian organizations are critical for the performance of the organizations as the speed at which humanitarian aid is delivered at the point of need. Chepkwony et al. (2014) found that there have been numerous complaints from the general public regarding erratic supplies of the essential drugs and other medical supplies in most hospitals in the country. This coupled with the scanty literature on the state of supply relations management and the influence thereof on performance of hospitals forms the basis for the present study. The study set out to assess the role of supplier relations management on performance of hospitals in Nairobi County.

Objectives of the study

The general objective of the study was to assess the role of supplier relations management on performance of hospitals in Nairobi County.

    i.   To establish the role of supplier selection on the performance of hospitals in Nairobi County.

   ii.   To ascertain whether supplier contracting has a role on the performance of hospitals in Nairobi County.

 iii.   To establish the role of supplier development on the performance of hospitals in Nairobi County.

 iv.   To determine the role of supplier payment on the performance of hospitals in Nairobi County.

Research Questions
Towards the end, this study sought to find answers to the following key questions:
    i.   How does supplier selection affect the performance of hospitals in Nairobi County?
    ii. To what extent does supplier contracting affect the performance of hospitals in Nairobi County?
    iii. In what ways does supplier development affect the performance of hospitals in Nairobi County?
    iv. How does supplier payment affect the performance of hospitals in Nairobi County?

LITERATURE REVIEW
Theoretical Review
The Theory of Transaction Cost Economics
The theory of transaction cost economics was driven by the objective of profit maximization. The basic assumption underlying the theory suggests that relationships between buyers and suppliers lower transaction costs and facilitate investment in relation-specific asset (Williamson, 1981, 1985). This makes reference to the relative cost of using markets as opposed to firm controlled resources for determining the resource allocation decisions. In the context of sourcing decisions, the firms source internally to minimize costs. This will prevent the supplier from taking for granted on the buyer side. On the other hand, if the supplier can produce a lower cost compared to sourcing internally, then the buyer should choose for external sourcing (Hsu *et al*., 2008). However, transaction costs do not depend duly on the quantity or variety of the products but also the supplier ability in fulfilling the buyer expectations (Hsu *et al*., 2008). It is found that opportunism will not be a concern over highly specific assets if there is mutual beneficial relationship between the buyer and suppliers (Irwin *et al*, 2010).
The transaction cost theory underpins supply selection variable in the present study. In an effort to minimize costs associated with potential delays and inadequate logistical arrangements, a healthcare organization will be keen to settle for suppliers that have all its logistics well factored to avoid any unplanned expenditure or losses.

Systems Theory
According to Rudolph (2011), Systems theory is the interdisciplinary study of systems in general, with the goal of elucidating principles that can be applied to all types of systems at all nesting levels in all fields of research. The term does not yet have a well-established, precise meaning, but systems theory can reasonably be considered a specialization of systems thinking; alternatively as a goal output of systems science and systems engineering, with an emphasis on generality useful across a broad range of systems versus the particular models of individual fields (Senge, 2009)
The term originates from Bertalanffy's general system theory (GST) and is used in later efforts in other fields, such as the action theory of Talcott Parsons and the social systems theory of Niklas Luhmann. A central topic of systems theory is self-regulating systems, that is, systems self-correcting through feedback. Self-regulating systems are found in nature, including the physiological systems of our body, in local and global ecosystems, and in climate and in human learning processes (from the individual and upwards through international organizations like the UN (Bertalanffy, 2011)

Empowerment Theory
According to Tones & Tilford (2001), Empowerment theory has been identified as a principal theory across various disciplines. Adapted from Zimmerman's (1984) work, Rappaport (1987) adapted it to community psychology studies. Ever since, the theory has found its way into social studies as a key concept in remedying inequalities and towards achieving better and fairer distribution of resources for communities, (Rose 2001).
According to the theory, empowerment refers to the ability of people to gain understanding and control over personal, social, economic and political forces in order to take action to improve their life situations. It is the process by which individuals and communities are enabled to take power and act effectively in gaining greater control, efficacy, and social justice in changing their lives and their environment. It is a process that fosters power in people, for use in their own lives, their communities, and in their society, by acting on issues that they define as important. (Zimmerman 2000).

This view is shared by Lee (2009) who more recently define empowerment as a notion of people having the ability to understand and control themselves and their environments (including social, economic, and political factors), expanding their capabilities and horizons and elevating themselves to greater levels of achievement and satisfaction. This can be deduced to mean that empowerment is a process that has a number of qualities such as: having decision making power, having access to information and resources, having a range of options from which to make choices. Infact, Zimmerman (2000), the originator of this theory, argues that empowered individuals have the characteristics of high self esteem, self-efficacy, control over their life and increased socio-political and civic participation.

Resource Based Theory

The resource-based view (RBV) as a basis for the competitive advantage of a firm lies primarily in the application of a bundle of valuable tangible or intangible resources at the firm's disposal. To transform a short-run competitive advantage into a sustained competitive advantage requires that these resources are heterogeneous in nature and not perfectly mobile. Effectively, this translates into valuable resources that are neither perfectly imitable nor substitutable without great effort. If these conditions hold, the bundle of resources can sustain the firm's above average returns (Crook *et al*., 2008).

Resources are the inputs or the factors available to a company which helps to perform its operations or carry out its activities (Black and Boal 2008, Grant 2008 cited by Ordaz *et al*.2012). Also, these authors state that resources, if considered as isolated factors do not result in productivity; hence, coordination of resources is important. The ways a firm can create a barrier to imitation are known as ''isolating mechanisms'', and are reflected in the aspects of corporate culture, managerial capabilities, information asymmetries and property rights (Hooley & Greenlay 2011). Further, they mention that except for legislative restrictions created through property rights, the other three aspects are direct or indirect results of managerial practices.

RBV underpins supplier payment variable in the present study. In this case the supplier is expected to leverage its financial resources to enhance its efficiency in deliveries. To this, end, timely payment by the client and conflict minimization on the same should be observed.

CONCEPTUAL FRAMEWORK

Conceptual framework is a scheme of variables which the study operationalizes in order to achieve the set objectives. A variable being the measurable characteristic that assumes different values among the subjects, independent variables are the ones that the study manipulates in order to determine their effects on another variable. The dependent variable attempts to indicate the total influence arising from the effects of the independent variables. It therefore varies as a function of the independent variables (Mugenda & Mugenda, 2012)

Independent variable, according to Nachmias & Nachmias (2009) is the presumed cause of changes in the values of the dependent variable; the dependent variable is expected to be influenced by the independent variable. This is illustrated in figure 1 . The independent variables in this study are supplier selection, supplier development, supplier payment, supplier contracting and how they affect the performance of hospitals.
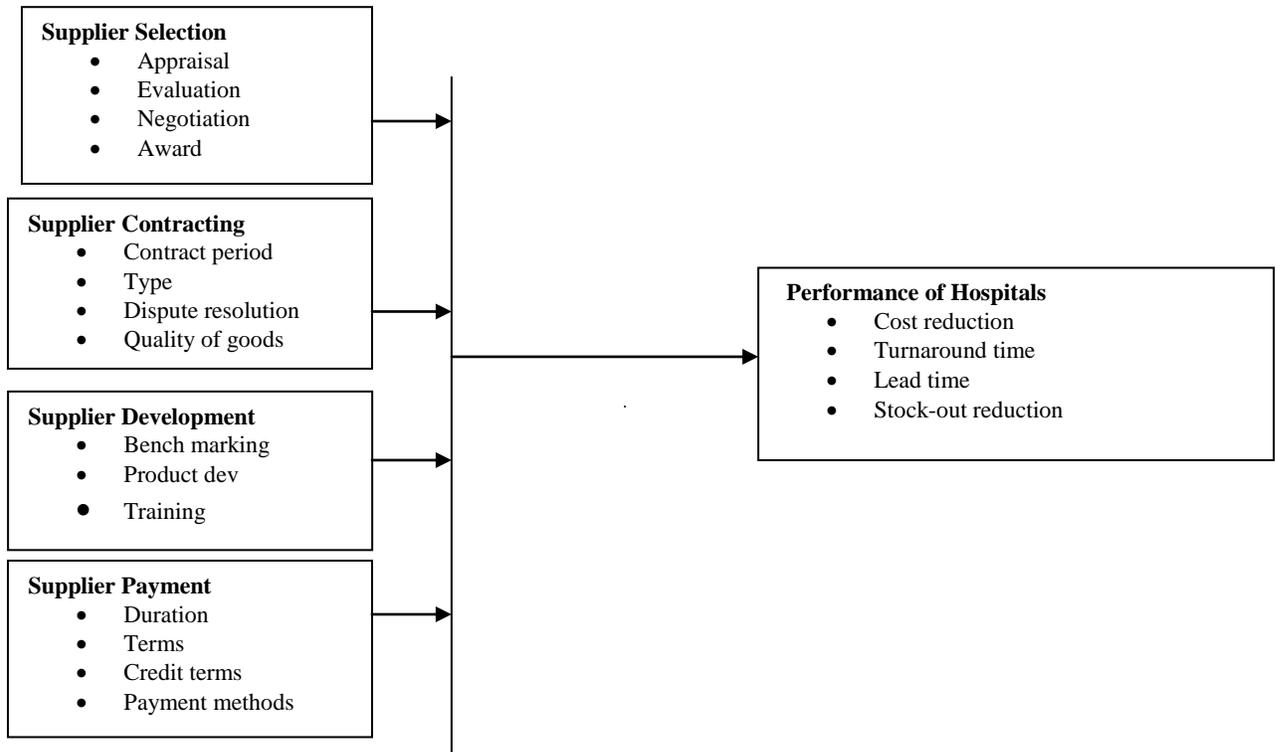
Independent Variables   **Dependent Variable**

Figure 1. Conceptual Framework

RESEARCH METHODOLOGY

Research Design

This study employed a descriptive approach on the role of supplier relations management to the performance of hospitals. According to Mugenda & Mugenda (2008), the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. The descriptive design was deemed appropriate because the main interest is to establish the relationship and analyze how the influential factors support matters under analysis in the hospitals.

Target Population

According to Explorable statistics (2011), a target population is generally a large collection of individuals or objects that is the main focus of a scientific query. It is for the benefit of the population that researches are done. Target population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions. The target population usually has varying characteristics and it is also known as the theoretical population. The target population for this research study was all the 115 registered hospitals in Nairobi County.

Sample & Sampling Technique

According to Mugenda & Mugenda (2008), a sample size of between 10 and 30 % is a good representation of the target population, while a census survey is conducted for extremely small target population sizes. As such, in the present study, a census survey approach was taken in which the target population comprising all the 115 registered hospitals in Nairobi County formed the study sample. Purposive sampling techniques was then employed whereby the units of analysis was key informants comprising top level officials from procurement departments across the 115 hospitals, bringing the

sample size to 115. The study achieved a response rate of 83.5% with 96 respondents reached, out of the 115 targeted.

Data Collection Tool

The questionnaire is developed to address each specific objective, research question or hypothesis of the study (Mugenda & Mugenda 2003). Questionnaires were administered to the respondents chosen for the study using the drop and pick method of questionnaire administration. Given the sensitivity of procurement information, the study relied on the university identification letter to make respondents aware that the data so collected is only for academic use.

Pilot Testing

The study carried out a pilot study to pretest and validate the questionnaire and the interview guide. According to Cooper & Schindler (2012), the pilot group can be 1% of the population apart from the sample. This therefore translated to 2 respondents other than the 54 sampled respondents.

Validity of Instruments

This study used the pilot study to help improve face validity of instruments. According to Borg and Gall (1989), content validity of an instrument is improved through expert judgement. Content validity was hence established in this study by seeking assistance from supervisors who are experts in research thus helping improve the content validity of the instrument.

Reliability of Instruments

According to Walliman & Nicholas (2010), reliability refers to the consistency of measurement and frequency assessed using the test-retest reliability method. Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. Reliability is concerned with the question of whether the results of a study are repeatable. A construct composite reliability co-efficient (Cronbach alpha) or 0.7was considered to be adequate for this study. The acceptable reliability coefficient is 0.6 and above (Rousson, Gasser & Seifer, 2011). To this end, the study performed Cronbach alpha reliability tests.

Data Analysis and Presentation

The study pursued the completed research instruments and document analysis recording sheets. Quantitative data collected using questionnaires shall be analyzed by the use of descriptive statistics using Statistical Package for Social Sciences (Version 22.0) because it has new formulas for statistics and are presented through percentages, means and frequencies. The information was also displayed by use of frequency tables, charts and other figures applicable in data presentation. Content analysis was used to analyze data collected from the unstructured questionnaires that is of qualitative nature.

The correlation coefficient was two-tailed as the relationship outcome expected could either be positive or negative and at 95% confidence level. Correlation is used to determine the strength of relationship between dependent and independent variables. Correlation value of 0 shows no relationship between the independent and dependent variable whereas when the value is not or equal to 1.0, there is a perfect negative or positive relationship respectively. Values shall be interpreted between 0 (no-relationship) and 1.0 (perfect relationship) (Levin & Rubin, 2008)

Multiple regression analysis was conducted to give various outputs. The ANOVA table was used to make interpretations and discussions of the study. The results are presented in form of frequency tables and diagrammatic illustrations. The ANOVA Multiple regression equation was applied as below:

The regression model was as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

Y= Role of supplier relations management on performance

α = Constant.

X_1 = Supplier Selection; X_2 = Supplier Contracting; X_3= Supplier Development; X_4= Supplier Payment

$\beta_1, \beta_2, \beta_3, \beta_4 =$ Coefficients; $\epsilon =$ Error

Reliability Test Results

A pilot study was carried out in order to determine reliability of the questionnaires. Reliability of the questionnaires was then evaluated through Cronbach's Alpha which measures the internal consistency. The Alpha measures internal consistency by establishing if certain item measures the same construct. Nunnally (1978) established the Alpha value threshold at 0.7 which the study benchmarked against. Cronbach Alpha was established for every objective in order to determine if each scale (objective) would produce consistent results should the research be done later on.

The reliability test results shows that all the scales were significant, having an alpha above the prescribed threshold of 0.7. Supplier payment had the highest reliability (α=0.833) followed by Supplier development (α=0.819), then Supplier selection (α=0.811), while Performance and Supplier contracting had the lowest, albeit significant, at 0.792 and 0.778 respectively. The study thus found that the analysis was reliable and could be used for further investigation.

RESULTS AND DISCUSSION

Demographic information

Response by Age

The study deemed age an important demographic characteristic in the present study with a view to establish any pertinent trends in the variables under study as well as to have an overview of the age distribution thereof. Age was also deemed a relative indictor of respondents' length of experience hence reliability of responses. Results as illustrated in figure 4.1 above reveal that a majority of respondents, 38.1% fall within the 31 - 40 years age category. This was closely followed by those within the 41 - 50 years age category as indicated by 36.7% of the respondents. The 51-60 years age category followed with a 9.7% representation while only 9.2% and 6.3% of respondents fell between 51 - 60 years and above 61 years respectively. As such, it can be deduced that age, across the institutions surveyed is majorly youthful to middle age, distributed, between 31 and 50 years. A rich diversity in experience was thus established. Figure 2 presents the findings.
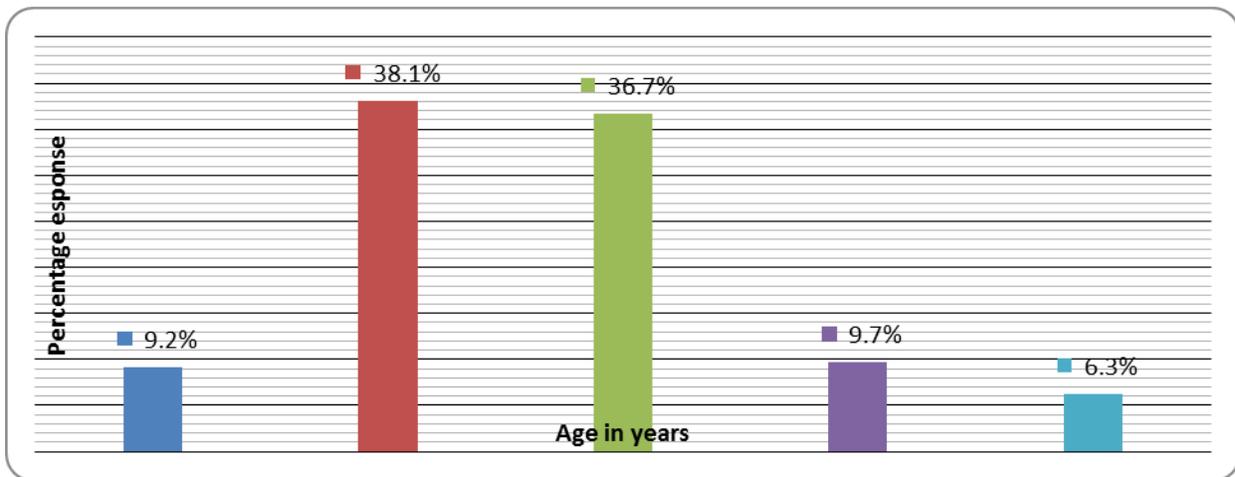

Figure 2. Response by Age

Response by Gender

In order to show the gender distribution and parity across the institutions included in the survey, the study sought to determine the respondents' gender. Respondents were thus required to indicate by checking either male of female response categories provided. As presented in table 4.3, male respondents, 61 (63.5%), registered the most as compared to their female counterparts, 35 (36.5%). It follows then from the findings, that male respondents made the dominant gender in the study. Female respondents were

however also adequately represented, implying that responses from both genders are represented in the study. Results are presented in table 1.

Table 1. Response by Gender

Gender	Frequency	Percent
Male	61	63.5
Female	35	36.5
Total	96	100.0

Response by Education Level

Respondents were asked to indicate their highest levels of education. This would serve to show the academic qualification among respondents in their respective positions, as well as a general overview of education levels among respondents in the study area. From the findings, a majority of respondents, 39.7% of respondents indicated having attained a Degree education level, followed by 34.3% having attained a Diploma level. A further 15.4% indicated having attained a Masters level, while only 7.2% and 3.4% had attained Post graduate and Certificate levels respectively. Overall, the study area can be said to comprise staff from relatively high levels of education. This was expected as individuals in respondents' positions are ideally expected to possess relatively high levels of education as a qualification. Findings are as shown in figure 3.
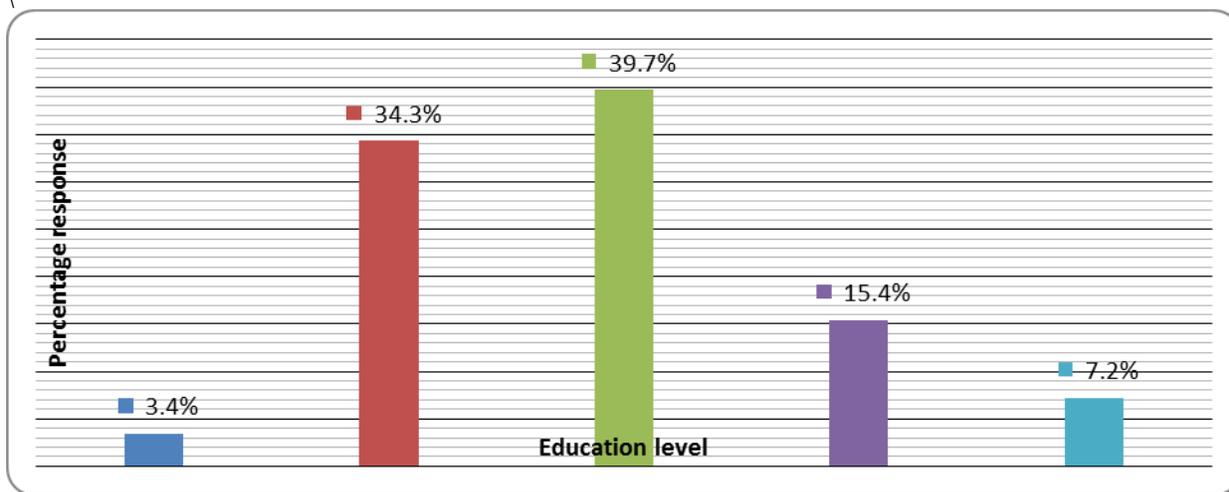
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Figure 3 Response by Education Level

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Response by Professional Training

Respondents were further asked to indicate whether they had any other Professional training in support of their nature of work. This would serve to show the extent of respondents' expertise and conversance with the subject matter. As illustrated in figure 4.3 below, a majority of respondents (56.4) do not have a professional training to support their job development, while only 43.6% affirmed to having a professional training, most of whom citing workshops and seminars attended. It can be deduced from the finding that a considerable number of respondents are up to date with professional developments in the field of supply chain and procurement. The supply chain and procurement professions are dynamic with emerging technologies aimed at making the processes thereof more agile and lean. It is thus paramount that professionals in these fields get professionally updated with emerging issues in order to enhance performance. Figure 4 below presents the findings.
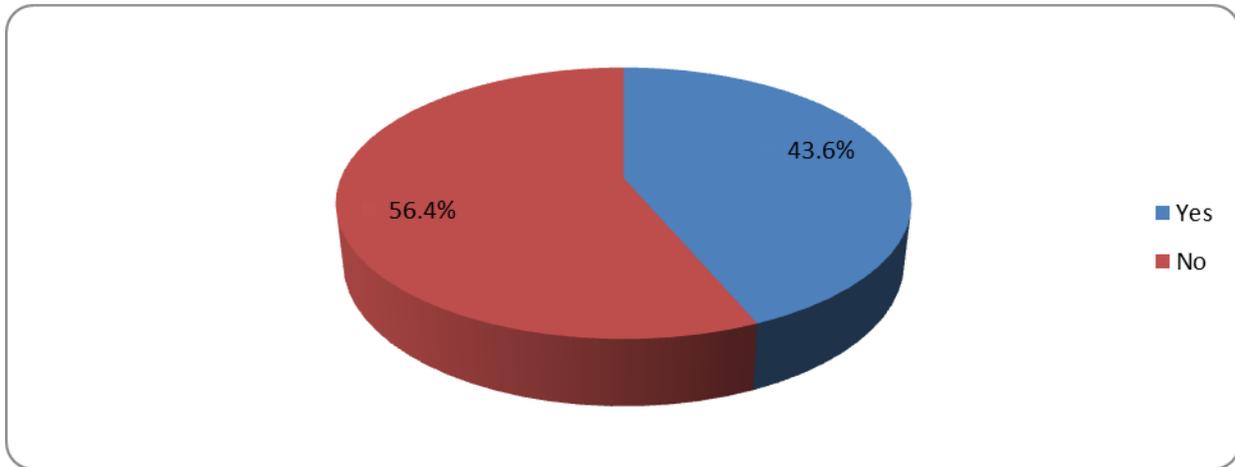
Figure 4 Response by Professional Training

Response by Field of Work

The study further found it necessary to establish the different fields respondents worked in, in order to ascertain diversity in perspectives and for representability purposes for further data reliability. Results as shown in figure 4.4 below reveal that a majority of respondents, 40.1%, specialize in the Procurement department. This was distantly followed by 27.5% belonging to Tender secretariat, then 14.5% in the Stores department while 9.3% of respondents came from the Audit department while the Finance department had the lowest representation at 8.6%. It can be deduced therefore, that the study reached respondents across various areas of specialization in the study area, hence diverse perspectives in responses as informed by activities in the respective departments. Figure 6 presents the findings.
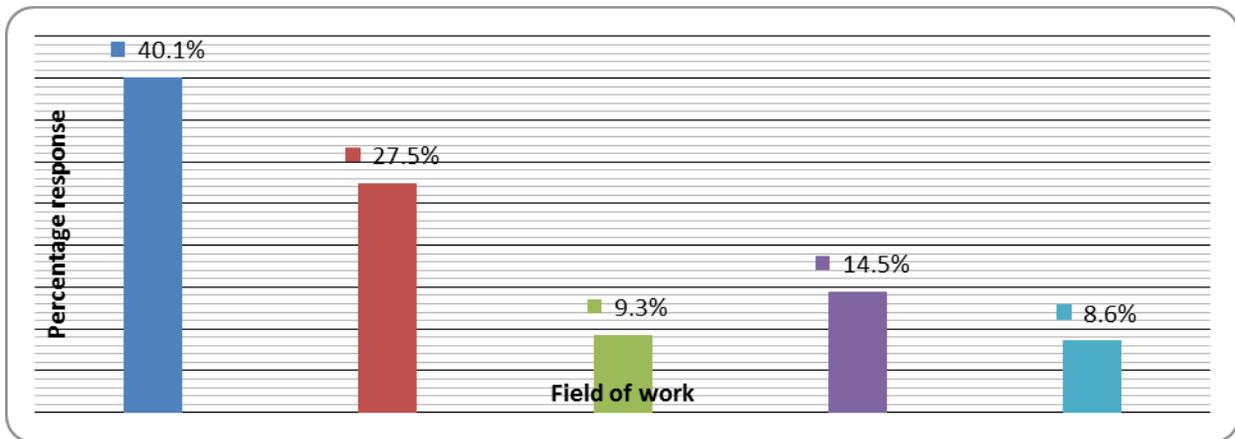

Figure 5. Response by Field of Work

Response by Length of service

With some level of working experience necessary in establishing the study objectives, the study found it necessary to establish the length of service of the respondents, in years, serving at their respective institutions. This would ascertain that responses were already informed by diverse experienced owing to respondents' respective lengths of service. It was established that a majority of respondents, 35.5% have worked in the study area for between 7 and 10 years followed by 28.4% having worked for between 3 and 6 years. This was followed by 24.4% with over 10 years experience in their respective institutions while only 11.7% have worked in their respective stations for below 3 years. The results present a rather fairly skewed distribution across the years representing the length of experience. With a majority of respondents

having worked for at least 7 years, responses can be deemed as being informed by adequate experience in the study area. Figure 5 below presents the findings.
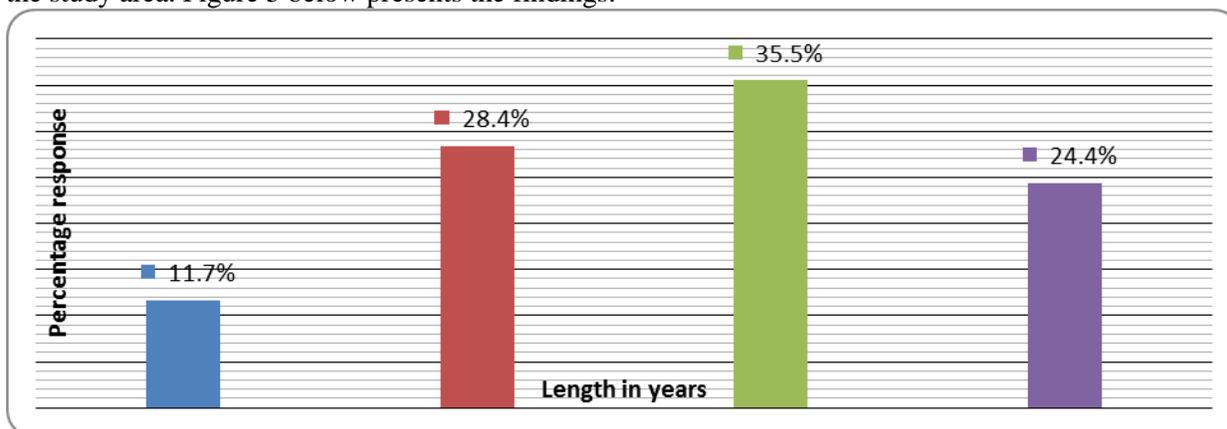

Figure 5 Response by Length of service

Study Variables

The study investigated four conceptualized supplier relations management that affect the performance of hospitals in Nairobi County, namely supplier selection, supplier contracting, supplier development and supplier payment.

Supplier Selection

The study sought to examine the role of supplier selection on the performance of hospitals. To this end, respondents were asked to indicate which of the pertinent statements posed, they considered most important when selecting a supplier for their procurement needs. Results as presented in table 4.4 below and revealed that a majority of respondents (73.9%) consider capacity to meet long term needs as the most important criteria when selecting a supplier for their procurement needs. This was closely followed by 71.9% who considers Financial/business stability and Quality Management Systems, then 65.6% considering either Delivery performance and Management and Organization. Further, 40.6% of respondents consider Supplier's length of experience and Recalls and Complaints systems while 33.3% considers Production facility and equipment. Only 31.3% and 28.1% of respondents were found to consider Compliance and regulatory track record and Change & Deviation management respectively. It can be deduced from the findings that a majority of practitioners in supplier relations management across the institutions surveyed put significant consideration both in the suppliers' organizational and financial stability and product quality thereof. The most common areas of consideration particularly include capacity to meet long term needs, financial/business stability, quality management systems, delivery performance and management and organization. Asked on how the same has impacted supply chain performance in their respective institutions, a majority responded in the affirmative, arguing that supply chain performance in the respective organizations has considerably improved.

This is in agreement with Pearson and Ellram (2008) who note that the importance of supplier appraisal is that it is an essential aspect of both strategic sourcing, supplier management and the achievement of competitive advantage. The findings also agree with Sonmez (2008) who found that companies' aim that proper supplier appraisal would help to reduce product and material costs while maintaining a high level of quality and after-sales services. Therefore, an efficient supplier appraisal process needs to be in place for the successful supply chain management. Hsu et al. (2008) also agree that supplier evaluation is a crucial purchasing activity for many firms as it could improve on the firm's resources and core competencies. Kannan and Tan (2011) also observe that to sustain effective and reliable sources of suppliers, buyer should select their suppliers carefully and evaluate them regularly ensuring that the terms of contract are beneficial to all during the tender awards. Table 2 below presents the findings.

Table 2. Supplier Selection

Statement	F	(%)
Capacity to meet long term needs	71	73.9
Delivery performance	63	65.6
Supplier's length of experience	39	40.6
Financial/business stability	69	71.9
Quality Management Systems	69	71.9
Change & Deviation management	27	28.1
Recalls and Complaints systems	39	40.6
Compliance and regulatory track record	30	31.3
Production facility and equipment	32	33.3
Management and Organization	63	65.6

Supplier Development

The study sought to establish the role of supplier development on the performance of hospitals. To this end, respondents were asked to indicate which of the pertinent measures posed they employed in the organization to ensure supply development for their procurement needs. It was revealed as presented in table 4.5 below that a majority of respondents (56.3%) track delivery performance as a measure employed in the organization to ensure supply development for their procurement needs. This was followed by 46.9% affirming to the use of an approved suppliers list; then 37.5% employing a supplier audit system then 32.3% using product quality review. It was further revealed that 30.2% of respondents employ corrective action system while 28.1% of respondents use a supplier rating system. A further 11.5% of respondents check for continuous improvement program; while 9.4% check for a Six Sigma or equivalent management system and only 7.3% affirmed to checking for a training program. Asked on whether or not the said measures have impacted supply chain performance in their respective organizations, a majority indicated moderate to minimal impact. The findings point to low adoption levels of various supplier development measures across a majority of the institutions surveyed. Consequently, moderate to minimal impacts of the same on supply chain performance have been realized in the respective institutions. It can thus be deduced that a majority of supplier relations management practitioners across the institutions do not adequately concern themselves with the growth and development of their suppliers. This should not be the case as supplier development directly determines the long term capacity to deliver on assignments. The finding is in tandem with Wagner (2010) who asserts that there is strong evidence that organizations today are increasingly implementing SD programs to improve supplier performance and remain competitive. Firms that include their suppliers in the early stages of innovation projects seem to substantially outperform their peers that do not. The finding is also in support of Modi and Mabert (2007 who observe that training in procurement is a vital aspect of giving fighting forces the ability to perform effectively in the field. Purchasing is just as important in the civilian sector. For this reason, leadership training begins with giving people the basic skills that they require to assume responsibility, and to discharge whatever managerial authority may be entrusted to them in a way that, if not spectacular, is at least not manifestly incompetent or catastrophically bad. Table 3 below presents the findings**.**

Table 3 Supplier Development

Statement	F	(%)
Use of a supplier rating system	27	28.1
Use of an approved suppliers list	45	46.9
Use of a supplier audit system	36	37.5
Use of a corrective action system	29	30.2
Check for a training program	7	7.3
Check for product quality review	31	32.3
Tracking delivery performance	54	56.3
Check for continuous improvement program	11	11.5
Check for a Six Sigma or equivalent management system	9	9.4

Supplier Payment

The study sought to determine the role of supplier payment on the performance of hospitals. To this end, respondents were asked to indicate which of the pertinent payment terms the organization consider most important when contracting for supply needs. As indicated by table 4.6 below, a majority of respondents (79.2%) consider prices most important when contracting for supply needs. This was followed by 71.9% of respondents affirming to bargains then 50.0% who consider discounts. It was further revealed that 37.5% of respondents consider Pre-payments/Deposits when contracting for supply needs, while 34.4% consider time of payment, and only 28.1% consider the mode of payment. It was also revealed upon probing that the payment terms have significantly impacted supply chain performance in the respective organizations. From the foregoing, it can be deduced that prices are a key consideration in supply chain performance. This can be attributed to the fact that spending less in procurement leads to minimized logistical expenditure and a higher profit margin.

Accordingly, Sanchez-Rodriguez (2009) argues that for the organization to ensure improvement of performance and competitive advantage, they should engage with suppliers on contract terms that will not burden their cash flow or of which may lead to high amount if capital held in stock. Also, according to Horne and Wachowicz (1998), firms can only benefit from credit if the profitability generated from increased sales exceeds the added costs of receivables. It has also been argued by Chakraborty and Philip (2009) that supplier payment activities should focus on developing supplier future capabilities in product and technology development rather than just on current cost and quality issues. Table 4 below presents the findings.

Table 4 Supplier Payment

Statement	F	(%)
Mode of payment	27	28.1
Time of payment	33	34.4
Pre-payments/Deposits	36	37.5
Discounts	48	50.0
Prices	76	79.2
Bargains	69	71.9

Supplier Contracting

The study sought to ascertain whether supplier contracting has a role on the performance of hospitals. To this end, respondents were asked to indicate which of the pertinent measures the respective organizations consider most important when entering into a contract with a supplier. A majority of respondents (84.4%) were found to consider most the involvement of affected departments when entering into a contract with a supplier; followed by 81.3% considering a documented contract review process; then the presence of an insurance policy plan (78.1%). This was followed by 50.0% considering the provision on vague or conflicting requirements then the presence of a risk management plan as indicated by 45.8% while only 40.6% indicated that they consider requirements review in the procurement process. Asked whether the terms have impacted supply chain performance in their respective organizations, a majority indicated that there has been a moderate to great extent of influence in this regard. As such, it can be deduced that supplier contracting has moderately to greatly impacted supply chain performance in most of the institutions reached. This can be mainly attributed to among others, the involvement of affected departments when entering into a contract with a supplier, the consideration of a documented contract review process, the presence of an insurance policy plan as well as the provision on vague or conflicting requirements.

The finding is in tandem with Abosag et al. (2008) who argue that the need for a defined contracting period is crucial as the performance is considered satisfactory by the Government, the fixed fee is payable at the expiration of the agreed-upon period, upon contractor statement that the level of effort specified in the contract has been expended in performing the contract work. Accordingly, Gyau and Spiller (2010)

offer that buyers must ensure contracts set out a dispute escalation process and specify the method. If the contract is silent on this point each party will treat the other's proposals with suspicion, assuming that there is an agenda or advantage behind a recommendation to, for example, arbitrate, adjudicate, litigate or mediate. There would also be the opportunity for the party receiving the claim to stall the process by refusing to agree. Vogele (2009) is further of the opinion that Commitment to quality by purchasers need to purchase goods and services of the right quality, at the most cost effective price, in the most economic quantities, and ensure that they are available when needed. Failure to meet any of these requirements can seriously affect a department's ability to meet its objectives and outputs and ultimately to deliver services to citizens. Table 5 below presents the findings.

Table 5. Supplier Contracting

Statement	F	(%)
A documented contract review process	78	81.3
Presence of a risk management plan	44	45.8
Presence of an insurance policy plan	75	78.1
Involvement of affected departments	81	84.4
Provision on vague or conflicting requirements	48	50.0
Requirements review in the procurement process	39	40.6

Supply Chain Performance

The study sought to determine supply chain performance among the institutions reached attributed to the adoption of the supplier selection criteria, supplier development measures, supply payment terms and or supplier contract terms. Findings in table 4.8 below reveal improved financial performance across the 5 year period running from the year 2011 to 2015. In procurement costs, a majority of respondents affirmed having grown incrementally from less than 10% in 2011 (41.9%), to growth by 10% in 2013 (34.8%), then by more than 10% in 2014 (39.0%) and 2015 (36.2%). Turnaround time also recorded positive growth with a majority affirming to less than 10% in 2011 (42.3%) and 2012 (37.7%), to 10% in 2013 (36.1%) then more than 10% in 2014 (41.1%) and 2015 (37.5%). A similar trend was recorded in stock-out levels, growing from less than 10% (44.1%) in 2011, to more than 10% in 2013 (36.4%), 2014 (40.4%) and 2015 (37.3%). Supply deficits further recorded positive growth with a majority affirming to less than 10% in 2011 (37.9%) and 2012 (35.9%), to 10% in 2013 (35.9%) and 2014 (35.3%) then by more than 10% in 2015 (36.2%). It can be deduced from the findings that key supply chain areas have considerable improved with the adoption of the supplier selection criteria, supplier development measures, supply payment terms and or supplier contract terms. Turnaround time and Supply deficits have particularly improved by at least 10 percent across most of the institutions pointing to the significance of supplier relations management in the supply chain process.

Accordingly Lucey (1993) argues that the main goal or objective of any business organization is to make and maximize profit while other secondary objectives include going concern, growth, corporate social responsibility, benefits to employees and so on. Charles (1998) adds that though other objectives are also considered very important as listed above, but profit maximization is usually the ultimate because it maximizes the shareholders wealth which is the ultimate aim of investing in a business. People will naturally prefer to invest in a highly profitable business

Table 6 below presents the findings.

Table 6. Supply Chain Performance

Procurement costs	2011	2012	2013	2014	2015
Increased by less than 10%	41.9	37.9	33.8	29.7	29.1
Increased by 10%	33.2	29.6	34.8	31.3	34.7
Increased by more than 10%	24.9	31.5	31.4	39.0	36.2
Turnaround time	**2011**	**2012**	**2013**	**2014**	**2015**
Increased by less than 10%	42.3	37.7	31.6	30.7	29.5
Increased by 10%	31.8	32.9	36.1	28.2	33

Increased by more than 10%	25.9	29.4	32.3	41.1	37.5
Stock-out levels	**2011**	**2012**	**2013**	**2014**	**2015**
Increased by less than 10%	44.1	35.2	33.4	25.7	27.1
Increased by 10%	31.7	32.6	30.2	33.9	35.6
Increased by more than 10%	23.5	32.2	36.4	40.4	37.3
Supply deficits	**2011**	**2012**	**2013**	**2014**	**2015**
Increased by less than 10%	37.9	35.9	31.2	25.7	33.1
Increased by 10%	36.2	31.3	35.9	35.3	30.7
Increased by more than 10%	25.9	32.8	32.9	39	36.2

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Pearson Correlation Analysis
Table 7 below presents the Pearson correlations for the relationships between the various supplier relations management aspect supply chain performance among hospitals in Nairobi County.
Table 7 Pearson Correlation Matrix

	Performance	Supplier selection	Supplier development	Supplier payment	Supplier contracting
Performance	1				
Supplier selection	.798[**]	1			
Supplier development	.436[**]	.650[**]	1		
Supplier payment	.716[**]	.485[**]	.115	1	
Supplier contracting	.708[**]	.724[**]	.300	.692[**]	1

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

From the findings, a positive correlation is seen between the each supplier relations management aspect and Performance. The strongest correlation was obtained between supplier selection and Performance (r = .798) and the weaker relationship found between Supplier development and Performance (r = .436). Supplier payment and Supplier contracting are also strongly and positively correlated with Performance at correlation coefficient of .716 and .708 respectively. All the independent variables were found to have a statistically significant association with the dependent variable at 0.05 level of confidence.

Multiple Regression Analysis
To establish the degree of influence of the various supplier relations management aspects and Performance, regression analyses were conducted among the variables, with the assumption that: variables are normally distributed to avoid distortion of associations and significance tests, which was achieved as outliers were not identified; a linear relationship between the independent and dependent variables for accuracy of estimation, which was achieved as the standardized coefficients were used in interpretation.

The regression model was as follows:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$

Where:

Y= Role of supplier relations management on performance

α = Constant.

X_1 = Supplier Selection; X_2 = Supplier Contracting; X_3= Supplier Development; X_4= Supplier Payment

ϵ = Error

Regression analyses produced the coefficients of determination and Analysis Of Variance (ANOVA). Analysis of variance was done to show whether there is a significant mean difference between dependent

and independent variables. The ANOVA was conducted at 95% confidence level. Table 8 presents the findings.

Table 8. Multiple Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.865[a]	0.748	0.720	1.94285

a. Predictors: (Constant), Supplier selection, Supplier development, Supplier payment, Supplier contracting

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	402.892	4	100.723	3.1983	.000[a]
	Residual	135.888	91	31.4933		
	Total	538.780	95			

a. Predictors: (Constant), Supplier selection, Supplier development, Supplier payment, Supplier contracting

b. Dependent Variable: Performance

NB: F-critical Value= 2.6541

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	8.001	.084		4.878	0.000
	Supplier selection	.735	.067	.421	4.809	.000
	Supplier development	.636	.112	.353	3.011	.003
	Supplier payment	.576	.205	.205	2.742	.005
	Supplier contracting	.510	.398	.199	2.611	.007

a. Dependent Variable: Performance

The result showed a coefficient of determination value (R) of 0.865[a] which depicts that a strong linear dependence between all the supplier relations management aspects and Performance. With an adjusted R-squared of .720, the model shows that Supplier selection, Supplier development, Supplier payment and Supplier contracting collectively explain 72.0% of the variations in the Performance while 28.0% is explained by other factors not included in the model. The P-value of 0.000 implies that the Performance has a significant joint relationship with Supplier selection, Supplier development, Supplier payment and Supplier contracting which is significant at 95% confidence level. This is implies that the regression model is significant and can thus be used to assess the association between the dependent and independent variables. The regression coefficients further reveal positive associations between the Performance and all the predictor variables. The established optimal model is thus:

$Y = 8.001 + 0.735 X1 + 0.636 X2 + 0.576 X3 + 0.510 X4 + 0.084$

Where:

Y = Performance; X1 = Supplier selection; X_2 = Supplier development; X_3 = Supplier payment; X_4 = Supplier contracting

A unit change in Supplier selection would thus lead to a 0.735 increase in Performance ceteris paribus while a unit change in Supplier development would lead to a 0.636 increase in Performance. A unit change in Supplier payment would further lead to a 0.576 change in performance while a unit change in Supplier contracting would lead to a 0.510 change in Performance ceteris paribus. Overall, it can be deduced that Supplier relations management, as indicated by Supplier selection, Supplier development, Supplier payment and Supplier contracting positively and significantly impact supplier chain performance among Hospitals in Nairobi County. Therefore the most significant factor was supplier selection.

CONCLUSION
From the findings presented and discussions thereof, the following conclusions are drawn. It can be deduced from the findings that a majority of practitioners in supplier relations management across the institutions surveyed put significant consideration both in the suppliers' organizational financial stability and product quality. The most common areas of consideration particularly include capacity to meet long term needs, financial/business stability, quality management systems, delivery performance and management and organization.

Findings, point to low adoption levels of various supplier development measures across a majority of the institutions surveyed. Consequently, moderate to minimal impacts of the same on supply chain performance have been realized in the respective institutions. It can thus be deduced that a majority of supplier relations management practitioners across the institutions do not adequately concern themselves with the growth and development of their suppliers. This should not be the case as supplier development directly determines the long term capacity to deliver on assignments.

It can further be deduced that prices are a key consideration in supply chain performance. This can be attributed to the fact that spending less in procurement leads to minimized logistical expenditure and a higher profit margin. The study also deduces that supplier contracting has moderately to greatly impacted supply chain performance in most of the institutions reached. This can be mainly attributed to among others, the involvement of affected departments when entering into a contract with a supplier, the consideration of a documented contract review process, the presence of an insurance policy plan as well as the provision on vague or conflicting requirements.

The study further concludes that key supply chain areas have considerable improved with the adoption of the supplier selection criteria, supplier development measures, supply payment terms and or supplier contract terms. Turnaround time and Supply deficits have particularly improved by at least 10 percent across most of the institutions pointing to the significance of supplier relations management in the supply chain process.

RECOMMENDATIONS
The healthcare organizations should focus on innovating and developing the overall business strategy (for example investigate the applicability of new technologies and resources in SCM) to enhance competitive advantage. The importance of innovative SCM practices eliminates unnecessary cost, accelerating financial returns and streamlining SC processes in the healthcare industry.

In order to ensure cost reduction and improve organizational performance in SCM, organizations and suppliers in the health care sector should try to have a positive relationship and devise approaches to collaboratively solve supply chain challenges in order to improve on efficiency. As a result, the collaborative strategy will provide competitive advantage to both organizations and suppliers in the sector. To improve quality in SCM, hospitals should create good partnerships with all players in the healthcare sector in order to improve supply chain management.

In addition, health care organizations should categorize the SC activities to standardize needed materials to ensure a lean SC which can provide the highest quality of care at the lowest possible cost. It is important to ensure that medical practitioners with experience in supply chain management participate in the material standardization efforts. Hospitals also need to analyze the impact of each supply chain management practice they put in place and the impact on supply chain management. Information gathering and processing should be improved in the supply chain. This concerns both the availability of records of customers and information on provider performance

Dissemination of information in the healthcare sector is needed to ensure better quality and efficiency in supply chain management within the sector. Related to this, breaking down functional barriers between supply chain stores, within health sector as well as between organizations, is a necessary condition for enhanced integration. This will ensure performance in the health care supply chain management.

Problems with communication and integration might well benefit from the nomination of care coordinators in the supply chain. A related issue is the question whether general practitioners have the

necessary skills to operate as such. More generally, in the health care sector, more emphasis on supply chain coordination is required. Policy should also stimulate the provision of more coordinated services. The costing system should be fragmented because it is predominantly medical specialism driven.

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