



DETERMINANTS OF PROCUREMENT PROCESS ENHANCEMENT OF SUPPLIES IN PUBLIC HOSPITALS IN KENYA

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ABSTRACT

The purpose of the study was to establish the determinants of procurement process enhancement of supplies in public hospitals in Nairobi, Kenya. Descriptive research design was used for the study. The target population for the study was 100 supply chain officers. Primary data was collected using questionnaires. The quantitative data was entered into SPSS for analysis. Factor analysis was then applied to reduce the data which was finally used for analysis. Both quantitative and qualitative data analysis techniques were used. It was notable that there exists a relationship between independent variables and dependent variable with a correlation coefficient of 0.850. The coefficient of determination was between zero and one. The data showed that the high R square as 0.725. It showed that the independent variables in the study were able to explain 72.25% variation in the procurement process enhancement while the remaining 27.75% was explained by the variables or other aspects outside the model. This implied that these variables were very significant and they therefore needed to be considered in any effort to boost procurement process enhancement in the public hospitals in Kenya. The study was a milestone for further research in the field of procurement performance in state corporations in Africa and particularly in Kenya. The findings demonstrated the important factors to enhancement of procurement efficiency to include; procurement audit, inventory management, ethical issues and ICT. The current study should therefore be expanded further in future in order to determine the effect of procurement legal framework on procurement process enhancement in the public hospitals in Kenya.

Key Words: *Inventory Management, Procurement Audit, Ethical Practices, Information Communication Technology, Procurement Process, Public Hospitals*

INTRODUCTION

Procurement is a crucial element in the working functions of any state. It refers to the purchasing of goods and services in the right quality, from the right source and the right price all to meet a specific need. Every government has the obligation to provide essential services to its citizens. In Kenya, procurement consumes 45% of the national budget, excluding local government procurement. The close relationship between procurement and development demonstrates that there is need for transparency and accountability in the manner in which procurement is conducted (Masime, 2009).

Procurement process enhancement encompasses the whole process of acquiring property and/or services. It begins when an agency has identified a need and decided on its procurement requirement. Procurement continues through the processes of risk assessment, seeking and evaluating alternative solutions, contract award, delivery of and payment for the property and/or services and, where relevant, the ongoing management of a contract and consideration of options related to the contract. Procurement also extends to the ultimate disposal of property at the end of its useful life (Waters, 2004). Procurement process enhancement is central to the effectiveness of development expenditure. Budgets get translated into services largely through the governments' purchases of goods, services and works. It is estimated that 18.42% of the world's Gross Domestic Product (GDP) is spent through public procurement (Mahmood, 2010).

Procurement process enhancement management is the process of planning, implementing, evaluating, and controlling strategic and operating purchasing decisions for directing all activities of the purchasing function toward opportunities consistent with the firm's capabilities to achieve its long term goals,

Delivering economically sound solutions and Good business practice with an aim of attaining value for money (Eyaa & Oluka, 2011). In order to maximize procurement efficiency, an organization needs to adjust its structure and management processes to the changes in the outside competitive environment and also to facilitate the necessary cooperation between various parts within the company. The issue of structural design becomes especially relevant as purchasing is a part of a company that lies in the meeting point of those environments. As such, it has to meet both external as well as internal communication requirements (Telgen, 2011).

Public procurement in fact is the largest market in sub-Saharan Africa country for up to 70% of the national budget of West Africa Economies. According to the Country Procurement Assessment Report (CPAR, 2002) our lack of capacity to spend had had severe consequences on the Ecowas region. It has contributed to "donor fatigue" and the resultant crunch in foreign exchange and a rapid fall of the local currencies. It is worthy to note that procurement budgets constituted the major part of national budgets in both developed and developing countries. According to the Organization for Economic Co-operation and Development (OECD, 2014) report, procurement constituted over 80% of merchandise worldwide and commercial services export in 1998. In the US for example, procurement constituted 20% of Gross Domestic Product (GDP) and this was higher in other developed economies the world over (OECD, 2014). In Ghana, public procurement accounts for 50%-70% of total Government expenditure, representing 14% of (GDP) and accounting for about 24% of imports, (World Bank, 2003a). It is therefore obvious that an improvement in the procurement practices will enhance wealth and reduce poverty.

In South Africa, Reforms in the public procurement were initiated to promote the principles of good

governance, and the National Treasury introduced a preference system to address socio-economic objectives. The reform processes were due to inconsistency in policy application and the lack of accountability and supportive structures as well as fragmented processes (Kakwezi and Nyeko, 2010). A uniform implementation approach to procurement was required, due to a research study on opportunities for reform processes in the South African government conducted by the Joint Country Assessment Review (CPAR) and the World Bank in 2001. The deficiencies and fragmentations in governance, interpretation and implementation of the Preferential Procurement Policy Framework Act (PPPFA) Act No 5 of 2000, resulted in the introduction of Supply Chain Management (SCM) in the public sector as a policy tool (Ambe, 2012).

The Ministry of Health (MoH) is the major financier and provider of health care services in Kenya. Out of all the health facilities in the country, the MoH controls and runs about 52% while the private sector, the mission organizations and the Ministry of Local government runs the remaining 48%. The public sector controls about 79% of the health centers, 92% of the sub-health centers. Country Procurement Assessment Report (CPAR), prepared by a team of Government officials, World Bank and donor staff, and national consultants, reveals substantial inefficiency in public procurement and concludes that the principle of "value for money" is not achieved. This is true for both governments financed and donor financed procurement. The main findings of the 2012 Country Portfolio Performance Review of World Bank projects also reviewed slow project implementation and disbursement among other factors due to, a large extent of inadequate procurement planning, non-transparent procurement procedures and poor contract management in 60% of the dispensaries. The NGO sector is dominant in health clinics, maternity and nursing homes controlling 94% of the

total while also controlling 86% of the medical centers in the country (CBS, 2014).

Statement of the Problem

The challenge of demand for quality service and upcoming public reforms for most of the public hospitals has realized the need for quality service delivery and efficiency. Procurement audit plays a key role in ensuring that this is achieved; therefore there is a need for public hospitals to ensure that they don't only do adequate audit but audit strategically by implementing the best procurement audit practices (Kilonzo, 2014). In spite of the legal, policy and institutional reforms undertaken so far in the public procurement sector in Kenya, public hospitals still find it hard to effectively implement procurement audit practices (World Bank, 2014). KPMG report (2013) indicated that 90% of public health institutions suffer from a number of malpractices related to procurement audit, ethical practices, inventory management required for quality service delivery.

As indicated in the health sector performance report 2015-2016, hospitals in Kenya are grappling as Kenyans especially the poor suffer from Medical stock-out, Medical wastage or lack of prescribed drug in public hospitals (Gatonye 2017). This is a major challenge since all recommended commodities must be available in all facilities at all times for effective delivery of quality services. Mungu (2013) states that in hospitals, procurement management is set up to ensure an optimal stock level of medicine in general and essential medicine to enable satisfactory service that touches on human life unlike procurement in other sectors. Emergencies pose health threats that are of sudden onset in nature, are beyond the capacity of an individual/community to manage and are life threatening or will lead to irreversible damage to the health of individuals/community if not

addressed. Thus procurement audit is the heart of pharmaceutical system and poor management will lead to wastage of financial resources, shortages of essential medicines, average of others resulting in expiration and deadline in quality health care (USAID, 2012). Despite the threats, in most public hospitals patients are always turned away due to lack of essential drugs and infrastructural facilities. Unfortunately in developing countries, most organizations in the health sector, procurement audit is not accorded central role in overall strategy. This study therefore seeks to establish the determinants of procurement process enhancement of supplies in public Hospitals in Nairobi, Kenya

Objectives of the Study

The purpose of the study was to establish the determinants of procurement process enhancement of supplies in public hospitals in Nairobi, Kenya. The specific objectives were:

- To establish the influence inventory management on procurement process enhancement of supplies in public hospitals in Nairobi, Kenya.
- To determine the influence of procurement audit on procurement process enhancement of supplies in public hospitals in Nairobi, Kenya
- To examine the influence of ethical practices on procurement process enhancement of supplies in public hospitals in Nairobi, Kenya
- To find out the influence information communication and technology on procurement process enhancement of supplies in public hospitals in Nairobi, Kenya.

LITERATURE REVIEW

Theoretical Framework

Agency Theory

This theory would guide the study in establishing the relationship between procurement planning audit and procurement process enhancement in public hospitals in Nairobi City County, Kenya. A theory in this area of procurement can help all stakeholders in public procurement better understand the role they play in providing incentives for utilizing cooperatives in purchasing decisions. This research project will be based on Jensen's and Meckling's,(2006),Agency theory that states that, an agency relationship is a contract under which one or more persons (principals) engages another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent.

When executing the tasks within the principal-agent relationship, the agent must choose actions that have consequences for both the principal and the agent. Since these outcomes can be either negative or positive for each of the actors, the chosen action of the agent affects the welfare of both. The principal-agent relationship is often forged because the agent possesses a greater abundance of the needed skills, abilities, and/or time to perform the desired activities (Cane, 2004). Inevitably, however, there are several problems for the principal in governing the relationship with the agent, the first of which involves choosing an appropriate agent. Consistent with the tenets of agency theory, the view adopted here assumes that agents, purchasing officials, are rational, self-interested utility maximizes (Alchian, 1972). However, it is not assumed that these agents behave selfishly and do so with guile. In other words, slightly contrary to transaction cost economics framework, although it

is assumed that people are opportunistic in the sense that they may shirk in a self-interested manner by trying to minimize effort if it fulfils their needs, it is not assumed that they will willingly misrepresent or lie about that effort (Arrowsmith S, 2010). More to the point, it is merely assumed that the principal and agent do not share the same levels of information, and as such, the agent can opportunistically take advantage of the situation, sometimes to the detriment of the principal. This latter situation is known as moral hazard and is often the result of asymmetric information (Fama, 2003). The theory further suggests that whether or not these entities are of the same government (e.g., agencies within the same government) or represent different governments, the cycle leaves open the potential that government entities may or may not have similar goals. Consequently, the agency relationships modelled here suggest that governments, if not outright competitive, could be at cross-purposes so that there may be times when cooperative public purchasing is not mutually advantageous (Kimalu, 2002). An example is when the U.S. General Services Administration (GSA) will restrict the availability of goods and services from the supply schedule if, when left open to be used by other entities, the use of the schedule results in lower supply or higher prices for the U.S. government. In other words, if the federal government is adversely affected by other entities procuring material through its supply schedule, the available supply schedule will be shrunk by the federal government to capture the savings under the schedule. In summary, any purchasing decision, the multiple layers of principals and agents make organizational responsiveness and maintaining transparency difficult (Jensen, 2006).

Lean Theory

To establish the influence of inventory management on procurement performance in public hospitals, the study will be based on lean theory. Lean thinking

has its origins in Japanese production operations (Lamming, 2008). Toyota practiced the principles of lean management as early as the 1950s forming the basis of strategic inventory management which today is envisaged as an essential core principle of almost any production system in all industries worldwide (Lysons, 2006). Lean production is 'lean' because it uses less of everything compared with mass production: half the human effort in the factory, half the factory space, half the investment in tools, half the engineering hours to develop a new product in half the time and it requires far less half of the needed inventory on site (Eroglu, 2011). The expected results are fewer defects while producing a greater and ever growing variety of products.

Wallian (2007) asserts that there are 5 key principles to lean thinking which include: identifying all steps across the value stream by eliminating non-value adding activities and processes leaving just a stream of value adding activities, making those activities that create the value flow by linking value-adding activities effectively to deliver total value to the customer, only making what is pulled by the customer just-in-time and striving for perfection by continually removing successive layers of waste.

Benchmarking Model

According to Praxion Research group limited (2010), benchmarking is an approach that is used for best practices. These practices include among others strategies, policies, operations, processes, products and organizational structures. Have et al (2009) describe benchmarking as a systematic comparison of organizational processes and performance in order to create new standards and/or improve processes. The four basic types of benchmarking are: Internal- within the organization e.g. between business units, competitive- benchmarking operations and performance with direct

competitors, functional- benchmarking similar processes within the broader range of the industry, and generic- comparing operations between unrelated industries. Benchmarking involves various steps; determining the scope, choosing the benchmark partners, determining measures, units, indicators and data collection methods, collecting data, analyzing the discrepancies, presenting the analysis and discussing implications in terms of new goals, making an action plan and/or procedures, and monitoring progress in ongoing benchmark. The benchmarking process involves various parameters as depicted below (Berenschot, 2009).

Benchmarking is not easy, according to Berenschot (2009), if it is carried out by semi committed managers, without the user of predetermined measures and without proper tools for analysis and presentation, it ends up in dismay, a futile exercise often betrayed as industrial tourism, comparing apples and pears. Berenschot further comments that if well-executed, benchmarking can trigger the need for improvement, highlighting new opportunities and solutions to problems. This model, therefore, underscores the need to have highly competent managers who are committed to the process. Benchmarking model guides organizations on how to use best practices that helps to effectively implement supplier management practices. Through benchmarking with other organizations, public hospitals can be able to employ better supplier appraisal strategies, supplier selection strategies, supplier selection process, supplier performance strategies, supplier relationship management strategies, payment methods and able to acquire after sale services from suppliers. These also may have a significant effect towards strengthening supplier management practices in the organization hence leading to creation of favorable environment for effective procurement performance. The study thus used the benchmarking model to establish the effect of

ethical practices on procurement process enhancement in public hospitals in Kenya.

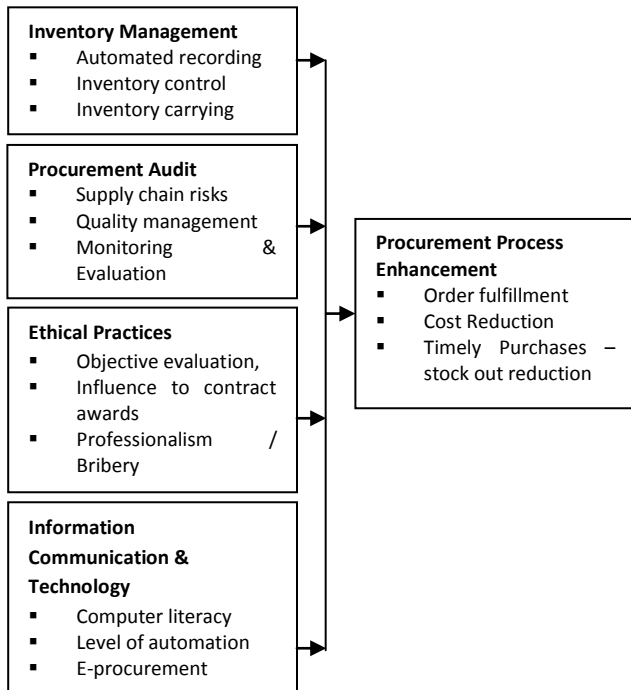
Adaptive Structuration Theory

Based on structuration theory, the study intends to determine the effects of technology on procurement regulatory compliance. Anthony Giddens in his *Constitution of Society* in 1984 addresses issues of human behaviour in the context of technology based on social structure. In other words, the theory looks into the process of human usage of computer systems and at the nature of group-computer interaction (Poole and DeSanctis, 2009). With the main focus of communication using information technology, the theory highlights the concepts of appropriation and structuration. In addition, the AST can be considered as a prime starting point to draw links between individuals and organizational learning. This is due to the core concept in AST that address issues of group interaction with technology as the basis of human activity (DeSanctis and Poole, 2008).

AST is a viable approach in studying how information technology affects procurement performance in oil industry as it examines the change from distinct perspectives. Adaptive Structuration Theory (AST) is relevant in today's procurement management practice due to the expanding influence that advancing technologies have had with regard to the human computer interaction aspect of AST and its implications on socio-biologically inspired structuration in security software application (Ramakrishna 2005). AST theory presents specific advances in information technology that are driving organization changes in the areas of business alignment, IT planning and development that show how AST is being used as a driving force of effective management within organization. The study will use the theory to investigate the effect of the use of information technology on procurement management

According to DeSanctis and Poole (2008), AST is a viable approach for studying the effect of the use of information technology on procurement management. In conclusion AST's appropriation process is a good model to analyze the utilization and penetration of new technologies in organizations.

Conceptual Framework



Independent Variables Dependent variable

Figure 1: Conceptual Framework

Procurement Audit

Procurement audit is a popular concept among accounting and inventory management practitioners. According to Lewis & Media (2014), procurement audit ensures timely and adequate identification and evaluation of inventories. Procurement audits reduce inventory losses and ensure inventory accuracy. It enables an organization evade risks associated with inventory such as; inadequate and inappropriate inventory, unnecessarily high inventory levels, inaccurate and incomplete inventory records, poor inventory

security and obsolete inventory (Johnstone, 2014). Providing health facilities to the public with drug and medical supplies is a very complex process that involves a large variety of actors from both the private and public sectors. Government's health ministries often lack the proper procurement audit due to inadequate management skills required to write technical specifications, supervise competitive bidding, and monitor and evaluate the contract performance. Corruption can occur at any stage of the process and influence decisions on the model of procurement (direct rather than competitive), on the type and volume of procured supplies, and on specifications and selection criteria ultimately compromising access to essential quality medicines (Smith, 2010).

Inventory Management

Inventory management is the application of data collection, demand and forecasting, lean and operational principles to manage the total amount of inventory within the supply chain at any point in time and manage inventory holding costs (Sharafali 2007). The scope of inventory management concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods, and demand forecasting. Balancing these competing requirements leads to optimal inventory levels, which is an on-going process as the business needs shift and react to the wider environment (Riggs & Sharon 2008). Application of effective inventory management methods such as economic order quantity and just in time greatly supports implementation of effective procurement practices.

Ethical Practices

According to Hoy (2005), ethics seems to revolve around concepts such as good and evil, right or wrong, justice and crime. According to Bobo & Magdalena (2007) Ethical issues emerge whenever people interact. The organization for economic cooperation and development, OECD (2007), in a report titled BRIBERY: actors, methods and measure, notes that major part of the world's exports of merchandise and commercial services are linked to public procurement. In OECD countries, public procurement accounts for 15% of GDP; while in many non-OECD countries, this figure is even higher. OECD notes that while this means valuable business opportunity for local stakeholders, read suppliers, it is highly exposed to bribery which undermines competition thus undermining market welfare and exerts a corrosive effect on society by eroding trust in the procurement process, leaders, institutions and business itself.

Evidence of the relationship between ethics and supply chain operations is exemplified in a study by Mugerwa (2010) of supply chain performance of essential medicine in eastern Uganda that asserts the importance of ethical behavior in ensuring supply chain performance. This argument is supported by Carter (2000) who argues that business ethics affect organizations relations with suppliers, in procurement and supply chain operations, who are core in any procurement system Moreover, Wood (2002) believes that ethics is based on two components (i.e. union and connection), both that applies to both upstream and downstream directions of corporate behavior and business operations.

Professional standards of ethical conduct, no matter what the organization, contain typical characteristics, including commitments to: Behave honorably in all aspects of work and professional

activity; Conduct oneself in such a manner as to maintain trust and confidence in the integrity of the acquisition process; Avoid "clever" practices intended to take undue advantage of others or the system; Uphold the organization's standards and policies and all relevant legislation; Avoid conflicts of interest. (Locke & Romis, 2007).

Information Communication and Technology

According to Campbell (2005), technology is the change or integration of means of processing a product or service from what is perceived not be a good version to a better one. It is also change of system or way of operation from inefficient or manual to automatic operations. Private sector procurement activities have evolved from orders, systems to nowadays E-procurement. If you always remember that technology is a tool and that you need to know how to use it, for it to be productive, the money that you spend will never appear to be wasted. The emergence of Internet Technologies has changed the way that governments and organizations operate. The majority of organizational spending consists of purchasing. In order to decrease the total costs spent on purchasing process, internet technologies are used and E-Procurement has become popular to implement in the latest era by both governments and enterprises. Several researchers studying in this area says E-Procurement is named as the "Revolution" due to its potential to reduce the total costs of acquisitions (Campbell, 2005).

Today, Internet technology is relatively cheap and flexible technology which not only has held significant importance for communication in society, but also for the development of the interplay between one procurement units of an organization to another (Monrove, 2002). According to Rusek (2006), the digitalization of information and data, as well as the opportunities offered by the Internet, provides the basis for rationalization and

improved efficiency in administrative processes for private sector procurement companies. The digitalization of the administrative and procurement functions of public sector companies provides a number of advantages, for example, the opportunity to establish new and more efficient work processes and to communicate and cooperate in new ways. Traditional paper-based work processes in procurement can be made more efficient, changed or rendered superfluous when data and data-communication become electronic. Via this path, resources can be transferred from administration to service. Digitalization does not only bring advantages with it. The risk element in procurement changes radically along with technical development, for example, when traditional paper documents disappear and are replaced by digital information that easily can be stolen (copied), changed, deleted, etc., without trace. In future, security surrounding digital systems will be allocated important priority in all fields of society (Rusek, 2006).

Development also requires an important technical redirection and comprehensive further training for users. For procurement officers, development will mean the need for further training, amended procurement methods and new IT-based in procurement tools. In the latest era, the significant usage of E-Procurement systems by governments and enterprises led to significant savings in government procurement costs. It has been shown theoretically and empirically that these savings are mostly caused by increased competitive environment, thus by increased number of bidders in government procurement auctions (Rusek, 2006).

The success of E-Procurement systems mostly depends on the increases in number of bidders (suppliers) that participate to procurement auctions. So, the implementation of E-Procurement has some restrictions namely technology adoption

and usage of E-Procurement systems by suppliers. Some public institutions have not embraced e-procurement. Again, e-procurement has high maintenance costs and required level of professionalism that needs to be investigated in terms of sustainability (Rusek, 2006). Berger and Humphrey (2007) states that, use of technology has not been fully embraced in the practice of undertaking procurement activities in Kenya. Berger and Humphrey observe while there are up to date systems such as reverse auction for undertaking bidding process in procurement, in most private and public sector the process is still being undertaken manually giving room for manipulation and corruption. Manual process also takes longer thus thereby affecting procurement activities. The same view is also recorded by Dale (2010) that states that manufacturing industry performance in Kenya is hampered by lack of investment in technology that helps to reduce lead time, improve efficiency and efficacy, and eliminate quality default and corruption in the processes.

Procurement Process Enhancement

Lardenoije, van Raaij and van Weele (2005) asserted that basing on financial performance and neglecting non-financial performance cannot improve the procurement operations because only partial performance is considered. Realisation of procurement goals is influenced by internal and external forces. Interactions between various elements; professionalism, staffing levels and budget resources, procurement organizational structure, regulations, rules, and guidance, and internal control policies, all need attention and influence procurement performance. Christopher (2005) distinguished features of a responsive organization. Major transformations are; from functions to process, profit to performance, products to customers, inventory to information, and transactions to relationships. Critical measures

of procurement performance need to be continuously monitored. The idea of 'Key Performance Indicators' (KPI) framework suggests that whereas there are many measures of procurement performance to be deployed in an organization, only a small number of critical dimensions contribute more than proportionately to success or failure. A balanced scorecard can provide guidance on critical areas where action may be needed to ensure achievement of goals. Three key outcomes of success are: better, faster, and cheaper. The goals combine customer-based measures of performance in terms of total quality with internal measures of resource and asset utilization. Benchmarking helps identify current best practice and then focuses on how processes could be re-engineered and managed to achieve excellence in critical procurement areas.

Emphasis should be on search for strategies that provide superior value in the eyes of customers seeking greater responsiveness and reliability. Van Weele (2006) maintained that there is a link between procurement process, efficiency, effectiveness and performance. Procurement performance starts from purchasing efficiency and effectiveness in the procurement function in order to change from being reactive to being proactive to attain set performance levels in an entity. Performance provides the basis for an 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 of how to initiate performance improvements.

Procurement performance is not an end in itself but a means to control and monitor the procurement function. For any organization to change its focus and become more competitive, performance is a key driver to improving quality of services. Batenburg and Versendaal (2006) noted that use of

inappropriate means can be a barrier to change and may lead to deterioration of procurement operations. Organizations which do not have performance means in their processes, procedures, and plans experience lower performance and higher customer dissatisfaction and employee turnover. Measuring procurement performance yields benefits to organizations such as cost reduction, enhanced profitability, assured supplies, quality improvements and competitive advantage. Electronic processes have replaced physical and paper-based processes. E-procurement moves tendering, negotiation and purchasing processes to websites. Improvement to a PE's procurement performance can be realized through reduced costs and wider choice available.

Empirical Review

Okonjo (2014) sought to establish the relationship between procurement risk management practices and supply chain performance among mobile phone service providers in Kenya. The study established that most of the mobile phone service providers in Kenya implement procurement risk management practices. It was also clear that there was a very significant relationship between procurement risk management practices and supply chain performance. The study recommended that further research on the same study can be done in other countries to establish whether implementing procurement risk management practices is able to yield the same effect on supply chain performance. Nyangau (2017) focused on evaluating the influence of supply chain risk management strategies on supply chain performance of food and beverage manufacturing firms in Kenya. The supply chain risk management strategies include flexibility, supply chain collaboration, supply base rationalization strategy, risk control and risk avoidance. The study established that supply chain risk management strategies have influence on performance of F& B

manufacturing firms. The study recommends, among others, that the study F& B manufacturing firms must recognize SC flexibility, collaboration and supply base rationalization a score supply chain risk management strategies, and that achieving world-class performance depends on managing supply chains risks.

Hunja (2010) notes that inventory management problems that affect implementation of effective procurement practices in many public institutions in Canada include; lack of application of economic order quantity principle, application of poor stores management practices, long lead time and higher inventory costs. Elliot (2007) found that many government training institutions in India employed ineffective inventory management practices as a result of lack of application of economic order quantity principle, application of poor stores management practices, long lead time and higher inventory costs. Shalle, Guyo, and Amuhaya (2014) conducted a study on role of inventory optimization on e-procurement performance in State Parastatals in Kenya. The findings of the study emphasize that continuous inventory replenishment policy takes a regular order. The time of a replenishment decision is called an order point and the arrival of an order is regeneration point.

Gitari and Kabare (2014) researched on factors affecting access to procurement opportunities in public secondary schools by small and medium enterprises in Kenya's Limuru sub-county and established that Lack of Ethics in procurement process in schools where dishonest person in the tender committee is in a position to demand or to receive personal enrichment or other personal advantages in return for granting a purchasing contract or placing an order, or for preferential treatment from the supplier this hinders access to procurement opportunities by SMEs

A study titled "Improving Work Conditions in Global Supply Chains", by Locke and Romis (2007) acknowledged that public procurement system operates with plenty of interaction between suppliers, buyers and other stakeholders, in this case including political stakeholders. Locke and Romis (2007) note that ethics is the basis on which most of the supply chain related principles, such as fairness, integrity, and transparency, are based. Professional standards of ethical conduct, no matter what the organization, contain typical characteristics, including commitments to: Behave honorably in all aspects of work and professional activity; Conduct oneself in such a manner as to maintain trust and confidence in the integrity of the acquisition process; Avoid "clever" practices intended to take undue advantage of others or the system; Uphold the organization's standards and policies and all relevant legislation; Avoid conflicts of interest (Locke & Romis, 2007). According to a report by Transparency International (TI) on Kenya's corruption and anticorruption efforts prepared by Maira (2012), notes that The Kenyan procurement system is considered among the most corrupt functions of the government. This according to Maira (2012) is evidenced by the World Bank and IFC (2007) enterprise survey which indicated that 71 % of the companies surveyed expect to give gifts to secure a government contract, with the value of the gift representing 8% of the contract amount. According to this report, corruption remains pervasive in procurement processes, with widespread practice of favoritism towards well-connected firms and individuals when deciding upon contracts and policies.

A study by Wanyama (2010) revealed that public sector lose huge amounts of funds annually as result of implementation of ineffective procurement practices which are not in tandem with the public and disposal regulations. Mugo (2011) notes that low level of compliance with

procurement regulations, lack of transparency and accountability of procurement funds lowers the level of effectiveness in procurement practices in the public sector. Mugo (2011) established that the major factors that determine the extent to which effective procurement practices are employed in public sector in Kenya include; the level of compliance with procurement regulations, minimization of procurement expenditure, transparency and accountability of procurement funds and quality of procured goods and services.

Velnampy (2010) conducted a study on evaluation of factors influencing effective procurement management system of public sector organizations. The study found that low level of compliance with procurement regulations and lack of high degree of transparency and accountability hinder execution of effective procurement practices. A study by Sanjeeve (2009) found that implementation of ICT based procurement methods in public sector in Africa is hindered by lack of e-procurement methods, lack of automated procurement systems, lack of supportive ICT infrastructure and absence of ICT skills amongst procurement staff. A study by Tanzi (2009) found that in Canada, innovation in technology has played a major role in enhancing many organizations to adopt effective procurement practices. A study by George (2008) found that in Kenya's public sector fail to succeed in embracing effective procurement practices due to lack of effective waste recycling technology and effective technology.

RESEARCH METHODOLOGY

The study was a descriptive survey designed to establish the determinants of procurement process enhancement in public hospitals in Kenya. The target population of this study comprised employees from eight (8) public hospitals in Nairobi County namely; KNH, Mbagathi hospital, Nairobi

Hospice, Armed Forces Memorial Hospital, National Spinal Injury Hospital, Mathari Mental hospital, Mama Lucy Kibaki Hospital and Pumwani Maternity Hospital. Statistical model was developed from the conceptual framework as follows: the dependent variable (DV) which in the present study is Procurement Process Enhancement took the variable [Y], and the coefficients of the independent variables (IV) denoted by X_1, X_2, \dots, X_4 were used to show the relationship of the independent variables and the dependent variable. Statistically, analysis was done using the MRA model: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$:

Where Y= Procurement Process Enhancement;

β_0 = Intercept; β_1, \dots, β_4 = regression coefficients of independent variables;

X_1, \dots, X_4 = Independent Variables (Procurement Audit, Inventory management, ICT and Ethical Practices);

ϵ = Error term

RESEARCH FINDINGS

Procurement Process Enhancement

The study sought to examine the determinants of procurement process enhancement with reference to public hospitals in Nairobi City County, Kenya, attributed to the influence of procurement audit, inventory management, ethical practices and ICT. The study was particularly interested in three key indicators, namely order fulfillment, cost reduction and timely purchases-stock out reduction, with all the three studied over a 5 year period, running from 2012 to 2016.. Findings in Table 1 revealed improved procurement process enhancement in public hospitals across the 5 year period running from the year 2013 to 2017. Order fulfillment

recorded positive improvement with a majority affirming to less than 10% in 2012 (38%) and 2013(36%), to 10% in 2014 (36%) then more than 10% in 2015 (40%) and 2016 (36%). A similar trend was recorded in cost reduction, growing from less than 10% (40%) in 2012, to more than 10% in 2013 (35%), 2014 (36%) and 2016 (38%). Timely Purchases-stock out reduction further recorded positive improvement with a majority affirming to less than 10% in 2012 (38%) and 2013 (36%), to 10% in 2014 (34%) and 2015(40%) then by more than 10% in 2016 (36%). It was deduced from the

findings that key procurement process enhancement indicators had considerably improved as influenced by among other procurement process enhancement attributes, the influence of procurement audit, inventory management, ethical practices and ICT. Order fulfillment and Timely Purchases-stock out reduction have particularly improved by at least 10 percent across most of the institutions pointing to the significance of procurement audit, inventory management, ethical practices and ICT in the supply chain process.

Table 1: Procurement Process Enhancement of Supplies

Order Fulfillment	2012	2013	2014	2015	2016
Increased by less than 10%	38	36	34	32	30
Increased by 10%	28	34	36	28	34
Increased by more than 10%	34	30	30	40	36
Cost Reduction	2012	2013	2014	2015	2016
Increased by less than 10%	40	35	32	26	26
Increased by 10%	36	34	32	34	36
Increased by more than 10%	24	32	36	40	38
Timely Purchases-Stock out Reduction	2012	2013	2014	2015	2016
Increased by less than 10%	38	34	32	26	32
Increased by 10%	36	30	34	34	32
Increased by more than 10%	26	36	34	40	36

Procurement Audit

The study sought to assess the influence of procurement audit on procurement process enhancement in the public hospitals in Nairobi City County, Kenya. This section presented findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5= Strongly Agree). Table 2 presented the findings. The scores of ‘strongly disagree’ and ‘disagree’ had been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of ‘Neutral’ has been taken to represent a statement equivalent to a mean score of 2.6 to 3.4. The score of ‘agree’ and ‘strongly agree’ have been taken to

represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 2 presents the findings. As tabulated, a majority of respondents were found to highly agree that the supply chain risks assessment reduces supply disruptions in the hospital (3.112); supply chain risks reduces unanticipated price fluctuations through volatility of exchange rates (3.103); supply chain risks assessment reduces supplier quality problems of the hospital supplies (3.009); Monitoring and evaluation enhances the efficiency and effectiveness in the procurement process (3.765); the organization uses IT in our Procurement process (3.198). This was in tandem with Bedey (2008) who asserts that overall, enterprises employing organized procurement audit in the

procedures, resources and systems to consistently employ and align all procurement strategies in a consistent and integrated method outperformed peers in cost savings, expenditure under management, compliance, supplier integration, and greater contribution to enterprise value. Simms

(2008) adds procurement audit in most of the public entities lack clear accountability on how the resources provided impact on their performance therefore going against the fundamental principles of public procurement.

Table 2: Influence of Procurement Audit on Procurement Process Enhancement of Supplies

Procurement Audit	Mean	Std. Dev
The supply chain risks assessment reduces supply disruptions in the hospital	3.112	.568
Supply chain risks reduces unanticipated price fluctuations through volatility of exchange rates	3.103	.613
Supply chain risks assessment reduces supplier quality problems of the hospital supplies	3.009	.432
Monitoring and evaluation enhance efficiency and effectiveness for the supplies in the management of the supplies	2.128	.450

Inventory Management

The study sought to assess the influence of inventory management on procurement process enhancement in the public hospitals in Nairobi City County, Kenya. This section presented findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5= Strongly Agree). Table 3 presented the findings. The scores of 'strongly disagree' and 'disagree' had been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Neutral' had been taken to represent a statement equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 3 presents the findings. As tabulated, a majority of respondents were found to highly agree that the organization had ensured that there was use inventory management system to improve cost reduction (2.908); The organization had automated

recording systems to enhance timely deliveries to improve customer satisfaction (3.118); The organization had the cycle counting system that could enhance cost reduction and facilitate timely deliveries to the customers (2.687); The organization had ensured that there was Inventory control system to improve timely deliveries (2.769); The organization had adopted the Use of E.O.G model to enhance timely deliveries and improve customer satisfaction (2.568). There was replenishment level/ reorder level management in the organization at all times to improve cost reduction (3.210); The organization had ensured that there was a continuous periodic review to improve cost reduction, enhance timely deliveries and improve customer satisfaction (3.225). This implied that on average the organization had implemented inventory control management effectively to enhance supply chain performance. This finding supported Holmstrom et al., (2012) that inventory management can have a major impact upon the procurement efficiency of an

organization. If inventory levels are too low then there is the risk of stock outs, that is the inability to meet an order. Managing stocks involves balancing two sets of costs: Inventory carrying costs and order processing costs. Inventory management to a computer based system designed to support operations, management and decision functions of an organizations production system. Inventory management systems in supply management

enables manufacturing of quality products in line with customer requirements; besides encouraging close and open communication between the organization and its customers as well as the organization and its suppliers. Inventory management systems enable organizations to effectively compete in a dynamic and turbulent environment by having an information edge above competitors (Holmstrom *et al.*, 2012).

Table 3: Inventory Management on Procurement Process Efficiency

Inventory Management	Mean	Std. Dev
The organization has ensured that there is use of inventory management system to improve cost reduction	2.908	.432
The organization has automated recording systems to enhance timely deliveries to improve customer satisfaction	3.118	.768
The organization has the cycle counting system that can enhance cost reduction and facilitate timely deliveries to the customers	2.687	.754
The organization has ensured that there is Inventory control system to improve timely deliveries	2.769	.532
The organization has adopted the Use of E.O.G model to enhance timely deliveries and improve customer satisfaction	2.568	.321
There is replenishment level/ reorder level management in the organization at all times to improve cost reduction	3.210	.876
The organization has ensured that there is a continuous periodic review to improve cost reduction, enhance timely deliveries and improve customer satisfaction	3.225	.536

Ethical Issues

The study sought to assess the influence of inventory management on procurement process enhancement in the public hospitals in Nairobi City County, Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5= Strongly Agree). Table 4 presented the findings. The scores of ‘strongly disagree’ and ‘disagree’ had been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of ‘Neutral’ had been taken to represent a statement

equivalent to a mean score of 2.6 to 3.4. The score of ‘agree’ and ‘strongly agree’ had been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 3 presented the findings. As indicated, a majority of respondents affirmed that The mainstream suppliers bid for reserved tenders (3.2331); There was influence to award tenders to mainstream suppliers (3.8213); Bribery and gifts was a factor affecting procurement efficiency (3.4432); Some bidders engaged in procurement malpractice (3.6424); The mainstream suppliers bid for reserved tenders (3.5001). There was influence to award tenders to mainstream suppliers (3.5421). It

was deduced from the foregoing that another major hindrance to procurement process in public hospitals as unethical conducts among bidders, bribery and gifts; as well as mainstream suppliers bidding for reserved tenders. Such malpractices imparted negative perception of bidding processes and deter most bidders thus affecting procurement efficiency. This argument is supported by Carter

(2000) who argues that business ethics affect organizations relations with suppliers, in procurement and supply chain operations, who are core in any procurement system. Accordingly, OECD (2007), in a report titled BRIBERY: actors, methods and measure, notes that major part of the world's exports of merchandise and commercial services are linked to public procurement efficiency.

Table 4: Ethical Issues on Procurement Process Enhancement

Statement	Mean	Standard Deviation
The mainstream suppliers bid for reserved tenders	3.331	.542
There is influence to award tenders to mainstream suppliers	3.213	.017
Bribery and gifts is a factor affecting procurement efficiency	3.432	.634
Some bidders engage in procurement malpractice	3.424	.941
The mainstream suppliers bid for reserved tenders	3.513	.217
There is influence to award tenders to mainstream suppliers	3.001	.612

Information Communication and Technology

This section presented findings to survey questions asked with a view to establish the influence of ICT on procurement process enhancement of supplies in public hospitals. The findings are presented in the Table 5. The data was collected from the different indicators of the ICT variable which was ordinally categorical. The data was therefore presented in frequency tables with the median being used as the appropriate measure of central tendency. Information Communication technology had the first indicator that required the institutions to state the percentage of employees in the firm who were computer literate, 53.30% of the respondents had 0-20% , 2.90% had 20-30% , 14.30% had 30-40% had 8.70%, 40-50% and 5.10% had over 50% The modal class is of the respondents who had between 0 to 20% literacy. The mode was found to be 1 which implied that on average the respondents 0 to 20% of employees in the firm that were computer literacy.

When the respondents were asked in the second question what the firms' level of automation was, 2.90% of the respondents had 0-20%, 2.90% had 20-30%, 5.70% had 30-40%, 31.10% had 40-50% and 45.60% had over 50%. The mode was found to be 4 which implies that on average the firms have over 40%-50% level of automation. The next indicator asked the respondents what the level of procurement systems usage was in the institution, 0% of the respondents had 0-20%, 2.90% had 20-30%, 5.70% had 30-40% , 37% had 40-50%, 45.70% had over 50%. The mode class is of the respondents who had over 50% level of procurement usage. The mode was found to be 4 which imply that on average the firms had over 50% level of procurement systems usage.

When the respondents were asked what the level of ICT infrastructure was, 2.90% of the respondents had 0-20%, 2.90% had 20-30% 5.70% had 30-40% , 37.10% had 40%-50%, 51% had over 50% " The

modal class is of the respondents who had over 50% level. The mode was found to be 5 which implied that on average the firms had over 50% level of ICT infrastructure. The last indicator for the variable ICT inquired what the firms level of embracement of E-procurement was 0% of the respondents 0-20%, 3% had 20-30% , 3% had 30-40% , 31% had 40-50% and 60% had over 50% ” The modal class was of the respondents who had over 50%. The median was found to be 5 which imply that on average the firms have over 50% level of embracement of E-procurement. Information Communication Technology (IT) is a technology that involves use of computers, software and internet connections infrastructure for supporting information processing and communication functions (Crompton 2007). The use of information technology in public sector had not been effectively implemented since most of

the procurement functions are subjected to manual procedures that are slow, inaccurate and infective. This has negative impact on procurement procedures since the public sector organizations cannot effectively monitor and coordinate procurement procedures of all road construction projects, there is lack of computerized procurement procedures and this subjects much of procurement functions to manual operations which are slow and ineffective. The use of computerized procurement systems demonstrated efficient use of information technology but in cases where the organization subjects all it’s procurement functions to manual procedures, the benefits of information technology are not experienced and a high level of inefficiency is experienced during execution of procurement procedures.

Table 5: Influence of ICT on Procurement Process Enhancement

	0%-20%	20%-30%	30%-40%	40%-50%	Over 50%	Mode
What percentage of employees in the firm is computer literate?	53.30%	2.90%	14.30%	8.70%	5.10%	5
What is the firm’s level of automation?	2.90%	2.90%	5.70%	31.70%	48.60%	4
What is the level of procurement systems usage?	0%	2.90%	5.70%	37.10%	45.70%	4
What is the level of ICT infrastructure?	2.90%	2.90%	5.70%	37.10%	48.60%	5
What is the firm’s level of embracement of E-procurement?	0%	2.90%	2.90%	31.40%	60%	5

Multiple Regression Analysis

According to the model summary Table 6, the

coefficient of determination (R^2) is used to measure how far the regression model’s ability to explain the variation of the independent variabies. It was

notable that there exists a relationship between independent variables and dependent variable with a correlation coefficient of 0.850. The coefficient of determination is between zero and one. The data showed that the high R square was 0.725. It showed that the independent variables in the study were able to explain 72.25% variation in the

procurement process enhancement while the remaining 27.75% was explained by the variables or other aspects outside the model. This implied that these variables were very significant and they therefore needed to be considered in any effort to boost procurement process enhancement in the public hospitals in Kenya.

Table 6: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
	.850	.725	.690	.010

Analysis of Variance (ANOVA)

The study further used Analysis of Variance (ANOVA) in order to test the significance of the overall regression model. Green and Salkind (2013) posit that Analysis of Variance helps in determining the significance of relationship between the research variables. The results of Analysis of Variance (ANOVA) revealed that the significance of the F-test was done to test the effect of independent variables on the dependent variable simultaneously. The F-statistic test basically showed whether all the independent variables

included in the model jointly influenced on the dependent variable. Based on the study results of the ANOVA Test or F-test in Table 7, obtained F-count (calculated) value was 59.454 greater the F-critical value (Table) (14.765) with significance of 0.002. Since the significance level of 0.002 < 0.05 we concluded that the set of independent variables affect the procurement efficiency (Y-dependent variable) and this shows that the overall model was significant. Thus the four variables play a significant role in the procurement efficiency in government parastatals in Kenya.

Table 7: ANOVA

Model	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	20.908	4	5.227	69.508	.000 ^a
Residual	4.890	65	.0752		
Total	19.017	69			

NB: F-critical Value = 14.675;

The results of multiple regression analysis obtained regression coefficients t value and significance level as indicated in Table 8. The study conducted a multiple regression analysis so as to determine the

relationship between the dependent variable and independent variables. The general form of the equation was to predict procurement efficiency from financial capacity, inventory management, ethical issues and supplier management is : $(Y = \beta_0 +$

$\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$) becomes: $Y = 15.689 + 0.800X_1 + 0.789X_2 + 0.740X_3 + 0.732X_4 + 0.054$. This indicated that Procurement Process Enhancement = $15.689 + 0.800 * \text{Procurement Audit} + 0.789 * \text{Inventory Management} + 0.740 * \text{Ethical Issues} + 0.732 * \text{ICT} + 0.054$. From the study findings on the regression equation in Table 8 established, taking all factors into account (independent variables) constant at zero procurement process enhancement would be 15.689. The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in procurement audit would lead to a 0.800 increase in procurement process enhancement; a unit increase in inventory management would lead to a

0.789 increase in procurement process enhancement, a unit increase in ethical issues would lead to 0.740 increase in procurement process enhancement and a unit increase in ICT would lead to 0.732 increase in procurement process enhancement. This infers that procurement audit contributed most to procurement process enhancement. Based at 5% level of significance, procurement audit had a .000 level of significance; inventory management showed a .001 level of significance, ethical issues show a .005 level of significance and ICT show a .008 level of significance hence the most significant factor was procurement audit.

Table 8: Regression Coefficient Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	β		
(Constant)	15.689	.069		5.890	.000
Procurement Audit	.800	.075	.665	4.456	.000
Inventory Management	.789	.096	.654	4.320	.001
Ethical Issues	.740	.103	.455	4.219	.005
ICT	.732	.202	.332	3.562	.008

CONCLUSION AND RECOMMENDATIONS

The supply chain risks assessment reduced supply disruptions in the hospital. The supply chain risks reduce unanticipated price fluctuations through volatility of exchange rates. The supply chain risks assessment reduces supplier quality problems of the hospital supplies. Monitoring and evaluation enhances the efficiency and effectiveness in the procurement process. The organization uses IT in monitoring and evaluation in the Procurement process.

On the influence of inventory management on procurement efficiency in the organization, a

majority of respondents were to a moderate extent that the organization had ensured that there was use inventory management system, the organization had automated recording, the firm had the cycle counting, the organization had ensured that there was Inventory control; the organization had adopted the Use of E.O.G. There was replenishment level/ reorder level management in the firm and ensured that there was a continuous periodic review. This implied that on average the organization has implemented inventory control management effectively to enhance procurement process enhancement in the organizations.

On the influence of ethical issues on procurement process enhancement in public hospitals in Kenya. The study found out that majority of respondents can be said to have stated to a moderate extent with most statements posed as regards influence of ethical issues on procurement process enhancement in public hospitals in Kenya. Further, the study established that majority particularly stated that the mainstream suppliers bid for reserved tenders. There is influence to award tenders to mainstream suppliers. Bribery and gifts is a factor affecting procurement process enhancement in public hospitals and some bidders engage in procurement malpractice. The mainstream suppliers bid for reserved tenders and influence to award tenders to mainstream suppliers.

On Information Communication and Technology, the study established that a majority of respondents were found to highly agree that there to enhance procurement process in the public hospitals there is need to ensure that the procurement staff is computer literate to comply with the rules and regulations. The level of automation should be adequate and level of procurement systems usage should be adequate to enhance procured quality goods. The ICT should be adequately observed in the organization procurement process. Most notably, there is need to improve the IT infrastructure to enhance procurement process in the public hospitals.

On procurement process enhancement, attributed to the influence of procurement audit, inventory management, ethical issues and ICT. Reduction of costs recorded positive improvement, timely purchases-stock out reduction further recorded positive improvement. From inferential statistics, a positive correlation is seen between each determinant variable and procurement efficiency. The strongest correlation was established between

financial capacity and procurement efficiency. All the independent variables were found to have a statistically significant association with the dependent variable at ninety-five level of confidence. Analysis of variance was further done and it was established that there was a significant mean. This is since the p values of their coefficients were all less than 0.05.

Conclusions of the Study

Based on the study findings, the study concluded that procurement process enhancement in public hospitals in Kenya is affected by procurement audit, inventory management, ethical issues and ICT as the major factors that mostly influence procurement process enhancement in public hospitals in Kenya.

The study concluded that procurement audit was the first important factor that affects procurement process enhancement in public hospitals in Kenya. The regression coefficients of the study show that procurement audit has a significant influence on procurement process enhancement in public hospitals in Kenya. This implies that increasing levels of procurement audit would increase the levels of procurement process enhancement in public hospitals in Kenya. This shows that procurement audit has a strong positive influence on procurement process enhancement in public hospitals in Kenya.

The study concluded that inventory management is the second important factor that affects procurement process enhancement in public hospitals in Kenya. The regression coefficients of the study show that procurement audit has a significant influence on procurement process enhancement in public hospitals in Kenya. This implies that increasing levels of inventory management would increase the levels of procurement process enhancement in public hospitals in Kenya. This

shows that inventory management has a strong positive influence on procurement process enhancement in public hospitals in Kenya

Further, the study concluded that ethical issues is the third important factor that affects procurement process enhancement in public hospitals in Kenya. The regression coefficients of the study show that ethical issues has a significant influence on procurement process enhancement in public hospitals in Kenya. This implies that increasing levels of ethical issues would increase the levels of procurement process enhancement in public hospitals in Kenya. This shows that ethical issues has a strong positive influence on procurement process enhancement in public hospitals in Kenya

Finally, the study concludes that ICT was the fourth important factor that affects procurement process enhancement in public hospitals in Kenya. The regression coefficients of the study show that ICT has a significant influence on procurement process enhancement in public hospitals in Kenya. This implies that increasing levels of ethical issues would increase the levels of procurement process enhancement in public hospitals in Kenya. This shows that ICT has a strong positive influence on procurement process enhancement in public hospitals in Kenya

Recommendations of the Study

The study recommends for the supply chain risks assessment to reduce supply disruptions in the hospital. The supply chain risks reduce unanticipated price fluctuations through volatility of exchange rates. The supply chain risks assessment reduces supplier quality problems of the hospital supplies. There is need to have a continuous monitoring and evaluation enhances the efficiency and effectiveness in the procurement process. There is need to adopt technology in monitoring and evaluation to enhance procurement process.

The study recommends for the organization to ensure that there is use inventory management system and automated recording, cycle counting Inventory control; use of E.O.G. There is need to have replenishment level/ reorder level management in the firm and ensure that there is a continuous periodic review. This would enhance procurement process in the public hospitals in Kenya.

The study recommends for enhancement of proper ethical issues on procurement process enhancement in the public hospitals in Kenya. There is need to ensure that the mainstream suppliers bid for reserved tenders. The use of bribery and gifts should be discouraged since it affects procurement process enhancement in the public hospitals as some bidders like to engage in procurement malpractice.

To enhance procurement regulatory compliance in state corporations there is need to ensure that the procurement staff is computer literate to comply with the rules and regulations. The level of automation should be adequate and level of procurement systems usage should be adequate to enhance procured quality goods. The ICT should be adequately observed in the organization procurement process. Most notably, there is need to improve the IT infrastructure to enhance in the procurement process, funding, timely delivery of goods and services as well as qualified manpower and training.

Areas for Further Research

The study is a milestone for further research in the field of procurement performance in public hospitals in Africa and particularly in Kenya. The findings demonstrated the important factors to enhancement of procurement process to include; procurement audit, inventory management, ethical issues and ICT. The current study should therefore be expanded further in future in order to determine

the effect of procurement legal framework on procurement efficiency in public hospitals Existing literature indicates that as a future avenue of research, there is need to undertake similar research in other government institutions and

public sector organizations in Kenya and other countries in order to establish whether the explored factors can be generalized to affect procurement process enhancement in the public sector.

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