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# INFLUENCE OF QUALITY MANAGEMENT ON PROCUREMENT PERFORMANCE IN PUBLIC UNIVERSITIES IN KENYA

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## Abstract

***Purpose:*** *the study aimed at evaluating the influence of quality management on procurement performance in Public Universities in Kenya.*

***Materials and methods:*** *This chapter covers the various methods used to carry out this study. Include the research design, target population of the study, sample and sampling techniques, description of research instruments, data collection procedure, pilot testing, reliability and validity of the instrument, and data analysis and presentation techniques while conducting the study. Research methodology was intended to provide a roadmap for the data collection exercise. The study targeted all the Public universities in Kenya which are made up of six user departments with a total of five hundred and twenty-five (525) members of staff the selected procurement officers in the public universities at their main campuses are chosen because all procurement main activities are carried out at the University main campuses The data collected was analyzed using descriptive statistics as well as inferential statistics. Quantitative data was analyzed through quantitative analysis methods where the data was scored by calculating means and percentages. The Statistical Packages for Social Sciences (SPSS 22.0) software was used to analyze quantitative data. Quantitative data analysis method was used to analyses data obtained from open-ended questions. Lastly, regression analysis was used to show the relationship between dependent variable and the independent variables.*

***Results:*** *The study examined the influence of Quality Management on procurement performance in public universities in Kenya the study it can summarized that Quality management involves overseeing all activities and tasks needed to maintain a desired level of excellence.*

***Recommendations:*** *The study recommends public universities should retain long term Relationship so to ensure both the supplier and buyer continually improve on value creation. The study recommends that management should ensure the procurement manager to ensure that quality awareness is involved with each decision areas for effective quality management.*

Keywords: Quality Management, Procurement Performance, Total Quality Management, Supplier Development, Public Universities

## INTRODUCTION

This chapter presents the background of the study, statement of the problem, the study objectives, research hypothesis, justification and the scope of the study. The last section of the chapter covers the study limitations

### 1.1 Background to the Study

Due to this fact, interest in purchasing as a separate, important, and profit-contributing function of management gained substantial momentum within the decade of the nineteen fifties' and up to the present (Potts, 2012). According to Gikonyo (2014). just like many administrative functions in the public sector, procurement traditionally has been a highly regulated function. The supplier management practice and regulation are therefore traditionally thought to be fundamental to the achievement of procurement's goals of efficiency, economy, equity, and integrity (Gikonyo, 2014).

Supplier management practice ensures that the entire supply chain acts like a single integrated company (Potts, 2012). Share information with suppliers on inventory levels Maintain long-term relationships with key suppliers for design collaboration Supplier management practice practices involves ensuring the suppliers meets the required set standards of operations from the purchasing department that is headed and managed by a purchasing manager (Manyega,2015). Procurement performance ensuring, the purchasing department purchases the required materials for all the departments and branches of the company. On the other hand, procurement performance is where the purchasing decision-making process (Mateiz, 2013). According to the author, procurement performance involves having the procurement managers, project, subsidiary, office or departments purchasing their products or services. Globally, both private and public institutions and organizations have been moving to supplier management practice strategies in the recent past (Manyega, 2015).

This shift in purchasing operations is due to the mentioned benefits of procurement performance including, the maintenance of uniformity in purchasing policies, reduction of transportation costs due to bulk purchasing, avoiding duplication of efforts, discount advantages associated with bulk purchasing and so on (Manyega,2015). Supplier management practice strategies, on the other hand, became associated majorly with a lack of economies of scale in purchasing. This factor, in the long run, plays a major role in the financial performance of both public and private institutions.

Mateiz (2013). argues that supplier management practice is an escalating trend for both private and public organizations. Despite the optimism placed on procurement performance by most institutions, the is not flawless according to (Kasaya, 2013). The importance of purchasing to organizational competitiveness is increasingly being noted, and it is now considered more and more a strategic function instead of just an operative one (Day, Magnan, & Moeller, 2010.

#### 1.1.1 Global perspective of supplier management practices

In the current global competitive market, the management evolution is oriented for supplier management, value and supply chain effectiveness. This scenario, along with the constant advances in supplier operations and transportation, motivates the continuing evolution of supply chain management and different techniques for managerial efficiency. (Badenhorst and Weiss, 2012).

Procter & Gamble's focus is to build on the current success of the Continuous Replenishment Program on joint supplier management. This supplier integration practices have delivered greater than 99% service levels and has reduced customer distribution center inventories cost by as much as 50% in customers representing over 40% of our U.S. and European businesses. P&G has deployed CPFR to enable creation and integration of consumer demand data. This will trigger product

flow from our manufacturing plants to our customers' dcs, from the customers' DCS to their retail store shelves, and ultimately from the store shelves into consumer homes (Badenhorst and Weiss, 2012).

Rising international cooperation, supplier vertical disintegration, along with a focus on core activities have led to the notion that firms are links in a networked supply chain. This novel perspective has created the challenge of designing and managing a network of interdependent relationships developed and fostered through strategic collaboration with the suppliers (Shieh et al., 2013). It requires the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers (Angeles, 2013).

The supplier management operations have led to Cost reduction in P&G has aligned the production schedule with the agreed forecast, so costs have been reduced by decreasing set-up times, effort duplications and variations and the Improved relationship between the trading partners the relationship between P&G, wall mart has improved when collaboration takes place. Trading partners have gained a better understanding of their respective businesses by regularly exchanging information and establishing direct communication channels. (Badenhorst and Weiss, 2012).

This involved leads to the interrelationships across an entire industry sector where frequently buyer and supplier roles are reversed multiple times throughout the network structure (Shieh et al., 2013).

### 1.1.2 Regional perspective of supplier management practices

In Nigeria, supplier management practice led to purchases of suitable goods and services as the specific, detailed requirements of all end-users be considered. This was connected to the risks, within, that the Supplier base integration is not fully met by the. This is because of procurement performance involves some rationalization and homogenization of employee demands (Parmenter,2015). Down south and specifically in South Africa on the other hand, government procurement of own or local requirements (materials, equipment, and services) is to a large extent department, provinces, and municipalities(Badenhorst,2012). However, according to the author, this regime of supplier management practice is associated with a number of cases of tender fraud and lack of services on all levels of government.

Arguments for an of procurement have therefore been put forward due to its associated advantages. Kasaya, however, cautions that if the advantages of supplier management practice were to be realized, efficient contract management and supplier relationship management is a pre-condition. Badenhorst-Weiss (2012) further adds that a school book saga in a number of provinces in South Africa in 2012, where textbooks had not been delivered to schools by the third term of school was an example of the challenges of procurement performance that do not emphasize on proper contract management.

### 1.1.3 Local perspective of supplier management practices

Kenya medical supply agency KEMSA Develop and operate a viable commercial service for the procurement and sale of drugs and other medical supplies. KEMSA Provide a secure source of drugs and other medical supplies for Public Health institutions and through putting in place strategic supplier management practices to eliminating unnecessary inventory level by postponing customizations towards the end of the supply chain. (World Bank, 2013)

KEMSA focuses categorized SCM practices from the following aspects through close partnership with suppliers. with customers, just-in-time supply, strategic planning supply chain benchmarking, few suppliers, holding safety stock and sub-contracting, e-procurement, outsourcing and many suppliers. Ellram,

Baidoo, (2014).) identified seven theoretical processes of service supply chains which include information flow, capacity and skills management, demand management, customer relationship management, supplier relationship management, service delivery management and cash flow.

KEMSA considerations for supplier selection can include the ability of potential suppliers to assure supply continuity, capacity, pricing, logistics, etc. An initial evaluation of the potential supplier's regulatory and quality compliance history of the supplier is done to ensure compliance.

Barahona, (2014) states that a quality agreement is based on the quality procedures in place at both the supplier and procuring organization. The quality agreement also creates mutual understanding of the quality and regulatory requirements relevant to the material/service supplied.

### 1.1.4 Public universities in Kenya

The public universities in Kenya are funded partly by the government and partly by the students. The government has a financial program that aids students, which is carried out by the higher education loans board. Students can apply for loans, which they can pay back after graduating and attaining employment. The institutions offer certificate, diplomas, degrees, master's degrees as well as Ph.D. programs in various fields to admitted students.

The faculties and schools include, faculty of education, Faculty of Science, Faculty of Arts and Social Sciences, School of Environment and Earth Sciences, School of Development and Strategic Studies, School of Graduate Studies, School of Public Health, School of Business and Economics, School of Medicine, School of Planning and Architecture, School of Mathematics and Actuarial Science, and School of Agriculture and Food Security. Apart from the main campus, Public universities have other campuses, a constituent college, and a college. The list of the accredited universities includes 22 Public Chartered Universities and 9 Public University Constituent Colleges.

### 1.2 Statement of the Problem

Public Universities Procurement is expected to contribute immensely to their socio-economic development and particularly be the cornerstone of attaining the government projected grown of the institution of higher learning to accommodate the ever increasing numbers of students transitioning from the subsidized secondary schools (ROK, 2007). According to Angeles and Nath, (2013), public Universities require efficiently and collaboratively managed procurement function in order to deliver value and achieve sustainable growth (ROK, 2007).

. In Kenya, annual public-sector purchases are approximately Ksh. 22.5 billion, which corresponds to about 15 % of the GDP (Gikonyo, 2014). Out of this, the government purchases are about 4.5 billion; out of which KS 3.2billion are purchases of products and services. However, according to Manyenze (2013), public universities procurement has failed to live up to the bottom line of maximizing efficiency in the procurement process and optimizing on savings. Karjalainen, (2009) observed that operations effectiveness of public universities has fallen from 3.25 % to 1.87 % over the years as a result management related issues. Kulp, Randall, Brandberry, and Potts, (2012) reported that public universities loss 20 %to 30 % of their revenue in unrealized cost savings by not engaging in procurement best practices compared to South Africa or Thailand which according to Parmenter (2015) recorded losses of less than 5 % on an average over the same period, raising question on the function ability to drive the projected growth to meet the Government expectation of accommodating increased number of students demanding education in the institution of higher learning (RoK, 2014).

Indeed, Giunipero, (2015) advises that public universities should aspire to reduce procurement losses to no more than 5% of revenue achieve any

meaningful growth. As a result, a number of approaches have been tried with minimal success; for example, information communication technology has been theorized to have a significant influence on procurement performance in public enterprises but it full adoption has faced challenges due to high cost of infrastructure, hardware, software and rapid change in technology (Manyenze, 2013). Equally, vertical integration, notwithstanding its positive effect on lead times in the supply chain, has been established not be self-sustaining due to the concentration of efforts in a number of areas that are not the core business of public universities. (Giunipero, 2015). Accordingly, a number of public universities have favored supplier relationship management where the buyers and the suppliers collaborate through goodwill as a way of improving procurement performance, but the gains of these relationships have barely been empirically assessed (Giunipero, 2015). It is therefore in this context that this study aims to assess the Influence of Supplier management practice Practices on Procurement Performance in Public Universities in Kenya.

### 1.3 Objectives of the Study

#### 1.3.1 General Objective

The general objective of the study is to determine the influence of quality management on procurement performance in public universities in Kenya.

#### 1.3.2 Specific Objectives

i. To establish the influence of Supplier development on quality management in public universities in Kenya.
ii. To determine the influence of Total Quality Management on quality management in public universities in Kenya.
iii. To examine the influence of Performance management on quality management in public universities in Kenya.

### 2.1 Theoretical foundation and Literature

Many theories have been developed in this area of study. This study will discuss four of the theories in this field. After discussing these theories, a conceptual framework was provided in relation to the research problem.

#### 2.1.1 The Total Quality Management Theory

The study was based on total quality management theory in establishing the influence of quality management on performance of procurement in public universities in Kenya. The Total Quality Management (TQM) theory was first proposed by Eli Whitney in the 1980's (Sallis, 2014). The theory grew from existing organizational management theories partly in response to the problems of those theories as cited by (Maritim & Ochiri, 2015). The authors further argued that as a theory of organizational effectiveness, TQM theory holds that 'performance is enhanced by designing products or services to meet or exceed customer expectations by empowering workers to find and eliminate all factors that undermine product or service.' According to (Sallis,2014).

This theory promotes organizational effectiveness through supporting stakeholder satisfaction, nurturing proactive leadership and striving for continuous improvement. Maritim and Ochiri (2015) maintain that promoting TQM theory holds that "quality can only be defined by those who receive the product or service. This theory, therefore, relates to the first objective on the influence of customer-needs on the efficiency of procurement. Total Quality Management (TQM) programs, and those suppliers who are not on the most efficient list but could advance towards it by emulating the practices of their 'best pier' supplier(s) as cited by (Reza, 2013).

This theory relates to the second objective of determining the influence of Quality management on procurement performance. When the purchasing department is looking at the procurement of materials from suppliers they will have been given some guidance by the manufacturing department, research, and development, or the quality

department. This should include a variety of information about the item to be sourced, such as physical description, dimensional measurements, chemical composition, performance specifications, and standards to conform to, or even the brand name of the product (Stiglitz, 2000).

The purchasing department in public universities set know the physical attributes of the part they are required to the source. For example, if the required material public universities be made of a certain shade of a blue, then the purchasing department in public universities will be able to indicate that requirement to the potential suppliers to ensure that the specification can be met. (Stiglitz, 2000).

### 2.2.2 Procurement performance

Procurement performance is defined in the literature as the purchase of materials competitively from the suppliers as well as to enjoy the benefits of bulk buying (Frodell, 2014). Under procurement performance, the purchasing department purchases the required materials for all the departments and branches of the company (Elanchezhian, 2010).

In this study, the researcher will adopt the definition of procurement performance by (Patterson, 2015).

The author defines procurement performance as the supplier management practice of activities up to and including the making of the central/framework agreement for the whole organization to use as well as the management of that contract during the contract period. He further explains that these tasks are the responsibilities of a procuring unit in an organization. Even though the purchasing model is supply chain some aspects involved in procuring are to the individual departments. These aspects involve tasks like order processing, invoice approval and approving payments (Patterson, 2015).

Elanchezhian (2010). argues that the shift from the procurement management to procurement performance has been a global phenomenon among both private and public institutions. This shift is attributed to the benefits associated with procurement performance which include reduction in transportation costs due to bulk buying, maintenance of uniformity in purchasing, enjoying discount advantages associated with bulk buying, avoidance of duplication of efforts and so on Despite these advantages procurement performance are yet to fully meet the expectations in many parts of the world according to (Kasaya, 2013).

### 2.2.3 Quality management

According to Mateiz, (2013) Quality in its most basic sense is making the consumer/user content with their good/service and it is the obligation of the procurement manager to ensure that quality awareness is involved with each decision areas. The European Foundation for Quality Management (EFQM) proposes a model of excellence leading to improved business results. Logeek, S. (2010). states that the model is based on the concept that an organization will achieve better results by involving all people in the continuous improvement of their processes. Investors in people have drawn attention to the importance of employees' engagement for building an effective relationship between an organization and its people. Cascading the vision and direction of the organization is one of the strongest levers for generating improved performance. (Mateiz, 2013)

When the purchasing department is looking at the procurement of materials from suppliers they will have been given some guidance by the manufacturing department, research, and development, or the quality department. This should include a variety of information about the item to be sourced, such as physical description, dimensional measurements, chemical composition, performance specifications, and standards to conform to, or even the brand name of the product (Kasaya, 2013). The purchasing department must know the physical attributes of the part they are required to the source. The required material must be made of a certain shade of a blue, then the purchasing department must be able to

communicate that requirement to the potential suppliers to ensure that the specification can be met (Logeek, 2010).

### 2.2.4 Quality management

Jovanovic (2007). conducted a research on the contributions and importance of Meeting quality expectations as defined by the customer, which requires organizational effort designed to improve the quality of processes at every tool used to translate the preferences of the customer into specific technical requirements. (Jovanovic, 2007). TQM begins by identifying customer requirements, coming from marketing department these requirements are numerically scored, based on their importance, and scores are translated into specific product characteristics Comparison of the product is made with its competitors, relative to identified characteristics Specific goals are set to address identified problems.

The study by Karjalainen (2009) provides that Connoisseur Solutions Plan Quality Management Identifying quality requirements and/or standards for the project and product, and documenting how the project will demonstrate compliance. This process is important to ensure that the resulting product is of acceptable quality. This is performed in parallel with the development of the project management plan and another planning process (Barahona, 2014).

## 2.2 Conceptual Framework

A conceptual framework is a research tool used to show the general direction of a study as well as to demonstrate the relationships of the different variables that are to be studied (Public universities agenda, 2003). It also helps the researcher to develop the awareness of the situation under scrutiny.

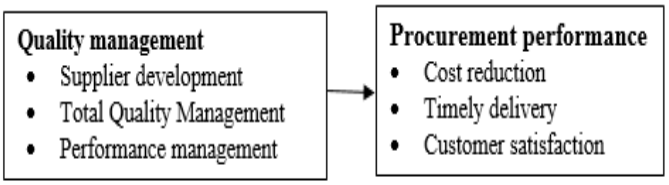


Figure 1: conceptual framework

## 3.0 METHODOLOGY

### 3.1 Introduction

This chapter covers the various methods used to carry out this study. Include the research design, target population of the study, sample and sampling techniques, description of research instruments, data collection procedure, pilot testing, reliability and validity of the instrument, and data analysis and presentation techniques while conducting the study. Research methodology was intended to provide a roadmap for the data collection exercise. According to Sekaran (2010), a central part of research is to develop an efficient research Strategy. The study targeted all the Public universities in Kenya which are made up of six user departments with a total of five hundred and twenty-five (525) members of staff the selected procurement officers in the public universities at their main campuses are chosen because all procurement main activities are carried out at the University main campusesThe data collected was analyzed using descriptive statistics as well as inferential statistics. Quantitative data was analyzed through quantitative analysis methods where the data was scored by calculating means and percentages. The Statistical Packages for Social Sciences (SPSS 22.0) software was used to analyze quantitative data. Quantitative data analysis method was used to analyses data obtained from open-ended questions. Lastly, regression analysis was used to show the relationship between dependent variable and the independent variables.

## 4.0 RESEARCH FINDINGS AND DISCUSSIONS

### 4.1 Introduction

The study sought to determine the influence of supplier management practices on procurement

performance in public universities in Kenya. Data was collected from Procurement and Supply officer, Technical Advisory team, and Quality Assurance department, Distribution Functions, Warehousing Function and Finance Department. This chapter presents the data analysis and interpretation of study findings. The research data was collected using open and close-ended questionnaires that covered the four different dimensions of supplier management being the focus of the study. This made it possible to get clear responses from the supply chain players on their perception of supplier management on procurement performance in public universities in Kenya.

### 4.4.1 Duration worked in company

From the figure 2 majority of the respondents and worked in the institution for over 16 years with 43.80% with those who have worked for a period of between 11-15 year at 35.54 % .followed by those who have worked for a period between 6 -10 years at 19.01 % finally respondents who had worked for less than 5 years at 9.92 %.the study provide that majority of the respondents were averse with supplier management practices and their benefits to the organisation hence providing relevant information to the study topic.

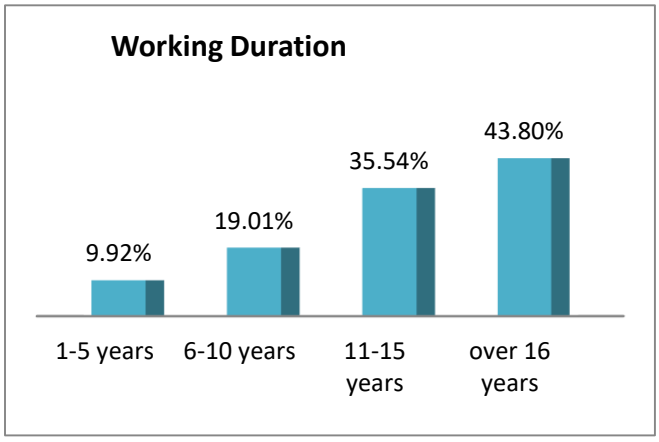


Figure 2: Duration worked in company

### 4.4.4 Job designation of the respondents

In the findings from table 1 below 33% of the respondents were supply chain officers, 18.2% were technical advisory while 18.2% of the respondents were working in warehousing function. The study shows that 18.2% of the respondents were from finance department. This implied that supplier management practices and process in all the public universities was across the broad, which involved major supply chain operational departments hence creating integration and better sharing of the information.

**Table 1: Job designation of the respondents**

| Designation | Frequency | Percent |
|---|---|---|
| Procurement and Supply | 33 | 27.3 |
| Technical Advisory | 22 | 18.2 |
| Quality Assurance | 22 | 18.2 |
| Warehousing function | 22 | 18.2 |
| Finance function | 22 | 18.2 |
| Total | 121 | 100.0 |

### 4.3 Quality management

### i. Supplier development

Table 2, illustrates that the most quality management practices were to be focused on the supplier developments with a mean of 4.21 and standard deviation most of the respondents accepted that Quality improvement both reduces reject costs while increase reliability of buyer's goods., approximately= great extent with mean and standard deviation of 3.91 ,0.92 respectively accepted that supplier development Generate competition for a high price product and service dominating market. With a score of 3.81 mean and 0.99 standard deviation greatly accepted that Timely payment and project financing for the supplier improved supplier operational capacity while creating long term relationship approach with the buyer.

Potts, (2012). Supports the findings of this study by stating that to educate suppliers in a systematic process to keep driving continuous improvement. Will increase the performance and/or capabilities of the supplier and meet the buying firm's short- and/or long-term supply needs. Moreover,

promotes on-going improvements that are intended to benefit both buyer and supplier.

**Table 2: Supplier development**

| Statement | Min | Max | Mean | Standard Deviation |
|---|---|---|---|---|
| Articulating them with the market, through capacity building | 1 | 4 | 3.57 | 0.98 |
| Quality improvement that both reduces reject costs and/or increase reliability of buyer's goods | 1 | 4 | 3.82 | 1.02 |
| Promote the incorporation of latest technologies | 1 | 5 | 4.21 | 0.95 |
| Generate competition for a high price product or service dominating market | 1 | 4 | 3.91 | 0.92 |
| Improve business alignment between the lead company and supplier | 1 | 5 | 4.27 | 0.97 |
| Timely payment and project financing | 1 | 4 | 3.81 | 0.99 |

Where 1 = Not at all 2 = little extent 3 = Moderate extent 4 = Great extent 5 = Very great extent

**ii. TQM-total quality management process**

The study asked the respondents to indicate the extent to which total quality management process affect supply relationship management on procurement performance., the study sought to know if the Measuring & tracking cost of poor supplier quality Most organizations do not track and measure the cost of poor supplier quality was aspect of supplier relationship .majority of the respondents strongly agreed at 52.07%, agreed at 28.93 % while those who were not sure at 16.53 % with only 2.48 disagreeing. Upgrading the skill set of an employee through a training and certification process approach was highly rated by the respondents with 28.93%strongly agreed with 36.36%agreeing and 26.45% not sure with only 3.31% disagreeing

According to Konings (2012). Supports the findings of this study that A Quality Management Process is a set of procedures that are followed to ensure that the deliverables produced by a team are "fit for purpose Potts (2012). States that the start of the Quality Management Process involves setting quality targets, which are agreed with the customer.

**Table 3: TQM-total quality management process**

| Statement | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Ensure quality control at supplier locations | 0.00% | 2.48% | 16.53% | 28.93% | 52.07% |
| Audit scheduling continuous improvement | 3.31% | 4.13% | 10.74% | 26.45% | 55.37% |
| Checklists flow chart control plan | 2.48% | 2.48% | 10.74% | 21.49% | 62.81% |
| Measuring & tracking cost of poor supplier quality Most organizations do not track and measure the cost of poor supplier quality | 3.31% | 4.96% | 26.45% | 27.27% | 38.02% |
| Supplier Audit Supplier Audits are one of the best ways to ensure that supplier is following the processes | 3.31% | 4.96% | 26.45% | 36.36% | 28.93% |
| Upgrading the skill set of an employee through a training and certification process | 3.31% | 7.44% | 23.14% | 39.67% | 26.45% |
| Supplier to use a manufacturer's web-based quality management | 3.31% | 4.13% | 9.09% | 34.71% | 48.76% |

Where Strongly Disagree=1, Disagree=2, Not Sure=3, Agree=4, and strongly agree=5

**4.5.6 Procurement Performance**

**i. Timely Delivery**

The respondents were asked to indicate the extent to which timely delivery affect procurement performance level From table 4 the respondents agreed that timely delivery Improve strategic supply chain relations with the suppliers with mean rating of4.07 and standard deviation of 1.02 .Timely delivery also Improvements prioritized based on potential benefits and ease of integration with the supplier which was supported my respondents mean of 4.36 and standard deviation of 0.89.majority of the as well agreed that the Supplier information, processes, and money flows that occur throughout a supply chain, both upstream and downstream determines levels of delivery hence strategic management should be put in place this was supported by respondents rating mean of 4.07 and standard deviation of 1.01

According to Berry, Towill & Wadsley (2012) supports the findings of this study various aspects of optimizing the supply chain include liaising with

suppliers to eliminate bottlenecks, sourcing strategically to strike a balance between lowest material cost and transportation, implementing just-in-time techniques to optimize manufacturing flow.

**Table 4: Timely Delivery**

Table 4: Timely Delivery

| Statement 2. Delivery improvement | Min | Max | Mean | Standard Deviation |
|---|---|---|---|---|
| Supplier information, processes, and money flows that occur throughout a supply chain, both upstream and downstream. | 1 | 4 | 4.07 | 1.01 |
| Identify areas where you can improve processes with greatest | 1 | 5 | 4.44 | 0.88 |
| Identified inefficiencies through observation and Material suppliers | 1 | 4 | 4.09 | 0.97 |
| Improvements prioritized based on potential benefits and ease of integration | 1 | 5 | 4.36 | 0.89 |
| Improve strategic supply chain relations | 1 | 5 | 4.07 | 1.02 |

Where Strongly Disagree=1, Disagree=2, Not Sure=3, Agree=4, and strongly agree=5

**ii. Cost Reduction**

The respondents were asked to indicate the extent to which cost reduction affected procurement performance From table 5, to a very great extent the respondent agreed that Making sustainability one of your business's priorities on energy, material cost savings reduced operating cost of the organization with 40.50% very great extent, 25.62%, great extent, 28.93% were moderate and only 0.83% disagreed which was insignificant level of response. Establish standard procedures and codes of conduct in the organization was considered critical with the ratings of 39.67% very great extent, 36.36%great extent, 18.18% were moderate and 2.48% disagreed with the statement.

Konings (2012). Supports the findings of this study by stating that cost management will lead to better-planned overall production and distribution, which can cut costs and give a more attractive final product, leading to better sales and better overall results for the companies involved. This is one form of vertical integration.

Table 5: Cost Reduction

| Statement | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Environmental impact of adjustments to supply chain agility, flexibility, and cost in the supply chain network. | 0.83% | 4.13% | 6.61% | 39.67% | 48.76% |
| Establish standard procedures and codes of conduct | 2.48% | 3.31% | 18.18% | 36.36% | 39.67% |
| Collect supply chain sustainability information | 3.31% | 4.13% | 20.66% | 28.10% | 43.80% |
| Making sustainability one of your business's priorities on energy , material cost savings | 0.83% | 4.13% | 28.93% | 25.62% | 40.50% |

Where 1 = Not at all 2 = little extent 3 = Moderate extent 4 = Great extent 5 = Very great extent

**iii. Customer Satisfaction**

From table below, majority of the respondents agreed that customer satisfaction affects procurement performance. This is whereby 56.20% of the respondents to a great extent agreed that Inventory & manage processes as assets resulted to low levels of inventory handling with 23.97 %of respondents great extent , only 2.48% of the respondents were against the stamen .Developing a continuous process improvement program methods for the organization to improve on the effectiveness and efficiency was to a great extent supported by the respondents with rating of 34.71% very great extent , 44.63% great extent and 9.09% were moderate and finally 2.48% were not at all agreeing with the concept approach.

According to Berry, Towill & Wadsley (2012) supports the findings of this study that the primary objective of SCM is to fulfill customer demands through the most efficient use of resources, including distribution capacity, inventory, and labor. In theory, a supply chain seeks to match demand with supply and do so with the minimal inventory.

**Table 6: Customer Satisfaction**

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Inventory & manage processes as assets | 2.48% | 5.79% | 18.18% | 31.40% | 42.15% |
| Portfolio management techniques | 2.48% | 4.13% | 13.22% | 23.97% | 56.20% |
| Develops a Continuous Process Improvement Program methods | 2.48% | 9.09% | 9.09% | 44.63% | 34.71% |
| Rigorous change management techniques | 0.83% | 8.26% | 23.97% | 43.80% | 23.14% |
| Develops a Business Process Portfolio | 3.31% | 4.13% | 17.36% | 44.63% | 30.58% |

Where 1 = Not at all 2 = little extent 3 = Moderate extent 4 = Great extent 5 = Very great extent

### 4.5 1 Regression Analysis model

A multiple linear regression analysis was done to examine the relationship of the independent

variables with the dependent variable. The $R^2$ is the coefficient of determination. The model summary table shows that three predictors can explain 70.2 % of change in quality management namely: supply base integration, relationship management, quality management and information technology Performance management, Total Quality Management and Supplier development an implication that the remaining 29.2% of the variation in Quality Management could be accounted for by other factors not involved in this study. This shows that the variables are very significant therefore need to be considered in any effort to boost Quality Management in public universities and government corporate states in Kenya.

**Table 7: Model Summary**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .843a | .710 | .702 | .497 |

a. Predictors: Performance management, Total Quality Management, Supplier development
b. Dependent Variable: procurement performance

### 4.5. 2 Beta coefficients

The established regression equation was;

$$Y = 1.694 + 0\ .457\ X1 + 0.214X2 + 0.\ 344X3 + \sum$$

From regression results in the 1.694 represented the constant which predicted value of (Quality Management) when all Quality Management effects remain constant at zero (0). This implied that public universities in Kenya productivity would be at 1.694 holding supply Supplier development, Total Quality Management and Performance management (0).

Regression results revealed that Supplier development has significance influence in procurement performance in public universities in Kenya by $\beta_1$=0.457, p=0.003<0.05, t= 5.774. The implication is that as increase in Supplier development lead to increase in procurement performance by $\beta_{1=}$ 0.294. This implied that an increase in supply base integration would lead increase in firm's performance.

Regression results revealed that Total Quality Management has significance influence in Quality Management in public universities in Kenya by $\beta_2$=0. .214, p=0.001<0.05, t= 3.195. The implication is that as increase in Total Quality Management lead to increase in Quality Management by $\beta_{2=}$ 0. .214. This implied that an increase in supply base integration would lead increase in firm's performance.

Regression results revealed that Performance management has significance influence in Quality Management in public universities in Kenya by $\beta_3$=0.344, p=0.022<0.05, t= 3.448. The implication is that as increase in Performance management lead to increase in procurement performance by $\beta_{3=}$ 0.344This implied that an increase in supply base integration would lead increase in firm's performance.

Table 8: Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.694 | .166 | | 10.222 | .005 |
| | Supplier development | .457 | .079 | .637 | 5.774 | .003 |
| | Total Quality Management | .214 | .096 | 427 | 3.195 | .001 |
| | Performance management | .344 | .100 | .350 | 3.448 | .022 |

a. Dependent Variable: procurement performance
b. Predictors: (Constant), Supplier development, Total Quality Management, Performance management

$Y = 1.694 + 0\ .457\ X_1 + 0.214X_2 + 0.\ 344X_3 + \sum$

Y= procurement performance

$X_1$ = Supplier development

$X_2$= Total Quality Management

$X_3$= Performance management

$\sum$= error

## 5.0 SUMMARY OF RESULTS, CONCLUSION AND RECOMMENDATION

### 5.1 Introduction

This chapter presents the summary of the study findings, conclusions made based on the study objectives and recommendations of the study as well as suggestions for further research.

### 5.2 Quality Management

The study examined the influence of Quality Management on procurement performance in public universities in Kenya the study it can summarized that Quality management involves overseeing all activities and tasks needed to maintain a desired level of excellence. This includes the determination of a quality policy, creating and implementing quality planning and assurance, and quality control and quality improvement. It is also referred to as total quality management (TQM). At its core, quality management (TQM) is a business philosophy that champions the idea that the long-term success of a company comes from customer satisfaction. TQM requires that all stakeholders in a business work together to improve processes, products, services and the culture of the company itself.

### 5.3 Conclusions

From the finding the study concludes that, quality management Quality control requires the business to create an environment in which both management and employees strive for perfection. This is done by training personnel, creating benchmarks for product quality, and testing products to check for statistically significant variations. A major aspect of quality control is the establishment of well-defined controls. These controls help standardize both production and reactions to quality issues. Quality control involves testing of units and determining if they are within the specifications for the final product. The purpose of the testing is to determine any needs for corrective actions in the manufacturing process. Good quality control helps companies meet consumer demands for better products

### 5.4 Recommendations

The study recommends public universities should retain long term Relationship so to ensure both the supplier and buyer continually improve on value creation. The study recommends that management should ensure the procurement manager to ensure that quality awareness is involved with each decision areas for effective quality management.

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