

# **ROLE OF QUALITY CONTROL SYSTEM ON PROCUREMENT PERFORMANCE IN KENYAN STATE CORPORATION: A CASE OF KENYA NATIONAL HIGHWAYS AUTHORITY**

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## **ABSTRACT**

The general purpose of this study was to establish the role of quality control system on procurement performance in Kenyan state corporations: A case of KeNHA. Quality control system plays a pivotal role in enhancing procurement performance of state corporations in Kenya. In the past procurement performance in public institution were marred by inefficiency due unstructured system and lack of institutional framework. Therefore, the study sought to establish role of quality control system on procurement performance of State Corporations in Kenya. The objectives of the study included assessing how quality control planning, policies, procedures and reporting influences procurement performance in State Corporations. Theoretical review of theories related to the study also formed the basis for the study, the empirical literature and conceptual framework put the study into perspective. The study highlighted the research gaps which has not been exhaustively covered by previous researchers and consequently prompting the researcher to undertake the study. Additionally the study contained the research design explicitly detailing how the research objectives were met in a target population of 50 respondents stratified into four classes: departmental heads, all managers, senior procurement officers and head of procurement function. The researcher used primary data collection

method, which included the use of questionnaires containing closed as well as open questions to facilitate gathering of information. The data gather was processed and consequently reliability of the instruments was tested alongside the pilot study. The data was analyzed using SPSS (version 22) and presented using tables and charts. The study found that quality control system affects the procurement performance of KeNHA. Equally, quality control planning, quality control policies, quality control procedures and quality control reporting affects the procurement performance of KeNHA. The study recommends that for KeNHA must validate procurement functions to realize full benefits. By means such as planning, controlling and determining appropriate methods for monitoring, measurement and analysis, the process of procurement and management of material resources will have an important contribution to improvement of efficiency and effectiveness of the organization. The management of KeNHA should use bottom up approach of management for effective implementation of quality control system. The implementation of QC system should support the Corporation's business strategy.

**Key Words:** *quality control system, procurement, performance, Kenyan State Corporation, Kenya National Highways Authority*

## **INTRODUCTION**

The concept of quality control system emerged out of the industrial revolution. Previously goods and services have been made from start to finish by the same person or team of people, with

handcrafting and treating the product to meet quality control criteria. Mass production brought huge teams of people together to work on specific stages of supply chain where one person would not necessarily complete a product from start to finish. Birlad, (2003) argued that institutions need to established quality control department with effective system to oversee implementation of quality control aspects in any given production activity. The introduction of ISO certification like ISO 9001:2008 series describes standards for quality control system addressing the principles and processes surrounding the design, development and delivery of a general product or service.

Organizations can participate in a continuing certification process to this series to demonstrate their compliance with the standards which include a requirement for continual improvement of the quality management system and specifically ISO 9000:2005; provides information, the fundamentals, and vocabulary used in quality system. Procurement performance is achieved when goods or services are procured at the best possible cost to meet the needs of the purchaser in terms of quality, quantity, time and location. Shah, 2009 postulated that State Corporations and public bodies often define processes intended to promote fair and open competition for their business while minimizing exposure to defects, therefore it's through proper quality control system that procurement efficiency is achieved.

The study is aims at establishing the role of quality control system on procurement performance of State Corporations in Kenya. Heads of departments in an organization have the responsibility of establishing and enforcing quality control system that will guide the organization improving procurement performance. Arora, (2009) viewed quality control system as specific operational techniques and activities aimed at monitoring a process and eliminating causes of unsatisfactory performance in supply chain at a relevant stage of the quality loops in order to result into economic effectiveness or procurement performance. He further pointed out that for organization to improve in procurement performance techniques or measures training of staff, benchmarking, ICT application tools and quality manuals and inspection must be embraced. He viewed performance monitoring and measurement as a continuous quality improvement technique for a product, service or process.

Bailey et al (2008) echoed Lysons et. al. (2006) perspective of quality and quality control system but added the concept of concurrent engineering and defined it as getting the right people together at the right time to identify and resolve design problems. Its designed for assembling availability, cost reduction, customer satisfaction, operability, performance, quality, risk, satisfaction, schedule, social acceptability and all other attributes of a product, the idea being that all the concerned parties work together at the same time rather in sequence thus achieving a clear understanding of each of their needs and contribution thus leading to a much shorter elapsed time between concept of a need and its fulfillment. Therefore any organization pursuing this approach will have to actively involve procurement staff and in many cases that of vendors.

## **Global Perspective of Quality Control System**

The ISO 9000 series of standards are the most popular international standards for quality management that some many countries associate with (Zeithaml, 2000). In African continent, in the past twenty years quality gap has been greatly reduced between competitive products and services. As a result, countries amongst many others have put up mechanism to raise their own standards of quality in order to meet international standards and customer demands. Curristine Lonti and Joumard (2007) noted that improving performance involves setting of objectives and reforms. The reforms provide a mechanism that enables politicians to clarify objectives. It has proved a useful tool for setting priorities over the short and medium term which clarify what results are expected from the public sector.

Most OECD member countries now submit their performance objectives to parliament and the public, either in government wide performance plans or in ministerial or agency-level plans (Arora, 2009). This is well exemplified, in Australia, Canada, the United Kingdom and the United States; all individual ministries must submit their strategic plans, including medium-term performance goals. These initiatives, if successfully implemented, can provide more information on government goals and priorities, how programmes fit in with these goals, and actual progress and results in achieving them.

Adopting new approaches for public procurement like careful involvement of suppliers; systematic risk management approaches; systematic redesign of organizational processes; use of experienced consultants; careful selection of software providers leads to enhance procurement performance, (Basheka, Oluka and Murugusi, 2012). Report done by Andrle, 1996 on Transit system in the United States indicated there is well-established interest in improving performance reducing costs to increase efficiency, enhancing vehicle maintenance to improve service reliability, modifying bus schedules to increase on-time performance, improving marketing and communications to increase customer satisfaction. Further noted that a number of U.S. public transportation agencies were achieved by a commitment to TQM in the late 1980s and the system included Madison Metro in Madison, Wisconsin; Port Authority of Allegheny County in Pittsburgh, Pennsylvania; and Ride-On in Montgomery County, Maryland.

## **Regional Perspective of Quality Control System**

Angella, Amudo & Eno L. Inanga, (2009) carried out a study on Evaluation of Internal Control System: A Case Study from Uganda in 2009, this study is based on the Regional Member Countries of the African Development Bank Group (AfDB) pin pointing on Uganda in East Africa and developed a conceptual model used in evaluating the internal control system in Public Sector Projects in Uganda financed by the African Development Bank. They found out that some control components of effective internal control system were lacking in these projects.

Regional and local governments are now investing in Information Communication and Technology to enhance the services delivery for citizens and improve internal efficiencies by

lowering costs and increasing productivity. Public entities are implementing notable communication infrastructures to promote economic development, attract new businesses and residents, and above all, provide excellent service to constituents (Abouzeedan and Busler, 2002). Ngugi & Mugo, (2014) postulated from a business perspective that implementing scalable communication infrastructure such as wide area network to accommodate the various types of services government agencies require on undertaking their daily activities, including provision of broadband internet access for online services and internal collaboration.

### **Local Perspective of Quality Control System**

Public procurement infrastructure and processes in Kenya are governed by Public Procurement and Disposal Act (PPDA) 2005 and Public Procurement and Asset Disposal Act 2015. The regulations 2006 set in the pace of improving procurement performance of procurement in public sector by operationalizing PPDA, 2005. Agaba & Shipman, 2007 noted that many central government ministries and agencies have since then not followed prescribed system and policies. The procurement audits undertaken by PPOA in 2005 revealed that out of 322 procurement contracts audited at the end of 2005, only 7 (2%) were assessed as compliant to the system. This was also supported by the African Peer Review Mechanism Country Review Report (2009), which indicates that non-compliance with the regulations is very high in Kenya which results to poor procurement performance in most of the public entities.

The embracement of Information Technology (ICT) and development of Financial Management Information System (IFMIS) similar to ERP started in 1998 and implementation in 2015 by all ministries and state corporation, County Governments and all other government entities. The main objective is to enhance quality of the service to the public and to improve the efficiency and effectiveness of the procurement processes that involved use of public funds. The ultimate goal of ERP is to enhance the quality of public service delivery by providing timely and accurate financial and accounting information across both the National and County Governments. One of the functionalities of IFMIS is the Procure and makes payment online as well as to automate procurement process from requisition, tendering, contract award to payment.

According to Migai (2010), many private sector organizations are reaping out of investment because of their inability to develop quality preventive and quality assurance models within the supply chain. Juma (2010) also found that lack of quality control system in the private sector contributes to significant increase of defect and wastes associated to loss due to long lead time and inability of the private sector in Kenya to compete with other players globally as based on poor investment in ICT. This significantly translate to poor procurement performance in the private sector in Kenya

### **Kenya National Highways Authority**

Kenya National Highways Authority (KeNHA) exists under the constitution of Kenya, Roads Act, 2007. KeNHA is an autonomous road agency, responsible for the management,

development, rehabilitation and maintenance of international trunk roads linking centres of international importance and crossing international boundaries or terminating at international ports (Class A road), national trunk roads linking internationally important centres (Class B roads), and primarily roads linking provincially important centres to each other or two higher-class roads (Class C roads).

The Corporation is headed by the Director General who is also a member of the board. The vision of KeNHA is to be “A leading Highways Authority committed to quality, safe and adequate national trunk roads. Its mission is “To construct and manage national trunk roads that enhance socio-economic growth and prosperity”. In the execution of its functions KeNHA ensures development, rehabilitation and maintenance of the road network consistent with the economy and set standards; that its operations are conducted efficiently, economically and with due regard to safety; and that financial administration is conducted in accordance with the provisions of this Act and regulations made there under.

The core functions of KeNHA as stipulated in Kenya Roads Act, 2007 Section 4(2), are: constructing, upgrading, rehabilitating and maintaining roads under its control; controlling national roads and road reserves and access to roadside development; implementing road policies in relation to national roads; ensuring adherence to the rules and guidelines on axle load control prescribed under the Traffic Act and any regulations under this Act; ensuring that the quality of roads works is in accordance with such standards as may be defined by the Minister ;in collaboration with the Ministry responsible for transport and the Police Department, overseeing the management of traffic and road safety on national roads and collecting and collating all such data related to the use of national roads as may be necessary for efficient forward planning under this Act. In addition, KeNHA is mandated to monitoring and evaluating the use of national roads; planning the development and maintenance of national roads; advising the Minister on all issues relating to national roads; preparing the road work programmes for all national roads; liaising and co-coordinating with other roads authorities in planning and on operations in respect of roads and performing such other functions related to the implementation of this Act as may be directed by the Minister

## **STATEMENT OF THE PROBLEM**

The goal of the quality control system is to ensure that all procurement data is scientifically valid, defensible and of known and documented quality. This goal can be achieved by ensuring that adequate quality control steps and procedures are used throughout the entire procurement process. In agreement with this goal, Talib, Rahman and Qureshi (2012) argued that procurement performance can only be improved if quality control system and strategies are in place and such include well-functioning information system, controls system, coordinated corporate management strategies and proactive approach to quality aspects. Report released by World Bank in 2004 showed that public procurement represents 18.42% of the world GDP. In this respect, several developing countries have taken steps to reform their public procurement system,

although the modalities of implementation of quality control system and structures are still shrouded by secrecy and inefficiency. In all these cases, huge amounts of resources are wasted (Odhiambo & Kamau, 2013).

Globally, 60% of quality system in public procurement have not delivered the expected benefits (Soudry, 2007). Heeks (2010) reported that 35% of procurement system in public sector in developing countries are total failures, 50% are partial failures, while the remaining 15% are successes. Chang (2011) reported that in year (2010), 40% of Korea's total public procurement (124 billion USD) was conducted through manual procurement system. In developing countries like Kenya, public procurement is increasingly being appreciated as essential in service delivery (Hunja, 2011) and it accounts for a high proportion of total spend of taxpayers' money. Orina (2013) in her study on E-procurement readiness factors in Kenya's Public sector found that resistance to change, lack of enthusiasm, staff skills, and to some extent procurement policies led to a failure of e-procurement adoption in public institutions to yield only 47% adoption rate.

Poor procurement performance is a result of non-adherence to quality control system and many companies chose to pay for the poor quality in what he referred to as "price of nonconformance" (Crosby, 2007). Despite the government efforts to improve performance of public entities, many still have not complied with the directives including implementation of IFMIS as ICT automation of procurement process. Kenyan state corporations in the recent past have opened up lucrative procurement deals that led them into problems ranging from corruption and litigations. As a result, there was need to implement quality control system and structures to assist them in meeting their goals. To this date, numerous procurement irregularities and unethical practices have dented the conception of quality control system yet no study has exhaustively dwelt on documenting the role of quality control system in procurement performance of the public sector. It was this gap that prompted the researcher to embark on studying role of quality control system in procurement performance of State Corporations in Kenya where the context of focus was KeNHA.

## **GENERAL OBJECTIVE**

The general objective of the study was to establish the role of quality control system on procurement performance in Kenyan state corporations: A case of Kenya National Highways Authority.

## **SPECIFIC OBJECTIVES**

1. To determine the effect of quality control planning on procurement performance in Kenya National Highways Authority
2. To assess the influence of quality control policies on procurement performance in Kenya National Highways Authority
3. To establish the role of quality control procedure on procurement performance in Kenya National Highways Authority

4. To evaluate the effect of quality control reporting on procurement performance in Kenya National Highways Authority

## **LITERATURE REVIEW**

### **Theoretical Review**

A theory is a supposition or system of ideas intended to explain something. Theories attempt to explain facts that bring out rational explanation of cause and effect relationship among group of observable phenomenon (Mugenda & Mugenda, 2003). This study is grounded on System Theory, RBV Theory, Institutional Theory and Transaction Cost Economics (TCE) Theory.

### **System Theory**

System theory is an interdisciplinary theory about every system in nature, in society and in many scientific domains as well as a framework with which to investigate phenomena from a holistic approach (Capra, 1997). System thinking arises from the shift in attention from the part to the whole (Jackson, 2003), considering the observed reality as an integrated and interacting unicum of phenomena where the individual properties of the single parts become indistinct. In contrast, the relationships between the parts themselves and the events they produce through their interaction become much more important, with the result that system elements are rationally connected (Luhmann, 1990) towards a shared purpose (Golinelli, 2009). The systemic perspective argues that it is not possible to fully comprehend a phenomenon simply by breaking it up into elementary parts and then reforming it. Instead, what is required is application of a global vision to underline its functioning.

Although a study can start from the analysis of the elementary components of a phenomenon, in order to fully comprehend the phenomenon in its entirety one has to observe it also from the higher level of a holistic perspective (von Bertalanffy, 1968). System theory encompasses a wide field of research with different conceptualizations and areas of focus (Senge, 1990). Specifically, within this study, the theory has been adopted in observing SCM as part of the broader organization with a common goal of enhanced performance derived from synergies across functional areas. This view involves collaboration across the organization for quality management, enforcement of procurement management rules, enforcement of SCM policies and adoption of SCM strategies that are aligned to the organization strategies. Further is to determine how the head of SCM's placement in top management impacts on the adoption of SCM strategies, policies and practices that are beneficial to the organization as a whole through the wider spectrum a boardroom seat provides. System theory also analyses the relationship between organizations and their environment (Aldrich, 1979).

While up-front quality planning is what organizations should be doing, it is normal for organizations to focus their first quality efforts on quality control. In this aspect of the Quality Trilogy, activities include inspection to determine percent defective (or first pass yield) and

deviations from quality standards. Activities can then focus on another part of the trilogy, quality improvement, and make it an integral part of daily work for individuals and teams (Juran and Frank, 1988). Quality planning must be integrated into every aspect of the organization's work, such as strategic plans; product, service and process designs; operations; and delivery to the customer. In this study the theory is used to place the organization as part of a larger supply chain with shared objectives of quality management as well as lower costs of goods and services through procurement management, relevant SCM strategies as well as policies with regard to supplier collaboration. This theory explicitly explains the relationship between quality control planning and procurement performance in state corporations.

### **RBV Theory**

The Resource Based View (RBV) uses firms' internal characteristics to explain firms' heterogeneity in strategy and performance. A firm is an organized, unique set of factors known as resources and capabilities, and RBV theory cites two related sources of advantages: resources and capabilities (Luo and Tung, 2007; Rui and Yip, 2008). Resources are a firm's accumulated assets, including anything the firm can use to create, produce, and/or offer its products to a market. Resources are eligible for legal protection (as such, firms can exercise property rights over them); can operate independently of firm members (Camiso'n, 2005); and intervene as factors in the production process to convert input into output that satisfies needs. Resources can be tangible assets (e.g. physical and financial resources) and intangible resources (e.g. patents, copyrights, designs, licenses, registered trademarks, corporate names and logos).

The accelerated internationalization approach emphasizes organizational learning and the entrepreneurship of top management/founders as important drivers of firms' international behavior (Andersson, 2000). In addition to learning, Mathews (2006) also argued that late movers from emerging economies establish themselves through the strategy of linkage and leverage. The role of networks in firms' procurement performance underlies Mathews's (2002) linkage, leverage, and learning framework, which argues that it is easier for emerging firms to create new capabilities through learning within established networks rather than building them via the sequential process. This perspective argues that state corporations can overcome their late-mover disadvantage by using quality control system as a springboard to actively participate in procurement and acquire strategic assets from mature state corporations (Luo and Tung, 2007; Rui and Yip, 2008).

Cyert & March, (2003); March & Simon, (2008) postulated that the theory of Upper-echelons has its roots in the behavioral theory of the firm. The decisions made by the managers contain a behavioral component which in some way reflects their own ideologies. The model of upper-echelons puts into perspective the effect of these idiosyncrasies and was treated in a much similar way by Whittington (2008) who further noted that the effects of "built-in preferences and information processing system". In that way upper-echelons theory encompasses a theory of action determinism.

The RBV theory depicts a direct and solid relationship between QC system and procurement performance to efficiency of operations in any field and procurement not an exemption whereby it appreciates components such as commitment, level of involvement in information requirements analysis; and the level of involvement in decision making. The RBV theory is important in guiding organizations to initiate change and adopt quality control system in procurement in the shift towards world class procurement. This theory explicitly explains the influence of quality control policies on procurement performance in Kenya National Highways Authority.

### **Institutional Theory**

Luhmann, (2010) stated that institutional theory is the traditional approach that is used to examine elements of public procurement. Eyaa et al (2011) further noted that there is no single universally agreed definition of institution or institutional theory. Scott (2004) categorically identifies three pillars of institutions as regulatory, normative and cultural cognitive. The regulatory pillar emphasizes use of rules, laws and sanctions as enforcement mechanism, with expedience as a basis for compliance. In Kenya, public procurement is heavily regulated unlike any other profession and in the recent past attracted a lot of concern from the public. Public Procurement and Disposal Act, (PPDA) 2005, Public Procurement Disposal and Regulation of 2006 and guidelines which are being issued by Public Procurement and Oversight Authority (PPOA) and Treasury, these are some of the guidelines that forms the framework of procurement system in Kenya.

Institutional theory dictates that there should be compliance with Public procurement regulations and policies to ensure there is value for money and efficiency procurement process (Andrew, 2008). Jones & George (2009) reiterated that procurement is control by a comprehensive system of formal rules and standard operating procedures (SOPs) that shapes and regulates the behavior of divisions, functions and individuals. SOPs and rules allow employees to perform activities efficiently and effectively. Accordingly, quality means best in purchasing as well as best for the customers and the selling price. The word control in quality represents a management tool with 4 steps namely: setting quality standards, appraising conformance to these standards, acting when standards are exceeded and planning for improvements in the standards.

Quality control entails the following steps: clear definition of quality, knowledge of the expected performance or targets, evaluation of the actual operating performance, comparison of the performance to goals and action of the difference (Scott, 2004). This is achieved by a break through improvement in performance; when a new innovation or a completely fresh idea is brought to improve the current performance is achieved, and then quality control mechanisms are in place to sustain that effectively. The need about having the necessary institutional frameworks and procedures to engage quality control system in procurement process should influence intent to purchase as well as directly influence purchasing behavior itself as outlined in the institutional

theory. This theory therefore explains the relationship between quality control policies and procurement performance of state corporations.

### **Transaction Cost Economics (TCE) Theory**

The theory tries to explain the existence of firms and how boundaries of their operations are define within the business environment. Williamson (2006) applied the theory to address public utility services and the importance of transaction costs in the public sector when analyzing bidding process. Transaction cost theory is a useful tool in unearthing sources of hindrances to firms intending to participate in public procurement. He further noted such costs include among other things are cost incurred in obtaining and ascertaining information about the quantity and quality of goods and services. Patrick, (2010) further highlighted public utility services using TCE to help determine the efficiency of governance structures in the private sphere.

Mumo et al (2013) noted that ten years after the e-government directorate was set to manage ICT in the government, most ordinary Kenya citizens are still using the manual system to access government services making it difficult for the private sector to engage profitably with the government. This particular platform has made the government entities prone to exploitation resulting to poor service delivery and dismal performance in procurement system. Government officials and elected leaders have constantly insist that public entities should automate their procurement processes and must utilize ICT in order to enhance the procurement processes in the public sector.

The key elements in implementing an organization's wide strategic quality planning are intern seen as identifying customers and their needs, establishing optimal quality goals, creating measurements of quality, planning processes capable of meeting quality goals under operating conditions and producing continuing results in improved market share, premium prices and a reduction of error rates in the office (Patrick, 2010). These public entities are faced with tight budgets and a retiring workforce, today's government agencies are operating in an environment defined by the need to 'do more with less'. Public authorities are expected to provide excellent service to their constituents in an effective and transparent manner, all the while working under constant resource constraints by adopting ICT (Hagén& Zeed, 2005).

Integration of procurement functions with the organizational aspects in the public sector is costly due to organizational reorganization and such costs can be optimized with the integration of effective quality control system for effective reporting. Kishor et al (2006) contend that while benefits and external pressure motivate adoption, motivated organizations must have capabilities like financial resources of IT sophistication before the technology can be effectively adopted. From the pillars of transaction cost economics, reporting of transaction costs, organizational incentives and enforcement under the quality control system are identified as antecedents of compliance to procurement rules. This theory thus explains the effect of quality control reporting on procurement performance in Kenya National Highways Authority

## **CONCEPTUAL FRAMEWORK**

Conceptual framework is a visual or written representation that explains graphically or in narrative form the main things (Variables) to be study (Mile and Huberman 1994). The independent variables were quality control planning, quality control policies, quality control procedures and quality control reporting while dependent variable will be procurement performance of KeNHA.

### **Quality Control Planning**

Quality control planning is a wide-ranging concept which covers all matters that individually or collectively influence the quality of a product. It is the totality of the arrangements made to ensure that products are of the quality required for their intended use. Quality control therefore incorporates several factors and it is an integral part of all key activities in procurement. Colley (2005) amplified that approach of specifying quantifiable and non-quantifiable goals that are within management control and linking rewards to their achievement is an extremely effective method of focusing on desired results within the system.

Quality control planning is essential in arranging for the collection of the information required and to identify stakeholders to be interviewed or surveyed. It is aligned with an organization's purpose and strategic direction (ISO9001:2015). Advance planning is especially important if the assessment will be jointly sponsored by the government and interested donors to enable coordination of the work and agreement to be reached on critical aspects of the assessment. Colley (2005) further noted this can be achieved by focusing on a variety of measures aimed at improving and motivating change in returns on investment. Dess et al. (2008) added that quality control design aims at creating low costs in all the value-chain activities of a firm mainly in technology development and procurement.

Quality control strategy and planning is concern with organizing, realigning and managing business activities in order to produce goods and services at lowest cost possible in the entire industry. A study conducted by Dey, et al (2004) involving quality control planning for a steady reduction in wastage proved to be very gainful to the industries related to the material wastage. According to them, organizations that adopt strategy to pursue a cost leadership concentrate in implementing competitor as well as customer orientation marketing strategy. The procurement objective is to produce low cost products and services but while the organization still emphasis on the quality and value as their core objective.

Reddy, et al (2008) in a study of dimensional quality control of casting gives a result of good quality casting at minimum cost. Quality control design embodies quality control and continuous process improvement. This means that constant adjustments to the process are made to keep the product relevant to its market. A well-functioning quality assurance system will embody quality control, the process that ensures that the outcome or product is as it should be by internal and external standards. With the increasing competitive, business survival pressure and the dynamic,

changing customer-oriented environment, quality management has been recognized as one of the important issues and generated a substantial amount of interest among managers and researchers (ISO9001:2015). The classical managerial problem with all services is that the recipient or consumer of the service is an integral part of the delivery of that service; there is no service without customers. Their perception of the service delivered is an important measure of the quality of the service. Thinking has tended to concentrate on those parts of the service delivery that can be objectified as production.

Another study conducted by Shiva Gonde, et al (2007) which was different from other studies in the sense that he has implemented quality circle approach in technical education system for solving work related problems and found that there were major dimensional change in decisions and actions, conventional bureaucratic approach to self-empowering employees along with the responsibilities of managing the institutions. Quality control design also embrace the thinking on quality improvement that will ensure that the nature of the product specification shifts appropriately for the needs of the trainees, the regulators and the delivery of a healthcare service. The difficulty in assessing the benefits of a quality circle programme is attributed to the absence of a quality assurance system in purchasing for this purpose (ISO9001:2015). As the majority of outcomes of quality circles are not directly represented in the form of quality assurance parameters, accounting for them poses a challenge to both purchasing and quality management professionals.

### **Quality Control Policies**

Quality control policies in procurement play a pivotal role in influencing service delivery. It acts as a primary function of procurement with a potential of contributing to the success of government operations and improved service delivery (Nichols 2002). Schooner and Whiteman, (2000) postulated that procurement policy facilitates an efficient and effective service delivery in public sector organizations both developed and developing countries. Detailed public procurement policies and other best practices play a major role in enhancing procurement performance (World Bank, 2005). Quality control procedures ensure that, if conducted properly, the chances of committing mistakes/errors are greatly reduced. Similarly as a consequence of the additional documentation and planning, potential problems have a better chance of being recognized prior to their occurrence. Quality policies will only work effectively if all parties involved are convinced that quality assurance is good for their businesses. There is evidence that involvement of quality circles in purchasing has an effect on quality assurance.

Otieno (2007) noted that unstructured procurement activities in public institutions expose organization to procurement malpractices. It's the policy of public sector to undertake procurement activities in accordance to set procedure and for this reason that Performance of public procurement sector in Kenya is regulated by the PPDA Act 2005, and Public Procurement and Regulation of 2006 and guidelines normally issued by the Public Procurement Oversight Authority only and which must comply with to the latter by all the public entities and providers

of Public procurement regulations (2006). The guidelines directs procurement activities (Barrett, 2010).

Rogers et al., (2007), Arrowsmith (2003), Knight et al., (2003) and Bolton (2006) referred public procurement as an instrument, or lever for promoting policies such as industrial and economic development. Jones & George (2009) reiterated that procurement is control by a comprehensive system of formal rules and standard operating procedures (SOPs) that shapes and regulates the behavior of divisions, functions and individuals. SOPs and rules allow employees to perform activities efficiently and effectively. Procuring entities needs accurate and concise information records for tracking of transaction that relates to procurement and other business activities (Thurston, 2006). Chimwani, (2004) maintained that the best way to improve procurement performance in public sector is to start with implementing effective records management system or using specialist in the records management. They use either electronic management system or manual system to keep records. Such information well-kept could have meaningful purpose when they are use in making decision relating to procurement of goods or in service delivery for State Corporation and therefore enhancing procurement performance.

Bolton (2006) ascertained that such measures in procurement makes retrieval of information easy and secure important documents and enhances service delivery in public sector other than improves decision making process. Today SLAs are being increasingly becoming very popular in both private and public sectors to manage internal service delivery, particularly in sectors where a significant part of the total cost is spent on central support services. The main purpose of the regular meetings among the team members is to achieve customer (internal and external) satisfaction through continuous improvement and teamwork (Goh, 2000). To achieve this result it is important for the members to have a good understanding of the role of customer and the involvement and commitment of employees throughout the organization (Besterfield, 1994). In other words, to be successful the initiative requires intense focus on customers and on business processes, a strong spirit of continuous improvement, coordinated teamwork, and proactive employee participation.

### **Quality Control Procedures**

Procedures of procurement and management of material resources are a set of interdependent, logically linked and value-added sub-processes, which takes place within the organization in order to ensure and manage the elements necessary to conduct business in an efficient and effective manner. From a systemic approach, the procurement process should ensure a balance between the needs and the material resources available so that the organization can operate effectively and efficiently (Deac, 2013). To achieve a competitive advantage, the process of procurement and management of material resources must be carried out in accordance with the principles of the total quality concept: providing the products that are required, with the required quality, in the desired quantity, at the desired time, and at the lowest price possible. In order to meet the total quality requirements, the procurement process must be strategically and

proactively oriented and must effectively participate in developing the general strategies of the organization.

The role of the QC procedures of issuing the technical specifications is to determine the level of quality required for the material resources to be supplied (Jones & George, 2009). The quality level can be defined by selection of brands or standards or by issuing the technical documentation, in the case of processes with particular characteristics or that have a large influence on the quality characteristics of the finished product - e.g. parts, parts for the automotive industry (Baily et al., 2004). Procurement strategies must be an integral part of the overall strategies of the organization and must harmonize with them. In order to achieve the specific objectives, sub-processes are identified within the process of procurement and management of material resources and indicators and methods of performance control are established.

According to Jones and George (2009) due to the strong impact of the process of procurement and management of material resources on compliance with the product requirements, controlling and establishing appropriate monitoring and measurement methods will have an important contribution to further improve the efficiency and effectiveness of the organization. The methods used to monitor, measure and analyze must demonstrate the ability to achieve the planned results and to comply with the organization's strategy. Performance is measured based on key performance indicators that must be established from the phase of designing the procurement process. If, for reasons of feasibility, certain indicators cannot be measured and monitored, criteria will be established (Popa, 2013).

### **Quality Control Reporting**

As Sriram & Stump (2004) indicated quality control reporting reflects how the function is perceived within the organization and if it is positioned to become a competitive differentiator that delivers greater value to customers and shareholders. It is important because it facilitates ability to influence and strategically partner with appropriate departments and lines of business, enterprise focus to maximize total value and drive consistency, rigor in measuring value delivered provides both hard and soft value to the company, identifications and management of appropriate enterprise controls for procurement and supply chain risks, procurement efficiency and standardization and talent development and retention (Jones & George, 2009). In defining the technical parameters, it is very important to specify the accurate tolerance intervals and to eliminate any unnecessary requirements. It is a known fact that additional costs arise from both unnecessary requirements (excessive quality) and from missing requirements or elements (poor quality).

An accurate analysis and reporting of the value will determine whether it is possible to use cheaper alternative resources, if the tolerances are too tight or if unnecessary requirements are added (Wymer & Regan, 2005). In the recent past information communication technology (ICT)

applications has been in the lime light especially for public sectors and particularly the Enterprise Resource Planning (ERP) and Integrated Financial Management Information System (IFMIS). These are internet enabled technologies (ICTs) use to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Croom & Brandon Jones, 2004). Sriram & Stump (2004) postulated that enterprise resource planning (ERP) system plays a pivotal role in improving internal information sharing on quality control measures that improves procurement performance.

As Wymer and Regan (2005) argue, improper disclosure of such protected information could violate numerous laws, as well as ethics rules. It also could subject you to administrative actions, as well as civil or criminal penalties. Management in contracting authorities should ensure that there is an appropriate focus on good practice in purchasing and, where there is a significant procurement function that procedures are in place to ensure compliance with all relevant guidelines. Officials involved in procurement must not make improper use of their position (Tan et al., 2009). Officials may have access to very confidential and/or market sensitive information. It is unethical to use inside information provided to the agency as part of a tender process, either for the material benefit of the official or for another person. Criminal sanctions apply to such behavior.

According to Cane (2011) the optimal procurement reporting should be determined by the four key considerations: enterprise focus, customer proximity, demonstrable value, and business partner. The diagram below describes the potential key benefits of each. Inter-organizational information system constituting automated information system shared by various firms along the supply chain can be used to support information sharing with customers and suppliers. ERP contributes to improved communications patterns and processing of procurement data. Therefore, entities should strive to find trends, patterns and connections in data in order to inform and improve procurement performance. The Finnish taxation system is one example of a public sector organization providing customer-centric services. Kalakota & Robinson (2000) identified some of the benefits of ERP application in procurement of goods and services to include the following; cost saving and improvement of efficiency. ICT tools enable public institution to offer quality services to the public and thus enhancing procurement performance more promptly and instantaneous.

### **Procurement Performance**

Peter Drucker believes that there is no efficiency without effectiveness, because it is more important to do well what you have proposed (the effectiveness) than do well something else that was not necessarily concerned. The relationship between efficiency and effectiveness is that of a part to the whole, the effectiveness is a necessary condition to achieving efficiency. Knudsen, (1999) viewed Procurement performance in terms of efficiency and effectiveness. These two elements could be either quantify financially while other cannot. The scholar further argued that for organization to attained high level of procurement performance professionals must act

proactively rather than acting reactively to a situation when the need arises. Baternburg & Versendaal (2006) argued alongside Knudsen by postulating that measuring the performance of the procurement function yields benefits to organizations and such benefits include but not limited to cost reduction, customer satisfaction, enhanced profitability, assured supplies, quality improvements and competitive advantage. This therefore forms key performance indicators of procurement performance for organization.

Richard et al (2009) approach procurement performance by categorizing procurement performance in terms of financial performance, customer service, social responsibility, employee stewardship and further added that for performance to be realized there must be close cooperation with the relevant players in the supply chain who share common objective of customer satisfaction. Delaney et al, (2006) strongly argued that procurement performance could viewed along the dimension pointed out by Batenburg & Versendaal (2006) which include but not limited to customer service and return on investment. According to OECD (1990) report, providing more public services with less public spending is an ongoing challenge for all OECD member countries that is becoming increasingly important in the context of ageing. In addition, the variety of OECD country approaches to managing public spending programmes provides useful insights about possible strategies for improving value for money.

## **RESEARCH DESIGN & METHODOLOGY**

### **Research Design**

A descriptive study was appropriate in this case, according to Mugenda & Mugenda, (2003), it is one which information is collected without changing the environment. According to Mark (2003), a research design is the overall plan for conducting a study in order to answer the research question. The researcher used qualitative research design, which is a method of enquiry aimed at gathering an in-depth understanding of a given topic. It was the most appropriate method to use in the study since much of the information was presented in a descriptive form hence being easier to understand and interpret. It involved the use of questionnaires to acquire data from respondents.

### **Target Population**

According to Mugenda and Mugenda (2003) population is entire group of individuals, events or objects having common and specific observable characteristics which the researcher wants to generalize results of study. All the departmental heads, all managers, senior procurement officers and heads of procurement units of KeNHA who were directly involved in organizations decision making activities that relate to quality control and system in place and relevant to this study formed the population as follows:

**Table 1: Target Population**

S/NO	Levels of respondents in Target management population	Target population	Percentage
001	Departmental Heads	10	20%
002	All Managers	24	48%
003	Senior Procurement Officers	2	4%
004	Heads of Procurement Units	14	28%
	Total	50	100%

Source: KeNHA, 2016

### Sample Size

Sample is a subset of the target population that has been procedurally selected to represent it (Oso and Onen, 2009). Kothari (2003) suggests that a sample should be optimum and should fulfill the requirement of efficiency, representation, reliability and flexibility. The respondents were stratified into four classes, which are the departmental heads, all managers, senior procurement officers and head of procurement unit. After the strata, the simple random technique was applied to entire population of 50 representatives.

### Sample and Sampling Procedure

The study employed stratified sampling method in determining who to administer questionnaire to obtain a representation of the whole population. Kothari (2005), postulated that a representative sample is one which is at least 10% of the population is considered as representative. Stratified random sampling technique is always use when population of interest is not homogeneous and can be subdivided into groups or strata to obtain a representative sample. Kombo et al (2006) cognitively argued that the purpose of the research is to draw conclusions or make predictions affecting the whole population, and therefore probability sampling is appropriate.

### Data Collection Instruments

The instrument for the data collection was questionnaires, which was administered by the researcher. The structured questionnaires were then distributed to the individual respondent within organization to gather the necessary information for the study. A five point Likert scale questionnaire was also used and intended to measures the level of agreement or disagreement. Likert scale is appropriate in measuring perception, attitude, values and behavior and assisted greatly in converting the qualitative responses into quantitative values (Mugenda & Mugenda, 2003).

### Data Analysis and Presentation

Data analysis refers to organizing data to produce findings that require interpretation by the researcher (Burns & Grove, 2003).In addition to what Burns &Grove, (2003), Hynman, (2009) added that data processing involves translating the answers on a questionnaire into a form that

can be manipulated easily to produce statistics. The questionnaires were checked for completeness and consistency of information at the end of every field data collection day and before storage. Data capturing was done using Excel software, the data from the completed questionnaires was cleaned, re-coded and entered into the computer using Statistical Package for Social Scientists (SPSS-Version 22) in order to present data in a descriptive form. Descriptive analysis was conducted using SPSS. Inferential statistics was also analyzed where reliability and linear regression equation was solved to establish the significance of the independent variables on the dependent variable. The confidence level of 95% was required as per multiple regressions was met to ascertain the relationship between the independent and the dependable variables. The following multiple regression model was applied;

$$Y = a + B1*X1 + B2*X2 + B3*X3 + B4*X4 + B5*X5 + e$$

Where; Y= Procurement Performance (Dependent Variable), a = Constant, b1, b2, b3 and b4= coefficients; X1, X2, X3 & X4 represented independent variables as follows; X1= Quality control policies, X2= Top Management, X3= Procurement Policy, X4= Cost Reduction and e = error term. Data was presented in the form of frequency distribution tables, graphs and pie charts that was facilitated by description and explanation.

## **RESEARCH RESULTS**

The data was gathered from the questionnaire which was designed in line with the objectives of the study. The data obtained was fed into SPSS version 22.0 and the output was used to compute the ratios needed to establish the role of quality control system on procurement performance in KeNHA. The specific objectives were focused on establish the influence of quality control planning, policies, procedures and reporting on procurement performance in Kenya National Highways Authority. Both descriptive and inferential analyses were conducted. The information and data obtained were presented in form of frequency tables and figures.

### **Reliability Test Results**

In this study to ensure the reliability of the instrument Cronbach's Alpha was used. Cronbach Alpha value is widely used to verify the reliability of the construct. Therefore, Cronbach Alpha was used to test the reliability of the proposed constructs. According to Cooper and Schindler (2006) reliability tests the stability, equivalence and internal consistency of an instrument. Reliability evaluates accuracy of the measures through assessing the internal stability and consistency of items in each variable. A Cronbach alpha,  $\alpha < 0.5$  is unacceptable;  $0.5 \leq \alpha < 0.6$  is poor and  $0.6 \leq \alpha < 0.7$  is acceptable. While a coefficient of  $0.7 \leq \alpha < 0.9$  is good and  $\alpha \geq 0.9$  is excellent or high stake testing. So the higher the ( $\alpha$ ) coefficient the more reliable is the construct. In this study, Cronbach alpha was found to be above 0.6 for all the variables and therefore the construct was found to be acceptable. Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability (Wright, 2005). On the

basis of reliability test it was supposed that the scales used in this study is reliable to capture the constructs as shown in the table 2 below.

**Table 2: Reliability Test of Constructs**

<b>Variable</b>	<b>Crobanch alpha</b>	<b>No. of items</b>	<b>Comments</b>
Quality control planning	0.865	3	Accepted
Quality control policies	0.812	3	Accepted
Quality control procedures	0.778	3	Accepted
Quality control reporting	0.728	3	Accepted

The findings indicated that quality control planning had an alpha value of 0.865, quality control policies had a coefficient of 0.812, quality control procedures had a coefficient of 0.778 and quality control reporting had an alpha value of 0.728. All constructs depicted that the value of Cronbach's Alpha are above the suggested value of 0.7 thus the study was reliable (Wright, 2005). This illustrates that all the questions on role of role of quality control system on procurement performance in KeNHA were reliable as their reliability values exceeded the prescribed threshold of 0.7 (Wright, 2005). These findings correlate with Mugenda & Mugenda (2003) argument that coefficient of 0.6-0.7 is a commonly accepted rule of thumb that indicates acceptable reliability and 0.8 or higher indicated good reliability.

The study found that quality control system affects the procurement performance of KeNHA to a great extent. The study established that quality control system affect efficiency, effectiveness and cost savings to a great extent while they affect service delivery to a moderate extent. Quality control system within procurement function yields benefits to organizations and such benefits include but not limited to cost reduction, customer satisfaction, assured supplies, quality improvements, service delivery and competitive advantage. From the inferential analysis, the four independent variables contribute about 69.2% to the procurement performance of KeNHA. A unit increase in quality control planning will lead to a 0.637 increase in procurement performance of KeNHA; a unit increase in quality control procedures will lead to a 0.396 increase in procurement performance of KeNHA; a unit increase in supply chain risks will lead to a 0.260 increase in procurement performance of KeNHA, while a unit increase in Quality control policies will lead to a 0.220 increase in procurement performance of KeNHA. Quality control procedures had a 0.0158 level of significance hence the most significant aspect of quality control system in influencing the procurement performance of KeNHA.

### **Quality Control Planning**

The study found that quality control planning affects the procurement performance of KeNHA to a great extent. The results showed that direction on goal setting, continuous improvement and

enhanced accountability affect procurement performance in KeNHA to great extents. The study also established that defect reduction affects procurement performance in KeNHA to a moderate extent. From these results quality control planning creates low costs in all the value-chain activities of a firm mainly in technology development and procurement. There was in agreement that quality control planning application in procurement saves on procurement cost in KeNHA, quality control planning enhances service delivery in KeNHA, quality control planning assists in stock management in supply chain in KeNHA, quality control planning is used by the procurement department and enhances efficiency and effectiveness in KeNHA and that quality control planning application in procurement enhances service delivery to the public in KeNHA, while there was impartiality on that quality control planning reduces procurement lead time in KeNHA.

### **Quality Control Policies**

The study established that quality control policies affect the procurement performance of KeNHA to a great extent. To achieve this result KeNHA has a good understanding of the role of customer and the involvement and commitment of employees throughout the organization. The study ascertained that standard operating procedure, stakeholder involvement and service level agreement affect procurement performance in KeNHA to a great extent, while PPDA 2005/PPADA, 2015 affect procurement performance in KeNHA to a moderate extent. As such, involvement of quality control policies in purchasing has an effect on procurement performance of public institutions. The study also established that implementation of quality control policies affects procurement function and therefore proper quality control policies assist in enhancing procurement performance it act as catalyst to improving procurement performance in KeNHA, quality control policies enhance access to procurement opportunity.

### **Quality Control Procedures**

The study also found that quality control procedures affect the procurement performance of KeNHA to a great extent. As such, quality control procedures ensure that the chances of committing mistakes/errors are greatly reduced. Similarly as a consequence of the additional documentation and planning, potential problems have a better chance of being recognized prior to their occurrence. Transparency management, material sourcing and total quality principles affects procurement performance in KeNHA to great extents while organizational co-ordination affects procurement performance in KeNHA Kenya to a moderate extent. It was also clear that operationalization of Public Procurement and Disposal Act, 2005 and Public Procurement and Asset Disposal Act, 2015 eliminates inefficiencies in procurement and that standard operating procedures in KeNHA are incorporated in work instructions manuals improves efficiency and effectiveness in procurement performance. KeNHA's Standard operating procedure pegged on existing work instruction manuals dictates the level of services expected by the customers. This therefore enhances procurement performance in relation to customer satisfaction.

Implementation of public procurement and disposal act, 2005 and public procurement and Asset Disposal Act, 2015 in KeNHA has enhanced efficiency of procurement system.

### Quality Control Reporting

The study finally established that quality control reporting affects the procurement performance of KeNHA to a great extent. Proper disclosure of procurement information is essential for procurement ethics and performance. From the results demonstrable values, business partner and customer proximity affect procurement performance in KeNHA to great extents, while enterprise focus affect procurement performance in KeNHA to a moderate extent. There was agreement on that KeNHA has provided the required foundational and orientation skills on quality control reporting in the procurement function, quality control system assist KeNHA in doing away with unnecessary supply chain activities through the dataset reporting, KeNHA's quality control system implementation in procurement enhances effectiveness and improves service delivery and quality control reporting improves cost reduction in the procurement function of KeNHA. On the other hand, there was impartiality on that quality control reporting is essential in aligning procurement activities and efficiency in procurement performance in KeNHA

### INFERENTIAL ANALYSIS

Inferential analysis was utilize in this study to determine if there is a relationship between an intervention and an outcome, as well as the strength of that relationship. The study conducted inferential analysis to establish the relationship between the independent variables and the dependent variable of which involved a coefficient of determination and a multiple regression analysis. The coefficient of determination is a measure of how well a statistical model is likely to predict future outcomes.

**Table 3: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.832	.692	.600	.0378

**a Predictors:** (Constant), quality control planning, quality control policies, quality control procedures and quality control reporting

The coefficient of determination,  $r^2$  is the square of the sample correlation coefficient between outcomes and predicted values. As such it explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (procurement performance of KeNHA) that is explained by all the four independent variables (quality control planning, quality control policies, quality control procedures and supply chain risks). The four independent variables that were studied revealed that there exists a strong relationship between procurement performance of KeNHA as represented by the  $R^2$  and the quality control system. This therefore means the four independent

variables contribute about 69.2% to the procurement performance of KeNHA while other factors not studied in this research contributes 31.8% of the procurement performance of KeNHA.

A one way analysis of variance (ANOVA) that provided information about levels of variability within the regression model and which formed a basis for tests of significance was used. The ANOVA F-statistic was used to test the research questions for the regression coefficients for each variable to be equal to zero. An analysis to determine the combined influence of all the independent variables was done.

**Table 4: ANOVA Test**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.787	1	.447	4.617	.034
	Residual	62.191	49	.351		
	Total	63.978	50			

**Predictors:** (Constant), Quality control planning, quality control policies, quality control procedures and quality control reporting

**Dependent Variable:** Procurement performance of KeNHA

All the independent variables were combined and involved in the analysis. The results of Analysis of variance (ANOVA) for regression coefficients are shown in Table 4. The analysis results revealed that the significance of F statistics is 0.034 which is less than 0.05. This implies that there is a significant relationship between quality control planning, quality control policies, quality control procedures, quality control reporting and procurement performance of KeNHA.

**Table 5: Coefficient of Determination**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	1.112	1.223		0.917	0.000
	Quality control planning	0.637	.075	0.235	1.379	0.020
	Quality control policies	0.220	0.096	0.215	1.922	.0182
	Quality control procedures	0.396	0.204	0.155	2.560	.0158
	Quality control reporting	0.260	0.056	0.453	1.967	.0167

**Dependent Variable:** Procurement performance of KeNHA

The researcher conducted a multiple regression analysis so as to determine the relationship between the parameters of procurement performance of KeNHA and the four variables of quality control system. As per the SPSS generated table, the equation ( $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ ) becomes:

$$Y = 1.112 + 0.637X_1 + 0.220X_2 + 0.396X_3 + 0.260X_4$$

According to the regression equation established, taking all factors (quality control planning, Quality control policies, quality control procedures and quality control reporting) constant at zero, procurement performance of KeNHA would be 1.112. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in quality control planning will lead to a 0.637 increase in procurement performance of KeNHA; a unit increase in quality control procedures will lead to a 0.396 increase in procurement performance of KeNHA; a unit increase in supply chain risks will lead to a 0.260 increase in procurement performance of KeNHA, while a unit increase in Quality control policies will lead to a 0.220 increase in procurement performance of KeNHA.

These results infer that quality control planning in e-sourcing contributes more to procurement performance of KeNHA, followed by quality control procedures, then supply chain risks, while Quality control policies contributes the least to procurement performance of KeNHA. At 5% level of significance and 95% level of confidence, Quality control policies had a 0.0182 level of significance and supply chain risks had a 0.0167 level of significance, while quality control procedures had a 0.0158 level of significance hence the most significant aspect of quality control system in influencing the procurement performance of KeNHA.

## **CONCLUSIONS**

The study concludes that effectiveness, efficiency service delivery, cost savings and the best procurement function can be achieved through quality control planning, policies, procedures and reporting for continuous improvement of processes and by adding value to activities. The study concludes that due to the significant share that the quality control system and costs of procurement hold in the turnover of an organization, any action to reduce them will have a huge impact on costs and therefore on service delivery. In general, in developed economies, the process of procurement and management of material resources can reduce the cost.

## **RECOMMENDATIONS**

The study recommends that, for KeNHA to realize full benefits of quality control system the control system must be in place to validate procurement functions. Thus, management at the highest level of the organization must ensure the design and implementation of effective processes of procurement and management of material resources in order to ensure compliance of materials supplied with specified purchase requirements, to identify, evaluate and select sources supply, and to develop mutually beneficial relationships with suppliers and assess their capability to deliver products that comply with the requirements of the organization.

By means such as planning, controlling and determining appropriate methods for monitoring, measurement and analysis, the process of procurement and management of material resources will have an important contribution to improve further the efficiency and effectiveness of the

organization. The controls measures must also be in place to maintain calibration of records for inspection/test equipment.

The implementation of the quality control system should be in line with the corporate vision, mission, values and plans including communication and evaluation plans to build employee buy-in and communicate results. This will ensure that procurement performance is measured and actual performance gauged against expectations, new initiatives, budgets including resources needed for new initiatives and current operations for lean projects.

This study recommends that the management of KeNHA should use bottom up approach of management for effective implementation of quality control system. Decisions should be decentralized rather than centralization. The management should focus more on those aspects of procurement outcomes. The implementation of QC system should support the Corporation's business strategy.

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