

**INTERNAL FACTORS AFFECTING THE PROCUREMENT PROCESS OF  
MEDICAL SUPPLIES IN THE PUBLIC HOSPITALS IN NYERI COUNTY**

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## **DEDICATION**

My research thesis is dedicated to my parents and friends for their patience and support in the period that I was carrying out this study

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

CDF	:	Constituency Development Funds
CBH	:	Central Health Board
EACC	:	Ethics and Anti-Corruption Commission
KEMSA	:	Kenya Medical Supplies Agency
KNBS	:	Kenya National Bureau of Statistics
ICT	:	Information and Communication Technology
MDDs	:	Millennium Development Goals
MOH	:	Ministry of Health
OECD	:	Organization for Economic and Cooperative Development
PPB	:	Pharmacy and poisons Boards
PPDA	:	Public Procurement and Disposal Act
PPOA	:	Public Procurement Oversight Authority

## ABSTRACT

Many organizations regard procurement as a vital process as it is used globally to acquire all the necessary resources within the set duration. However, the procurement process in most Kenyan government organizations are highly impacted upon by both internal and external factors inhibiting service delivery to the public in an effective manner especially where the supplies being procured save lives and as such cannot be treated like other commercial products. This background in Kenyan government institutions is what this study sought to examine. In particular, the study explores the internal factors affecting procurement in the Kenyan public hospitals within Nyeri County. In particular, this study examines the ethical issues surrounding the procurement process within the county. In addition, the study will, establish the effects of accountability on the procurement process determine the effect of employee's competence on the procurement and investigate the effect of ICT adoption on procurement process. The study adopted descriptive survey method. Data for this study was obtained from the four hospitals namely, The Nyeri Provincial General Hospital (level 5), Karatina District Hospital (level 4), Mukurwe-Ini Sub District Hospital (level 3) and Othaya Sub District Hospital (level 3). The four hospitals were purposively sampled. The target population was 165 employees in the hospitals. Purposive sampling technique was used to select the four medical superintendents while stratified random sampling was used to select 33 employees in the hospitals. Different departments were treated as strata. Data collection was carried out using Self-administered questionnaires and data analysis was later carried out to understand the implications of the study. Inferential and descriptive statistics were employed in the analysis of the quantitative data. The study revealed that 41.5% of change in the procurement process was explained by ethics, accountability, and ICT adoption and employee competence. Ethics affected the process to the great extent with 54.02 % change in the procurement process, followed by employee competence 33.40% then ICT adoption 29.2% and lastly accountability with 28.3%. The study concluded that ethics affected the procurement process most and therefore recommended that employees in public office should comply with the code of conduct as provided by the constitution of Kenya (CAP 6) and the PPDA. More ICT tools, especially computers should be procured and internet connections provided to enhance automation of procurement systems. The standards set by audit for filling and documentation should be strictly followed and any queries raised should be investigated. The study recommendations included the call for the county government to collaborate with other stakeholders in defining the standards and to create the necessary training capacity. The study findings will be used by the officials in the public health sector procurement departments, policy makers and regulatory bodies like EACC, PPOA, and the MOH, as they make decisions and regulations on public procurement.

## **CHAPTER ONE**

### **INTRODUCTION**

This chapter presented the study background, problem statement, research objectives, research questions, Significance of the study, Scope as well as limitation of the study. This chapter will also have the operational definition of terms

#### **1.1 Background to the study**

Globally, systems of public procurement are considered a major component of development expenditure effectiveness. Governments are only able to translate their budgets through quality service delivery done through purchases of services and goods as well as its work. The government procurement value was estimated to be US\$2,000 billion. This figure is equivalent to 30% of global merchandise trade and about 7% of global Gross Domestic Product (Organization for Economic Co-operation and Development [OECD], 2011). In addition, 10% of the most developed countries' GDP go to public procurement. In this regard, both the developing as well as the developed countries requires an effective process of procurement. This will promote fair and open competition and minimize exposure to fraud and collusion.

African countries have had a poor economic performance since their independence. Kabaj (2003) blames this state of affairs on the failure to effectively manage public resources and lack of effective regulatory frameworks. Procurement activities within most third world countries account for a large portion of the government's' expenditure. For example Malawi spends 40% of its expenditure on procurement while Uganda spends 70% (World Bank, 2010).

Lack of procurement accountability is highly to blame for the state of affairs in most African nations. The people in charge of the procurement process take advantage of their positions to act unethically. Some of the unethical practices include disclosing confidential information available to the agencies during the tender process. This information benefits either the procurement official or for another person.

All government institutions in Kenya value the procurement process thus the need for it to be done in an efficient manner. An effective procurement process should be able to ensure the current types of medical facilities are available in hospitals. In addition, the supplies should be delivered in a timely manner to the right people as per the quality standards (World Health Organization [WHO], 2007). Therefore, to ensure such services and goods are delivered at a reasonable cost, there should be proper planning and the inclusion of all the stakeholders.

The Millennium Development Goals (MDGs) clearly defines the vitality of the health sector in relation to economic growth and reduction of poverty. Three out of the eight MDGs goals directly address the health sector while an additional goal addresses access to affordable care within the third world countries. In order to ensure quality care to the public, governments ensure a good portion of its expenditure goes to the health sector. Therefore, there should be uttermost accountability within the process of procurement to ensure the set goals within this area are efficiently met and they are economically relevant (Basheka, 2008). In addition, Kenyan systems are yet to fully implement the Adoption of ICT within their processes of procurement, an undertaking that can effectively reduce unethical behavior within the process while enhancing transparency and flexibility.

Low ethical standards and behavior among the public procurement officials increases the cost of managing and controlling risks related to theft, fraud, corruption and consequently reduces confidence within the public sector (Wee, 2002). Without ethics, procurement contracts are likely to be placed to benefit the personal interests of politicians, officials or their family and friends or firms that are prepared to pay bribes. Inappropriate and ineffective negotiation during contract management as well as some deliberate failure to adhere to PPDA Act has seen the increment of fraud as well as reduced enforcement in the Kenyan procurement system. This is characterized by perceived service quality by the procurement officers to the user departments in government.

The challenges encountered within the procurement process are due to a lack of clear guidelines regarding the expected behavior by the procurement officers. The PPDA provides that all county governments procuring entities shall ensure compliance with the Public Procurement and Disposal Regulation. They should be guided by these Regulations, the Authority directions as well as the Administrative Review Board regarding the processes of procurement and disposal activities. These regulations mainly aim to make operational the Public Procurement and Disposal Act applications within the county governments. This ensures that the local industries are promoted while socio economic sector is boosted within the counties, Public Procurement and Disposal (County Governments) Regulations.

Towards hazy horizons, an opinion poll on implementation of devolution and governance reforms in Kenya report rated corruption in Kenya as the greatest risk associated with devolution respondents standing at a mere 36 %. Insufficiencies of funds, poor recruitment strategies, corruption in procurement and political interference were some of the reasons



mentioned by the 20% of the participants (Transparency International, 2010). Even with Act regulations and provisions by bodies governing public procurement processes, county governments in Kenya are still facing challenges within procurement. Nyeri County being one of the forty seven counties in Kenya is not an exception. To actualize the MDGs in regard to health sector, it is important to examine the internal factors affecting the procurement process of medical supplies in the Kenyan public sector. This study sought to address this by focusing on the effect of ethics, accountability, employees' competency and ICT adoption on the procurement process on medical supplies in Nyeri County.

## **1.2 Statement of the Problem**

Access to public health supplies and services is viewed as a global priority which has assumed a central position in international, region and national health agendas. This is because these health supplies and services are lifesaving and as such cannot be treated like any other commercial products and services. Strengthening procurement and supply management processes in the health sector is considered a key component of an integrated strategy to ensure smooth access to public health supplies.

The Kenyan Government acknowledges the vitality of equitable and affordable care in relation to the realization of the social goals that have been set. Good health and nutrition positively impacts on the human capacity and productivity, thus enhancing poverty eradication and economic growth. The Vision 2030 clearly states that the government's vision regarding care is to offer the citizens an affordable and equitable health care at the uttermost affordable standards (Transparency International, 2010). In Kenya, public procurement processes are governed by PPDA which has come up with procurement

practices for disposal of obsolete, unserviceable and surplus stores and equipment by public organizations. Even with clear guidelines and procedures in the PPDA, public procurement in Kenya has been faced with corruption, inefficiency and lack of accountability which has greatly affected on national development quality (Tan, Chong, Binshan & Uchenna, 2009).

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The general objective of this study was to determine the internal factors impacting on the process of medical supplies within the public hospitals in Nyeri County.

#### **1.3.2 Specific Objectives**

The specific objectives of the study were to:

- i. Establish the influence of ethics on the procurement process of medical supplies in the public hospitals in Nyeri County.
- ii. Establish the influence of accountability on the procurement process of medical supplies in the public hospitals in Nyeri County.
- iii. Determine how employees' competence influences the process of medical supplies procurement within public hospitals in Nyeri County.
- iv. Investigate the influence of ICT adoption is on procurement process of medical supplies in the public hospitals in Nyeri County.

#### **1.4 Research Questions**

The current research was guided by the following research questions:

- i. What is the influence of ethics the procurement process of medical supplies in the public hospitals in Nyeri County?
- ii. How does accountability influence on the procurement process of medical supplies in the public hospitals in Nyeri County?
- iii. What is the influence of employees' competence on the procurement process of medical supplies in the public hospitals in Nyeri County?
- iv. How does the ICT level impact on the process of procurement of medical supplies within the Nyeri county public hospitals?

#### **1.5 Significance of the Study**

This study was expected to contribute to the current body of knowledge in the public health sector in terms of the implication of the internal factors affecting the procurement process.

The study was also to be of direct benefit to the officials in the public health sector procurement departments, the various head of departments who interact with the procurement departments, and the government policy makers and regulatory bodies like EACC, PPOA, MoH, CBH, KEMSA and HMIS.

The study was to also indirectly benefit the medical suppliers, public and private sponsors in the public health sector and the end users of these health services. Lastly researchers and scholars may gain from the findings of this study as they carry out research in related areas. This study may as well trigger general awareness to scholars in relation to the internal factors affecting the procurement process.

## **1.6 Scope of the Study**

The study was carried out in the government funded health facilities in the County of Nyeri. To assess the effect of the internal factors on the procurement process of medical supplies in public health facilities in Nyeri County, this study focused on the four government funded hospitals. The four health facilities were; The Nyeri Provincial General Hospital (level 5), Karatina District Hospital (level 4), Mukurwe-Ini Sub District Hospital (level 3) and Othaya Sub District Hospital (level 3). This is because these facilities are guided by the PPDA which provide guidelines and regulations for all their activities. In addition, they serve densely populated areas and therefore there is need to ensure that procurement of works, goods and services is done in the right manner to ensure that health services to the residents are steadily offered.

The study investigated how the internal factors, Ethics, Accountability, Employees' competencies and ICT Adoption affect the procurement process of medical supplies in Nyeri County. In ethics, the study established how conflicts of interests, collusion and corruption and abuse of office affect the procurement process of medical supplies. In accountability, the study focused on documentation and filing, internal and external audits queries and restriction of public officers from participating in supplies affect the procurement process of medical supplies.

The study also investigated how employee's competency affected the procurement process by focusing on the effects of professional qualification, in service training and work experience on the procurement process of medical supplies. In ICT adoption the study focused on how ICT knowledge, e tendering and electronic transactions affected the procurement process of medical supplies in the public health sector in Nyeri County.

Lastly, the study investigated the procurement process through focusing on defining procurement requirements and needs, assessment of procurement options, selecting suppliers, contract awards and delivery of the procured goods.

### **1.7 Limitations of the Study**

The research was limited to just Nyeri county respondents which a single county within a country that has forty seven counties. This may have limited the study application as well as generalization of its findings to other sectors other than those that operate under the public procurement Act and regulations. In addition, the application of the research findings is also limited to the public procurement departments only. Therefore, the research findings cannot be generalized to other departments in the public sector.

### **1.8 Definition of terms**

**Internal factors:** In this study, this term will refer to the competency, accountability adoption of ICT and ethical practices.

**Ethics:** This term refers to what is considered morally correct and wrong in regard to the process of procurement by professionals. In this regard, ethical practices involve integrity, honesty, diligence, trust, fairness, respect, probity and consistency (Wee, 2002).

**Accountability:** This is the organizational or individual obligation to be accountable for any decisions or actions taken and take responsibility for such. The results of such activities and decisions should also be disclosed in due process. Accountability entails portray

responsibility regarding any property or money entrusted on an organization of individual (Segal & Summers, 2002).

**Employees' Competence:** These are various theoretical, practical and cognitive skills as well as values that positively impact on performance. It is also the ability or qualification to carry out a specific activity successfully. A good example in life management is the ability for emotional intelligence and negotiation influencing skills.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The relevant literature regarding the issues surrounding the process of procurement within public medical facilities in Nyeri County was reviewed in this chapter. The review included empirical reviews, theoretical review and conceptual frameworks as well summary.

#### **2.2 Theoretical Review**

In this study two theories were adopted to help examine the internal factors affecting the procurement process of medical supplies in the public hospitals in Nyeri County.

##### **2.2.1 Resource Based View**

The RBV investigates both practices and strategies of a firm based on the available internal resources. In this regard, competitive advantage is attained through the unsubstituted, inimitable, rare and valuable internal resources (Walker & Brammer 2003). Procurement being one of the vital functions in an organization, plays a role in acquiring the all the needed resources at the time and in the amounts required. The RBV therefore is useful because it can be used to measure and explain how the resources of an organization affect the process and practice of procurement. By ensuring accountability in the procurement process, an organization is able to build and sustain its competitive advantage through ensuring that the procured resources are well allocated and issued to the relevant user departments.

With ICT Adoption, public procurement entities can invest in research and development to come up with practices and technologies that are both environmentally and socially friendly. This could also increase transparency and accountability. Public procurement officials are obliged to protect and ensure the utilization of all the resources in their institutions through upholding ethical values in their practices and ensuring those that carry out these practices are competent enough. This will reduce the cases dishonesty and misappropriation of resources. Institutions with the ability to implement procurement practices and handle the internal factors around the procurement are able to easily save recourses and therefore provide the required services and products in the amounts and time required. The RBV therefore implies that resources within any organizations can be used to strengthen competition through the policies and strategies.

Otieno (2004) maintains that public institutions procurement irregularities possibly accounts for the largest loopholes in the mismanagement of public resources. This means that RBV can be used to measure the capabilities of the hospitals through internal resources (in this case the medical supplies) which are acquired through procurement. Procurement in the hospitals can be enhanced by ICT adoption, high ethical standards, employee competence and accountability. Given the role of procurement in the management of resources in public entities, the study examined the effects of ethics, accountability, employees' competence and ICT adoption on the procurement process of medical supplies in Nyeri County.

### **2.2.2 Person-Situation Interaction Theory**



The study adopted the Person-situation interaction theory by Trevino. The theory stipulates that explanation of organizations ethical decisions is easily explained by the interaction of situational and individual components. The main reason for such an explanation is because human beings usually react to various ethical dilemmas through cognition that is highly influenced by the stage of cognitive development. The stage of an individual cognitive moral development also dictates the manner of thinking in terms of ethical dilemmas and the decision to make in relation to what they regard as morally right or wrong. In this regard, officials within the procurement department take actions that are dictated by their individual factors, the culture of their organizations and situational milieu. The personal factors include individual strength, ego, locus control and field dependence. Situational factors include the context factors of the immediate job like job related pressures and reinforcement.

In this sense, procurement managers' ethical decisions are largely impacted upon by these three factors. The factor of organizational culture entails normative structures, obedience to the superiors, referent others as well as responsibility for any outcomes. Therefore, how public officials will react to issues like collusion, conflicts of interest and abuse of office will be determined by the factors mentioned above. (Contract Monitoring Kenya Network [CMKN], 2012) revealed that unethical practices mainly result to public institutions procurement malpractices within Kenya. These malpractices in the procurement process result in public funds mismanagement in frauds, extravagance and favoritism. The study examined the effects of ethics, accountability, employees' competence and ICT adoption on the procurement process of medical supplies in Nyeri County.

## **2.3 Empirical Study**

### **2.3.1 Procurement Process**

Procurement is the process of acquisitions of services, goods and works. The beginning of procurement is when an organization makes decisions regarding a need and comes up with a list of procurement needs. This process proceeds through assessment of risks, evaluation of any alternative solutions, awarding of contracts and services or property payment and delivery. Any ongoing contract management on options considerations associated with contract becomes a part of the procurement where applicable. The process of procurement proceeds up to the eventual property disposal after it has run out of use (Waters, 2004).

Kenya Institute for Public Policy Research and Analysis [KIPPRA] (2006) observes that good governance entails procedural and ethical procurement of public policies. These are actually the very basic requirements of proper governance. According to Otieno (2004), any form of irregularities in the public procurement process emanates from the misappropriation of public resources. Thai (2004) argues that practices of good public procurement are basically about accountability, a process that allow for effective measures to be put in place enabling entities of procurement to make use of the limited resources in a cost effective manner. These procurement officers should be made to realize that they are always answerable to the public.

Every government delivers services to the general public through procurement. May it be healthcare materials procurement or distribution of the same within the district hospitals of

procurement of school materials, the government has to ensure accountability. In order to meet the needs of basic education, the government procures text books as well as other forms of instructional goods. When resources are efficiently allocated and delivered in a timely manner, then there is an assurance of efficient service delivery.

The whole procurement process should also uphold integrity through ensuring elimination of all malpractices. In addition, the people responsible for procurement should make informed decision-making where government institutions make decisions based on accurate information and ensure the meeting of all the requirements. In addition, the process of procurement should respond to expectations, aspirations and needs of all the recipients of the services, in this case the citizens. Finally, there is need for transparency to enhance openness on procurement policy and its delivery (World Bank, 2003).

### **2.3.2 Ethics and the Procurement Process**

Wee (2002) defines ethics the moral values and principles that guide people as they carry out their daily chores. In this case, ethical behavior entails all aspects probity, integrity, honesty, trust, diligence, fairness, respect, trust and consistency. Ethical behaviors also entails avoiding all forms of conflict of interest in service delivery and avoiding taking advantage of one's position and influence.

CMKN (2012) asserts that unethical practices contribute in a major way to procurement inefficiencies in Kenyan public institutions. This practice culminates in massive misappropriation of the public funds through fraud, favoritism and extravagance. A

CMKN report dubbed Reforming public contracting: *Giving Kenyans value for money* that said there rampant unethical practices in public procurement.

Kakwezi and Nyoko (2007) argue that corruption in Kenya is accompanied with massive financial arrangements that combine to create a security related procurement system as well as commercial debt procurement as well as political system financing. According to Mathenge (2012), management of procurement in the present day Kenya lacks an ethical inclination. Therefore, the Kenyan procurement process should embrace ethical considerations in the process in order to re-invest itself.

Alison and Christopher (2002) note that the culture of secrecy within the Kenyan procurement process is a major barrier in fighting corruption. In addition, the procurement process is also related to the government functions. Various unethical practices in Kenyan public procurement process include corruption and conflict of interest. These malpractices majorly damage the purchasing relations and the also destroy the relationships between the suppliers and various company's departments.

According to a study by OECD (2011), collusion and corruption are distinct problems within public procurement and these problems result from unethical practices like conflicts of interest. At best, these issues are viewed as threats to commitment to public procurement integrity. Due to unethical practices within the process of procurement in Kenya, the private entities and the general public is denied their natural resources and taxes economic benefits. There are no studies on how ethics affects the procurement process in the Kenyan public health sector; this study will seek to bridge this gap by examining the effects of ethics in the procurement process in the public health sector in Nyeri County.

### **2.3.3 Accountability and the Procurement Process**

Segal and Summers (2002) note that accountability is human capability and obligation to effectively realize goals regarding the public service and provision of public needs. When organizations and individuals are made to account for their actions, then a country can achieve a process of procurement that ensures value for money delivery and this becomes the basis for service delivery that is efficient. Different scholars have carried out various studies that relate to accountability in the procurement process.

Basheka (2008) looked into the association of accountability and procurement planning within the procurement systems of the local government within Uganda. The study findings proved that there exist a relationship between Ugandan local government accountable procurement systems and procurement planning. Basheka and Mugabira (2008) expanded on issues regarding in-service training and procurement qualifications in regard to procurement professionalism that positively impact on procurement outcomes within Ugandan public procurement systems. This study showed that any properly functioning public procurement system revolves around some vital elements like professionalism, accountability, transparency, strong legal as well as institutional frameworks. In addition, there must be adequate resources in the process.

According to Kabaj (2003), public official's accountability is a critical element in fighting corruption and creating a conducive environment for a public sector that is vibrant. This is because accountability challenges emanate from government ignorance of legal provisions,

constitutional and social ethics in handling public affairs. However, the studies mentioned here failed to examine the role of accountability in Kenyan public health sector procurement processes. Therefore, this study will look into the effects of accountability on process of procurement within Nyeri County.

#### **2.3.4 Employees Competency and the Procurement Process**

Arowsmith and Trybus (2003) note that procurement personnel should ensure the inspiration of confidence and make sure the stakeholders are trustworthy and credible. All the stakeholders in the procurement process should agree with the officials regarding the companies chosen for supplying goods due to their competency and reliability. Procurement is one of the supply chain job categories lacking a clear role to be played.

Coming up with a clearer point of reference for job family within the functions of supply chain and in particular in procurement and highlighting the needed competencies will ensure efficiency in the whole process.

Gordon (2006) procurement officers' competencies are classified in two ways; by the process and by criticality. The process of procurement is further widely defined to encompass the phase of planning that preceded the real process and the contract phase that follows procurement. There are four phases of procurement namely; planning and choosing the procurement style, phase of competition, phase of decision making and the last phase of contract.

### **2.3.5 ICT Adoption and the Procurement Process**

There are many operating challenges in modern governments met by the use of ICT that ensures there is efficient service delivery to visitors, residents and businesses. ICT also enhances the internal efficiencies as it minimizes that cost and ensures an increase in productivity. In order to promote economic development, public entities through ICT have improved their communication infrastructures. Abouzeedan and Busler (2002) argue that improved communication infrastructure also positively impact on new businesses and residents while offering constituents excellent service. The traditional methods of doing business required the buyers to use faxes, phones and e-mails to communicate their needs and manage forecasts.

Manual reports and spreadsheets are exchanged by trading partners making the whole process both cumbersome and slow. These methods are no longer able to meet the needs of today's enterprises that are demand driven, especially within the public sector where the basic role is service delivery to the public. Various studies have been carried out regarding the effect of ICT in businesses. There is a connection between productivity levels and the introduction of ICT within developing countries. India and Brazil have shown econometric data revealing a connection between productivity, ICT and capital. This is after the two countries have controlled other factors like fixed effects that are firm specific (Rakesh, Simon & Neacio, 2006).

Gunela and Tibben (2013) did a study that evaluated the role played by ICT in improving procurement within Australia. The research results showed that IT purchasing by the government largely influences the increased affordability, availability and accessibility of

ICTs to Australians, thus adding the digital inclusion within the country. The study also points out the main aim of ensuring ICT accessibility within Australian public procurement is to ensure added equitable access to office equipment that are ICT driven. These equipment include computers systems and phones among the public servants. However, research showing the effect of ICT in the Kenyan procurement processes in its public health sector is lacking. In this regard, this study will evaluate the impact of ICT on the procurement process in public health facilities in Nyeri County.

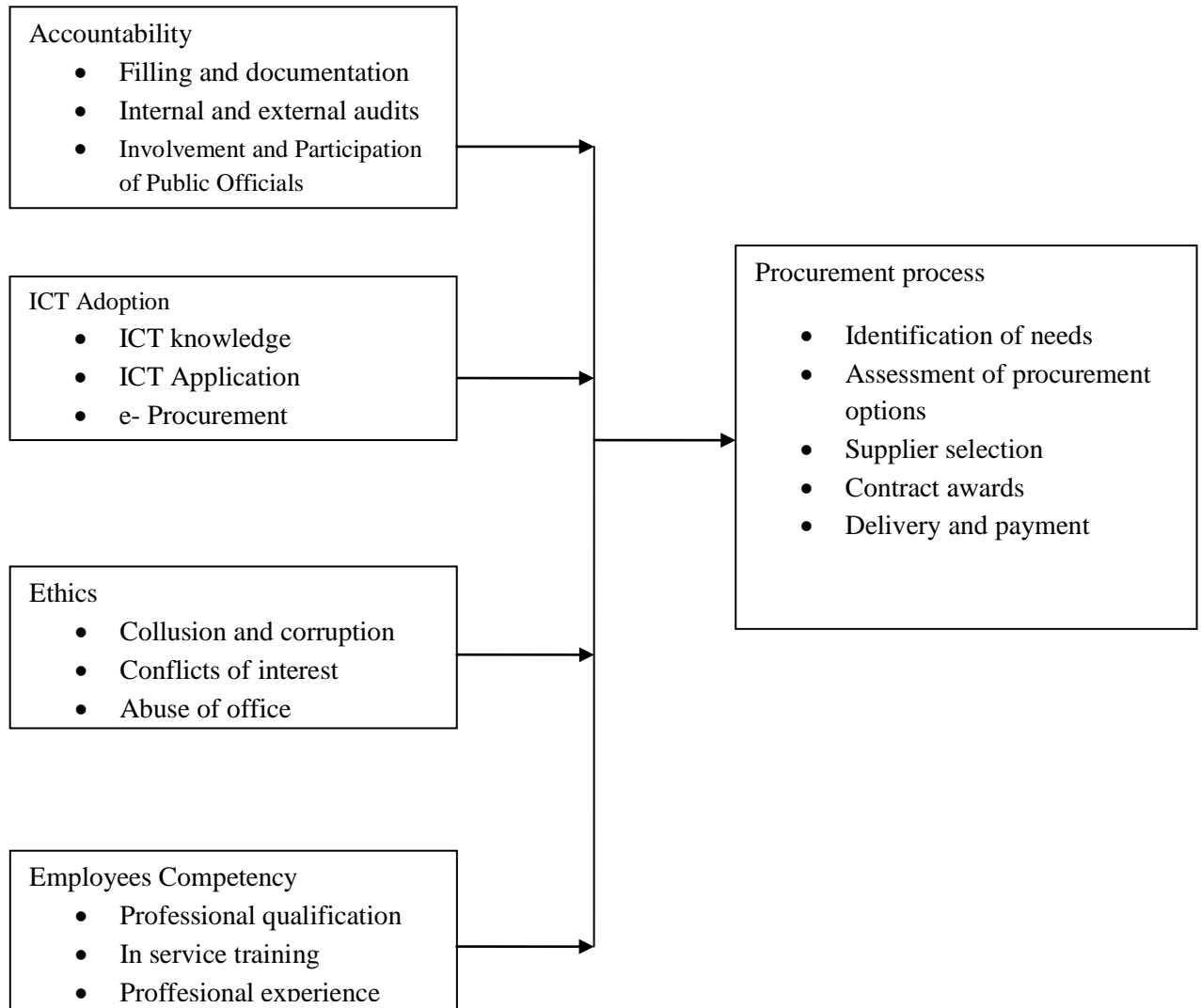
#### **2.4 Conceptual Framework**

The framework explained the relationships between the dependent variables; Ethics, Accountability, Employees competence and ICT Adoption with the independent variable; Proper documentation and filing and justification of results by auditors and monitors create a sense of responsibility and affect the procurement process. Involvement of officials in the process of supply affects the assessment of procurement options, supplier selection and contract awards. Collusion, Conflict of interest and abuse of office with respect to procurement creates discrimination which in turn discourages open competition. This also causes undue delays in developing bidding documents and inviting offers, selecting suppliers, contract awards and delivery and payment of goods.

Information Communication Technology adoption in the procurement department as an investment enhances research and development, raising orders, receiving requisitions and purchasing all the organizational equipments. In addition, e-procurement leads to improved procurement processes and increases transparency through usage of e-sourcing, e-tendering



and e-payment. To be able to accurately identify procurement needs, assess procurement option and evaluate bids, employees should have the necessary professional qualifications. In addition to these qualifications, the employees should be regularly trained to increase their competence and should have relevant work experience. Satisfaction of employees turn increases the productivity of employees.



**Independent Variables**

**Dependent Variable**

**Figure 1: Conceptual Framework**

**2.5 Summary/ Research Gap**

Plenty of studies have been carried out both internationally and locally regarding the process of procurement, thus providing plenty of empirical literature. Nevertheless, a good number of those studies were carried out in other countries that have different economic, demographic and environmental standards from Kenya. In this regard, the results acquired from these studies cannot be applicable in this study. Besides, these studies ignore the internal factors that impact on medical supplies procurement processes in the health sector within Kenya.

In order to fill the research gap, this study seeks to establish the impacts of ethics in medical supplies procurement processes within Nyeri County. The research will also establish the impact of accountability in the procurement process of medical supplies in Nyeri County, Determining the effect of employees' competence on the procurement process of medical supplies in Nyeri County and Investigating how effective ICT adoption is on procurement process of medical supplies in Nyeri County.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter presented the study area, sampling design, target population, research design, data collection instruments and analysis as well as ethical considerations.

#### **3.2 Research Design**

The study adopted the survey research design. Here, the researcher describes people's responses to questions about a phenomenon or situation with the aim of understanding the respondent's perception from which truism is constructed. In survey research design, specific variable, phenomena or perceptions regarding a situation are described. In addition, the views are generalized as representations of the whole population.

A survey has some predetermined questions presented to a sample population. This sample population therefore represents the entire population of interest, thus generalized to reflect the stand of the whole population from which the few respondents (sample) is drawn. Therefore, the researcher can generalize the findings to represent the entire population. In this study, data collected from the sample size was taken to represent the views and opinions of the total population. The survey research design was therefore fit for this study.

#### **3.3 Study Area and Target Population**

##### **3.3.1 Study Area**

The research site of this study was Nyeri County. Nyeri County is one of the forty seven counties formed under the new constitution. The county is about 150 km north of Kenya's

capital Nairobi. This is a country that is within the fertile central highlands, thus the dense population. Nyeri country lies between the western slopes of Mt Kenya and the Eastern parts of the abraide ridges. The county is 3,337 square kilometers and it borders Nyandarua County on its west, Kirinyaga County on its eastern side, Meru County on the north east, Laikipia County on the northern side and Murang'a County on the southern side.

In 2009, the approximate population of Nyeri County was 693,558 people (Kenya Bureau of Statistics [KNBS], 2009). Nyeri County is one of the key producers of agricultural products due to the favorable climate in that region as it lies at the windward side of the Mt Kenya. With devolved government systems, it is important to safeguard the economic potential of the residents of this county. Nyeri County has a total of twelve hospitals. Government funded hospitals include; the Nyeri Provincial General Hospital, Karatina District Hospital, Othaya Sub-District Hospital and Mukurwe-Ini Sub District Hospital. Mission hospitals in Nyeri county are; PCEA Tumu Tumu, Consolata Hospital and Mary Immaculate Hospital in Mweiga.

Private hospitals in the country include Jamii Hospital, Outspan hospital, Nyeri Srgicare Centre, Mt. Kenya Hospital, and Waka Ruring'u Maternity. In addition, there are seventy four dispensaries and health centers in the county. These will be excluded from the current study because of their small size and the quantities of medical supplies distributed to them are very small. Further they do not have administrative departments like procurement, human resource, pharmacy, wards and others. This is because some of these are run by the Ministry of Health and the Constituency Development Funds.

HIV prevention, care and treatment activities, Integration of Reproductive health solutions, Malaria prevention and treatment, Tuberculosis (TB) management and management of non communicable diseases (NCDs) are the top health challenges in Nyeri County. Most of the residents in Nyeri County depend on public health facilities for health care. Meeting the health care needs for residents is achievable if these health care facilities can ensure steady service delivery through proper procurement processes.

### **3.3.2 Target Population**

In the current study purposive sampling technique was used to select the four main public hospitals in Nyeri County. This is because the four are public hospitals and all their procurement processes are regulated by the PPDA of Kenya. The target population in this study included the health workers and officials from different management departments in the four public hospitals. Purposive sampling was conducted to select key informants who included the four medical superintendents from the four hospitals.

Medical superintendents will be targeted because they have absolute authority over every aspect of the hospital, they supervises daily functions at a health care facility. These include budgeting, patient care, and human resources needs and purchasing new equipment. The study targeted 165 employees from the four public hospitals. These employees were drawn from different levels of management positions in the different departments they work. Table 1 shows how the target population.

**Table 1: Target population**

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<b>MoH Departments</b>	<b>Target Population</b>				<b>Total</b>
	<b>Nyeri Level 5</b>	<b>Karatina Level 4</b>	<b>Othaya Level 3</b>	<b>Mukurueni Level 3</b>	
Procurement/Stores	8	5	5	5	23
Finance/cash office	6	5	4	4	19
Personnel Management	7	5	3	3	18
Pharmacy	8	7	5	5	25
Laboratory	8	6	5	5	24
Out-patient Department	10	8	5	5	28
Wards	9	7	6	6	28
Total	56	43	33	33	165

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### **3.4 Sample Size Determination**

This research used stratified random sampling method in choosing a sample of 33 respondents from 165 target respondents in the four public hospitals in Nyeri County. The seven functional departments of the four hospitals were stratified then the researcher carried out a simple random sampling in proportion to the respondents within a strata. Stratified random sampling aims at achieving a representation from the populations' sub groups that is desired.

Mugenda and Mugenda (2003), a 20% sample is supposed to represent a population of 500 people or less. In this regard, any population that is either 500 people or less is qualified to take part in a census research. Therefore, justification of any sample size is a 20% population as this reduces redundancy and duplicity of the acquired data. In addition, a 29%

sample size is big enough to acquire any comprehensive data. The researcher picked other respondents randomly from the respective departments as shown in the table below

**Table 2: Sample Size**

MoH Departments	Sample Size				Total
	Nyeri Level 5	Karatina Level 4	Othaya Level 3	Mukurueni Level 3	
Procurement/Stores	2	1	1	1	5
Finance/cash office	1	1	1	1	4
Personnel Management	1	1	1	1	4
Pharmacy	2	1	1	1	5
Laboratory	2	1	1	1	5
Out-patient Department	2	1	1	1	5
Wards	2	1	1	1	5
Total	12	7	7	7	33

### 3.5 Data instruments and methods

The main instruments used for data collection in this study are questionnaires. Questionnaire method was preferred as it has both close and open ended questions for proper application of both qualitative and quantitative data collection. In this study, questionnaires were used to acquire data relating to the effect of ethics, accountability, employee competence and ICT use in medical supplies procurement process in Nyeri County.

Cooper and Schindler (2006) assert that questionnaires are an effective method of collecting data especially on large samples and can easily be analyzed. This study required plenty of data, thus the preference to use questionnaires which was divided into three sections, A, B and C. in Section A, the researcher acquired data regarding the demographics

of the respondents. In section B, the researcher acquired data regarding the impact of ethics, accountability, employees' competence and ICT adoption of medical supplies procurement process of in Nyeri County.

Key informant interview guide were developed to provide the necessary qualitative data from the respondents drawn from each of the hospitals. Qualitative data was necessary in a study to supplement the quantitative data. Key informants are members of a group or stakeholders in the issues under study who have special knowledge and perceptions that are not otherwise available to a research. Gall, Gall and Borg (2003) note that the advantage of this instrument in the current study was that, it could be used to cross-validate research findings obtained by using the questionnaires.

### **3.6 Data Collection Procedure**

A number of steps were undertaken to collect the actual data. First, the questionnaires and the items in the key informant interview were cross checked to ensure that they contain what the objectives intend to achieve. This step was followed by subjecting these instruments to a pilot run. After being granted permission by the authorities, questionnaires were hand delivered to the respondents in the seven departments in the four government hospitals in Nyeri County. The researcher also conducted the interviews for the key informants. The interviews were conducted on one- to- one basis. During the interviews, the researcher made short notes as guided by the research objectives.

### **3.7 Pilot Study**

According to Murray (2003), a pilot study is considered vital in studies as it assist on identifying research items' ambiguities as well as vague questions for improvement. The



researcher carried out a pilot study before the actual study from one selected department out of the seven departments in one of the four government hospitals targeted in this study. One of the departments in the hospital's department was randomly selected using simple random technique. However, the sample of respondents to be used in the pilot study was excluded from the main study.

### **3.7.1 Reliability of Instruments**

Orodho (2005) notes that the reliability research instrument determines the extent to which a specific instrument can consistently offer similar results after repeated trials. In order to determine the reliability, a single test was administered to the selected heads of departments. The scores from the items were correlated and cronbach's coefficient alpha computed. Mugenda and Mugenda (2003) found that computation of reliability co-efficiency is carried out to determine the reliability of data. A reliability coefficient of 0.80 or greater means that the acquired data is highly reliable. In this study an overall reliability analysis was conducted on the survey instrument and it was considered reliable at ( $\alpha = 0.837$ ).

### **3.7.2 Validity of Instruments**

Bridget and Lewin (2005) maintain that validity is the extent to which the test items or sample represent contents of the test aims at measuring. Content validity is used to measure the ability of data acquired using a specific instrument to represent a particular content or domain of a specific concept as planned. In this study, when constructing the questionnaire, the researcher ensured validity and quality control. The researcher carried out a Face validity that involved subjection of research instruments for checking by the experts. This

was done to ensure the instruments could measure content validity where what was intended is measured.

The experts also ensure that the instruments are designed as per their respective measurement indicators and study variables. Therefore, every research was relevant for each variable construct, a fact that was ensured through the Content Validity Index calculations. This study's construct validity was maintained by ensuring the questions were restricted to variables conceptualization as well as ensuring that variable indicators were falling within a similar construct.

### **3.8 Data analysis and presentation**

Mugenda and Mugenda (2003), data consist of the figures and facts that relate to a certain phenomenon under study. On the other hand, data analysis is the complete process that begins with data collection up to result interpretation and processing stage of the study (Kothari, 2004). After collecting the questionnaires, the researcher read through each to ensure that all of them had been returned and every question had been addressed.

The researcher analyzed the qualitative data by acquiring all the detailed data regarding the phenomena under stud. Then there was an establishment of trends and patterns on the basis of the acquired data. This involved interpretation of the mass information acquired in the study by proper data organization and coming up with themes and categories. Then the researcher organized the additional open ended questions as well as key information interviews into themes relevant to the study. All the research findings were presented in the form of a prose.

The researcher used inferential and descriptive statistics in this study in qualitative data analysis gotten from the closed ended questions. Descriptive tools used in qualitative data analysis in the study include measures of central tendency, percentages, frequency distributions, as well as variability measures. All the data from descriptive analysis results was presented in both tabular and text forms. Figures from the result tables were as well used in result presentation.

Additional multiple regression analysis was employed in establishing any association between the independent and dependent variables within this study. Orodho (2005) maintains that multiple regression aimed at determining whether some variables worked together in predicting a certain dependent variable. According to Kothari (2004), in multiple regression, explanations in the variations found in dependent variables can be explained using multiple independent variable.

The multiple regression models assumed the form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where; Y = procurement process,  $\beta_0$  = the intercept

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  = regression coefficients (shows the change in the expected value of Y for a unit change in X)

$X_1$  = Ethics,

$X_2$  = Accountability

$X_3$  = ICT adoption

$X_4$  = Employees' competence

$\varepsilon$  = random error

For every value of  $\beta$  (slope), there was a determination of the significance level. The multiple regression overall fit had its basis on the F-test while the basis of F-test was ANOVA test. The overall fit common measure employed in this study was the coefficient of determination or  $R^2$ , which is based on ANOVA table's sum of squares. Lastly, the researcher run the Pearson correlation,  $r$ , to find out the relationship between the dependent variables (procurement process) and independent variable.

### **3.9 Ethical considerations**

In research, ethical considerations involve ensuring that the research undertaking does not harm anyone in any way. This study ensured that the used data collection method was never invasive. The questionnaires gathered data that was only used for academic use only. Lastly, the researcher uphold the recommender ethical considerations by seeking the requisite permission from the office of the president, county council of Nyeri and Karatina University prior to the data collection.

## **CHAPTER FOUR**

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

#### **4.1 Introduction**

This chapter entails the interpretation and presentation of all the data acquired from Nyeri County's public hospitals regarding the internal factors affecting the procurement process of medical supplies. The data was analyzed to determine how accountability, ethics ICT adoption and employee competence affect the procurement process. The research used descriptive and inferential statistics. The researcher used the regression analysis in determining the dependent and independent variables relationship.

#### **4.2 Respondents Background Information**

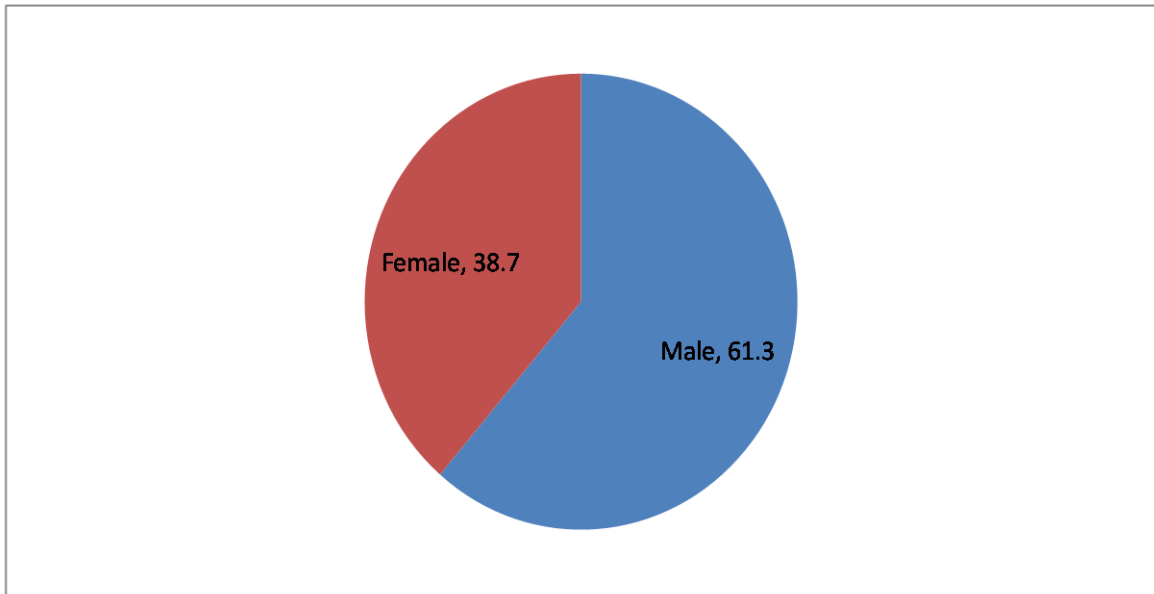
This section presents the response rate and the background information of the respondents on their gender, level of education and years of service.

##### **4.2.1 Response Rate**

The sample size included thirty three (33) respondents who were randomly selected from seven key departments in the four public hospitals and four (4) key informants who were the medical superintendents. This sample was 20 % of the target population of 165 respondents. Out of the thirty three (33) questionnaires that were distributed to the respondents, twenty eight (28) were filled, returned and the response was analyzed. The response rate was 84.85% which according to Mugenda & Mugenda (2003) a response rate of 70% and above is very good. This is mainly because researcher used drop and pick method in the administration of the research instruments.

#### 4.2.2 Gender of the Respondents

The study established the gender of the respondents drawn from the four public hospitals in Nyeri County. It was found out that 61.3 % of the respondents were male while 38.7 % were female. This was because most female staff members were in the medical departments and not administration.



**Figure 2: Gender of the Respondents**

#### 4.2.3 Respondents Level of Education

The study investigated the respondents' level of education and revealed that 46.4 % of the respondents had a bachelor's degree, 35.7 % had a diploma certificate, and 14.3 % of the respondents had a Masters degree while 3.6 % had secondary education. The implication of this data is that most of the participants had Bachelor of degree level of education, diploma level education and Master's Degree respectively as opposed to Master's Degree,

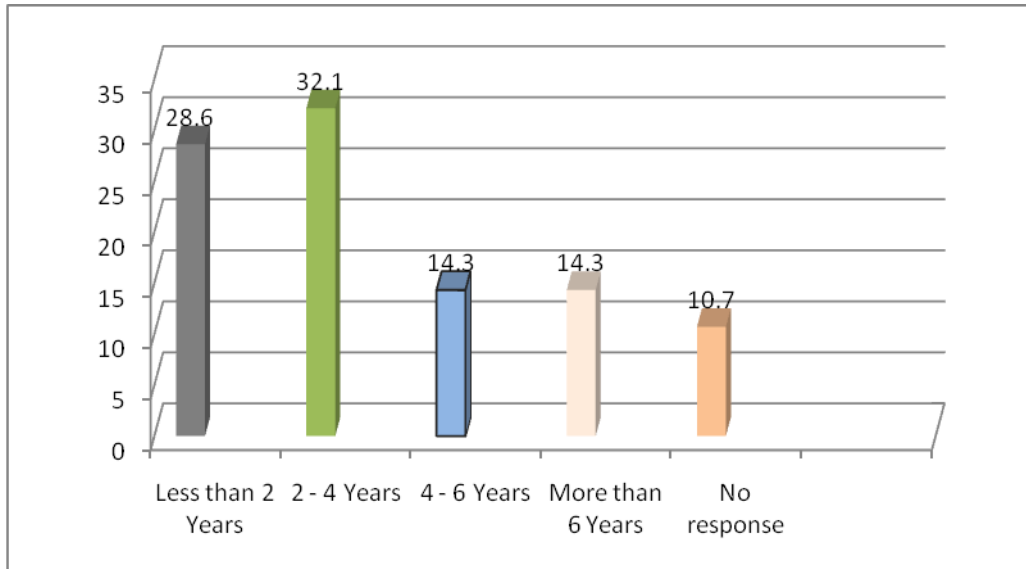
Bachelor’s Degree and diploma levels. For example only a mere 14.3% of the participants had a Master’s degree.

**Table 3: Level of Education**

<b>Level of education</b>	<b>Frequency</b>	<b>Percentage</b>
KCSE	1	3.6
Diploma	9	35.7
Bachelor's Degree	13	46.4
Master's Degree	4	14.3
Total	28	100

**4.2.4 Respondents Years of Service in the Hospital**

The study assessed the respondents’ years of service in their current hospital, the findings revealed that 60.7 % of the respondents had worked for 4 years and below with majority (28.6 %) having worked for between 2-4 years. 14.3 % had worked for 4 to 6 years while 14.3 % of the respondents had worked for more than 6 years. However 10.7 % did not indicate their duration of service in the organization. This indicated that most of the respondents had worked for less than four years in their departments which implied that the majority of the respondents had useful knowledge on the dynamics of procurement operations and were in a better position to gauge the effects of the internal factors on the procurement process of supplies in their institution.



**Figure 3: Respondent's Years of Service**

### **4.3 Ethics and the Procurement Process**

The study investigated the effect of ethics on the procurement process of medical supplies in the public health sector in Nyeri County. To investigate this, the study focused on components of unethical practices like conflicts of interest, collusion and abuse of office.

#### **4.3.1 Knowledge of Unethical Practices**

The study examined if the respondents were aware of any malpractices/unethical practices in the procurement process in their organization. The study established that 78.6 % of the respondents admitted that they were aware of some unethical practices in their organization, 10.7 % who said they were not aware of such while 10.7 % declined to indicate their response.



**Table 4: Knowledge of unethical practices**

<b>Knowledge of unethical practices</b>	<b>Frequency</b>	<b>Percentage</b>
No	3	10.7
Yes	22	78.6
No response	3	10.7
Total	28	100

#### **4.3.2 Collusion**

The research examined the number of times there were case of collusion reported per year. The findings revealed that 42.9 % of the respondents indicated that cases of collusion occurred 6-10 times per year, 21.4 % indicated 0-5 times per year, 21.4 % indicated 11-15 times and 3.6 % indicated that there were above 15 times reported while 3.6 % of the respondents indicated that there were reported 18-23 times in a year. However, 10.7% of the respondents did not indicate their response.

**Table 5: Number of Occurrence per Year**

<b>Number of occurrence per year</b>	<b>Frequency</b>	<b>Percentage</b>
0 – 5 times	6	21.4
6 – 10 times	12	42.9
11 – 15 times	6	21.4
Above 15 times	1	3.6
No response	3	10.7
Total	28	100.0

#### **4.3.3 Conflicts of Interest**

The study investigated the number of times there were cases of conflicts of interest were reported per year. The study established that 50 % of the respondents indicated 6-10 times,

17.9 % indicated 0-5 times, 14.3 % indicated 11-15 times while 7.1 % of the respondents indicated over 15 times. However, 10.7 % of the respondent did not indicate their response.

**Table 6: Number of Occurrence per Year**

<b>Number of occurrence per year</b>	<b>Frequency</b>	<b>Percentage</b>
0 – 5 times	5	17.9
6 – 10 times	14	50%
11 – 15 times	4	14.3
Over 15 times	2	7.1
No response	3	10.7
Total	28	100.0

**Source: Research Data 2015**

#### **4.3.4 Abuse of Office**

The study sought to establish the number of times the cases of abuse of office were reported per year. The study established that 46.4% of the respondents indicated 6-10 times as the number of times cases of abuse of office are reported in their organization, 39.3 % of the respondents indicated 0-5 times, while 3.6 % of the respondents indicated 11-15 times. However, 10.7 % of the respondents did not indicate their response.

**Table 7: Number of occurrence per year**

<b>Number of occurrence per year</b>	<b>Frequency</b>	<b>Percentage</b>
0 – 5 times	11	39.3
6 – 10 times	13	46.4
11 – 15 times	1	3.6
Over 15 times	00	00
No response	3	10.7
Total	28	100.0

The study further sought to establish the most commonly use measures to curb the unethical practices in their organization. The study established that 58.8 % of the respondents indicated that fines were the most common measures used to curb unethical practices, 28.6 % of the respondents indicated demotion, 21.4 % of the respondents indicated suspension from work while 7.1 % indicated termination deployment of the employees.

Interviews from the key informants revealed that the reason as to why fines were mostly used was because when the flow supplies from procurement to user departments could not be traced to the end; those responsible were made to pay for the supplies from their salaries.

**Table 8: Modes of Punishments**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Demotion	8	28.6
Fine	10	35.8
Suspension	6	21.4
Termination	2	7.1
Deployment	2	7.1
Total	28	100.0

#### **4.3.5 Relationship between Ethics and Procurement Process**

The relationship between ethics and the procurement process of medical supplies in the public sector in Nyeri County was tested using Person’s Correlation Coefficient (R).The results showed that ethics had a moderately positive relationship with procurement process with a Pearson Correlation Coefficient of 0.735 at 5% level of significance. The value of R<sup>2</sup> was 0.5402 indicating that 54.02% of procurement process is explained by ethics.

**Table 9: Model Summary**

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.735 <sup>a</sup>	.540	.493	.06309

a. Predictors: (Constant), Ethics

Further test at 5% level of significance indicated that the model was significant with F ratio equal to 7.447 at  $p < 0.001 < 0.05$

**Table 10: ANOVA**

<b>ANOVA<sup>a</sup></b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	.030	1	.030	7.447	.001 <sup>b</sup>
	Residual	.103	26	.004		
	Total	.133	27			

a. Dependent Variable: Procurement process

b. Predictors: (Constant), Ethics

The regression coefficient between ethics and the procurement process of medical supplies in the public sector in Nyeri County shows that the model had an intercept of 0.185 and a slope of 0.457 with a p value of  $0.001 < 0.05$  at 5% level of significance. This indicates that the relationship between ethics and the procurement process of medical supplies in the public sector in Nyeri County was statistically significant.

**Table 11: Coefficients**

Model	Coefficients <sup>a</sup>				t	Sig.
	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta			
1	(Constant)	.185	.051		3.620	.001
	Ethics	.457	.301	.735	1.251	.001

a. Dependent Variable: Procurement process

#### 4.4 Accountability and the Procurement Process

The study sought to establish the effects of accountability on the procurement process of medical supplies in the public health sector in Nyeri County. To establish this, the study focused on filing and documentation, audit queries and participation of public officials in the process of supplies.

##### 4.4.1 Filing and Documentation

Filing and documentation provides a record of all the activities and procedures and is carried out as per the set audit standards. The study sought to establish if filing and documentation was compliant to the set audit standards. The study established that 75 % of the respondents indicated that they filed their procurement documents as required by audit while 10.7 % did not comply with the audit standards. However, 14.3% of the respondents did not indicate their response.

**Table 12: Filing and Documentation**

<b>Filing and documentation</b>	<b>Frequency</b>	<b>Percentage</b>
No	3	10.7
Yes	21	75.0
No response	4	14.3
Total	28	100

The interviews with the key respondents indicated that despite the clear standards for filling documenting all records regarding procurement procedures, there were cases where supplies had to be procured and then taken to the user departments without the documenting and filing because of the urgency. For instance, where drugs are ordered for a specific patient and because of the urgency the drug is taken to the wards without having it recorded by the procurement officer first.

The research went further to investigate the ratings of filing and documentation in their departments. The results revealed that 35.7 % of the respondents rated the filing and documentation done in their departments as fairly adhered to the set audit standards, 21.4 % rated quality as poor, 25 % as good while 17.9 % very poor.

**Table 13: Rating of Filing and Documentation as per the Set Standards**

<b>Rating</b>	<b>Frequency</b>	<b>Percentage</b>
Very poor	5	17.9
Poor	6	21.4
Fair	10	35.7
Good	7	25.0
Total	28	100.0

#### 4.4.2 Audit Queries on the Procurement Process

Audit queries arose when internal and external monitors were not satisfied with the results of an audit process. The study assessed the existence of audit queries in the procurement process in the sampled institutions. The results revealed that 67.9 % of the respondents indicated that there were audit queries that arose from the procurement process in their organization. However, 21.4% indicated that they were not aware of any audit queries that arose from the procurement process while 10.7 % percent did not give their response.

**Table 14: Existence of Audit Queries**

<b>Existence of audit queries</b>	<b>Frequency</b>	<b>Percentage</b>
No	6	21.4
Yes	19	67.9
No response	3	10.7
Total	28	100.0

The study further sought to establish the annual number of the queries raised in their organization. From the findings, 32.2 % of the respondents indicated that 16-20 audit queries were reported in one year in their organization; this was followed by 11-15 by 17.9 %, the 21.4 % indicated 6-10 while 14.1 % indicated that there were more than 20 audit queries in a year in their organization.

The study revealed that most of these audit queries in their organizations were about the legality of most contracts awarded by the procurement department, the choice of procurement methods (for instance where officials choose to use direct procurement instead of tendering for their personal gains) and loss of important document relating to procurement procedures.

**Table 15: Annual Number of Audit Queries**

<b>Number of audit queries raised</b>	<b>Frequency</b>	<b>Percentage</b>
0 – 5	4	14.3
6 – 10	6	21.4
11 – 15	5	17.9
16 – 20	9	32.2
> 20	4	14.2
Total	28	100

#### **4.4.3 Involvement of Public Officers in the Process of Supplies of Medical Products**

Public officers are restricted from participation and involvement of in the process of supplying medical products to hospitals to increase self responsiveness and accountability (General Procurement Manual, 2009). The study established the level of involvement of public officials in the supply of medical supplies to the public hospitals. The study revealed that 71.4 % of the respondents stated that there were public officers who participated in the supplies of medical supplies in the organizations while 28.6 % indicated that there were no such cases. Respondents indicated that officers in the procurement and those in the user departments were mostly indirectly involved through having their friends and relatives who owned chemists supply pharmaceutical supplies.

**Table 16: Involvement of Public Officers in Supply of Medical Products**

<b>Involvement of public officers in supply</b>	<b>Frequency</b>	<b>Percentage</b>
No	8	28.6
Yes	20	71.4
Total	28	100



#### 4.4.4 Relationship between Accountability and the Procurement Process

To establish the relationship between accountability and the procurement process of medical supplies in the public sector in Nyeri County SPSS was used to compute Pearson's Correlation Coefficient (R). The results showed that accountability had a moderately positive relationship with procurement process with a Pearson Correlation Coefficient of 0.532 at 5% level of significance. The value of  $R^2$  was 0.283 indicating that 28.3 % of procurement process is explained by the accountability.

**Table 17: Model Summary**

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.532 <sup>a</sup>	.283	.277	.06431

a. Predictors: (Constant), Accountability

Further test at 5% level of significance indicated that the model was significant with F ratio equal to 11.729 at  $p\ 0.002 < 0.05$

**Table 18: ANOVA**

<b>ANOVA<sup>a</sup></b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	.049	1	.049	11.729	.002 <sup>b</sup>
	Residual	.112	27	.004		
	Total	.160	28			

a. Dependent Variable: Procurement process

b. Predictors: (Constant), Accountability

The regression coefficient between accountability and the procurement process of medical supplies in the public sector in Nyeri County showed that the model had an intercept of 0.185 and a slope of 0.131 with a p value of  $0.002 < 0.05$  at 5% level of significance. This indicated that the relationship between accountability and the procurement process of medical supplies in the public sector in Nyeri County was statistically significant.

**Table 19: Coefficients**

		Coefficients <sup>a</sup>				
Model		Unstandardized Coefficients		Standardize	t	Sig.
		B	Std. Error	d		
				Beta		
1	(Constant)	.185	.051		3.620	.001
	Accountability	.131	.111	.532	1.206	.002

a. Dependent Variable: Procurement process

#### **4.5 Employee Competency and the Procurement Process**

The study established the effect of employee competence on the procurement process of medical supplies in the public health sector on Nyeri County. To establish this, the study focused on academic qualification, in service training and work experience.

##### **4.5.1 In-Service Training**

The study sought to establish if the respondents had attended any in service training programs in their last year in the organization. It was revealed that 75 % of the respondents had attended of training during the last one year of service in the organization while 25 % had not attended. Most respondents indicated that they had attended some form of training program or seminars during their years of service.

**Table 20: In service Training**

<b>In service training</b>	<b>Frequency</b>	<b>Percentage</b>
No	7	25
Yes	21	75
Total	28	100.0

The study further sought to establish the duration of the trainings that the respondents undertook. The study established that 35.7 % of the respondents indicated that they had attended training programs that lasted for 0-3 days, 28.6 % of the respondents indicated 7-10 days while 10.7 % of the respondents indicated 4-7 days. However, 25.0 % of the respondents had not been trained in their last one year in the hospitals.

Interviews with the key informants revealed that training was offered to most employees but the government gave priority to the medical staff than administrative staff members. The interviews further revealed that employee competence was ensured through hiring and placing employee to the positions that match their professional qualification.

**Table 21: Duration of Training**

<b>Duration of training</b>	<b>Frequency</b>	<b>Percentage</b>
Not trained	7	25.0
0-3 days	10	35.7
4-7 days	3	10.7
8-13 days	8	28.6
> 11 days	00	00
Total	28	100.0

Information from the background information revealed that most of the respondents had served in the hospitals for 1-4 years. Interviews with the key informants revealed that employees were placed in department depending on their areas of career specification. In addition, employees with most experience were given priority when selecting members of committees like the tender committee, quality inspection and technical committee for developing needs and specification.

#### 4.5.2 Relationship between Employee Competence and the Procurement Process

In order to assess the relationship between Employee Competent and Procurement, the statistical measure of Pearson correlation coefficient was computed to determine the strength and direction of the relationship. There was a strong positive correlation coefficient which was statistically significant since ( $r = 0.578$ ,  $p = 0.02$ ) at 5 % level of significance. The results were interpreted that a unit change in employee competence lead to a 33.40 % change in the procurement process.

**Table 22: Model Summary**

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.578 <sup>a</sup>	.334	.308	.05840

a. Predictors: (Constant), Competence

Further test at 5% level of significance indicated that the model was significant with F ratio equal to 13.040 at  $p < 0.001 < 0.05$

**Table 23: ANOVA**

		ANOVA <sup>a</sup>				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.044	1	.044	13.040	.001 <sup>b</sup>
	Residual	.089	26	.003		
	Total	.133	27			

a. Dependent Variable: Procurement process

b. Predictors: (Constant), Competence

The regression coefficient between employee competence and the procurement process of medical supplies in the public sector in Nyeri County shows that the model has an intercept of 0.185 and a slope of 0.628 with a p value of  $0.001 < 0.05$  at 5% level of significance. This indicates that the relationship between employee competence and the procurement process of medical supplies in the public sector in Nyeri County was statistically significant.

**Table 24: Coefficients**

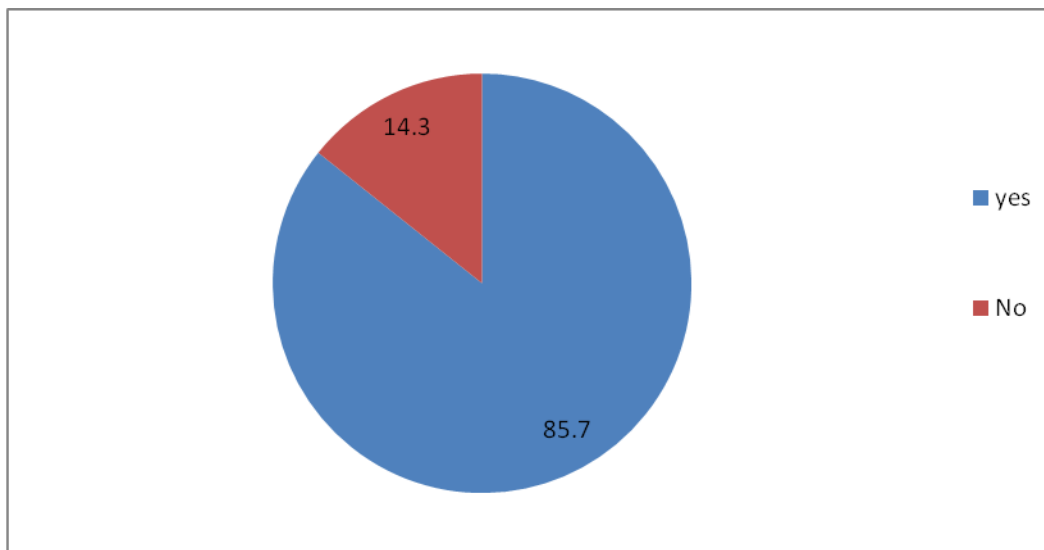
		Coefficients <sup>a</sup>				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.165	.044		3.785	.001
	Competence	.628	.174	.578	3.611	.001

a. Dependent Variable: Procurement process

#### 4.6 ICT Adoption and the Procurement Process

The study investigated the effect of ICT adoption on the procurement process of medical supplies in the public health sector in Nyeri County, the study focused on computer literacy, ICT application, and e-procurement. The research examined the respondents' knowledge and literacy on computer usage and application. The study established that 85.1 % of the respondents indicated that they were computer literate while 14.3 % indicated that they had no knowledge on computer usage.

The study revealed that that most departments in the hospitals had very few computers and most operations were therefore done manually. It was further revealed that those respondents who had computer knowledge had acquired the knowledge on their own and not through programs organized by the organization.



**Figure 4: Computer Literacy**

##### 4.6.1 ICT Application

The research investigated the number of respondents who used ICT tools in different areas operation in their departments. It was revealed that 28.6 % of the respondents used the ICT

tools available for communication, 25 % used it for record management, 17.8 % of the respondents used it for stores inventory control and preparation of official documents while 10.8 % did not indicate their response.

**Table 25: ICT Application**

	<b>Frequency</b>	<b>Percentage</b>
Stores inventory control	5	17.8
Communication	8	28.6
Records management	7	25.0
Preparation of official documents	5	17.8
No response	3	10.8
Total	28	100.0

#### **4.6.2 E- Procurement**

Electronic procurement ensures the automation of procurement processes and procures to reduce irregularities that arise from manual procedures. The research findings established that 78.6 % of the respondents indicated that they had not automated their procurement process; no respondent indicated that they used e-procurement while 21.4 % of the respondents did not indicate their response.

**Table 26: E-procurement**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
No	22	78.6
Yes	0	00.0
No response	6	21.4
Total	28	100.0

### 4.6.3 Relationship between ICT Adoption and the Procurement Process

The relationship between ICT adoption and the procurement process of medical supplies in the public sector in Nyeri County was tested using Person's Correlation Coefficient (R). The results showed that ICT adoption had a moderately positive relationship with procurement process with a Pearson Correlation Coefficient of 0.541 at 5% level of significance. The value of  $R^2$  was 0.292 indicating that 29.2% of procurement process is explained by ICT adoption.

**Table 27: Model Summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.541 <sup>a</sup>	.292	.265	.06019

a. Predictors: (Constant), ICT

Further test at 5% level of significance indicated that the model was significant with F ratio equal to 10.746 at  $p < 0.001 < 0.05$ .

**Table 28: ANOVA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.039	1	.039	10.746	.001 <sup>b</sup>
	Residual	.094	26	.004		
	Total	.133	27			

a. Dependent Variable: Procurement process

b. Predictors: (Constant), ICT



The regression coefficient between ICT adoption and the procurement process of medical supplies in the public sector in Nyeri County shows that the model has an intercept of 0.185 and a slope of 0.253 with a p value of  $0.001 < 0.05$  at 5% level of significance. This indicates that the relationship between ICT adoption and the procurement process of medical supplies in the public sector in Nyeri County was statistically significant.

**Table 29: Coefficients**

		<b>Coefficients<sup>a</sup></b>				
<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardize d Coefficients</b>	<b>t</b>	<b>Sig.</b>
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	.185	.051		3.620	.001
	ICT	.253	.229	.541	1.104	.001

a. Dependent Variable: Procurement process

#### **4.7 The Procurement Process**

The study sought to examine the state of procurement management in the public health sector in Nyeri County.

##### **4.7.1 Identification of Needs**

The study sought to find out the number of days taken to identify procurement needs by the departments in public hospitals before supplies run out. The study established that 64.2 % of the respondents indicated that procurement needs were identified 6-11 days before the supplies ran out, 25.0 % indicated 9-11 days before the supplied ran out, 7.2% indicated less than two days before while 3.6 % of the respondents indicated more than 11 days before the supplies ran out. Respondents indicated that different medical supplies had

different lead times and the time for identifying needs depended on the suppliers and urgency of the medical supplies.

**Table 30: Duration of Need Identification**

<b>Duration</b>	<b>Frequency</b>	<b>Percentage</b>
Less than two days before	2	7.2
3 – 5 days before	9	32.1
6 – 8 days before	9	32.1
9 – 11 days before	7	25.0
> 11 days before	1	3.6
Total	28	100.0

Further, the study established the number of times there were delays in the identification of procurement needs in the department annually. The study established that 35.7 % of the respondents indicated that delays in need identification occurred 0-3 times per year, 28.6 % indicated 4-7 times per year, 21.45 indicated 8-11 times while 14.3 % indicated that the delays occurred for more than 3 times per year.

**Table 31: Number of Delays Annually**

<b>Number of delays annually</b>	<b>Frequency</b>	<b>Percentage</b>
0 – 3times	10	35.7
4 - 7 times	8	28.6
8 - 11 times	6	21.4
> 11 times	4	14.3
Total	28	100.0

#### 4.7.2 Assessment of Procurement Options

The study investigated the methods of procurement frequently used by the public hospitals to acquire the medical supplies. The study established that 46.4 % of the respondents indicated that they used requests for quotation mostly as a method of procurement. 32.2 % of the respondents used tendering while 21.4 % of the respondents indicated that their organizations mostly used direct procurement. Interviews with the key informants revealed that request for quotation was the most method of procurement used in the hospital because the County provided and approved a list of pre-qualified suppliers to whom the hospitals sent requests for quotations. However the study also revealed that direct procurement was only used when there was urgency because request for quotations and tendering took time.

**Table 32: Procurement Method**

Procurement method	Frequency	Percent
Direct procurement	6	21.4
Request for quotation	13	46.4
Tendering	9	32.2
Total	28	100.0

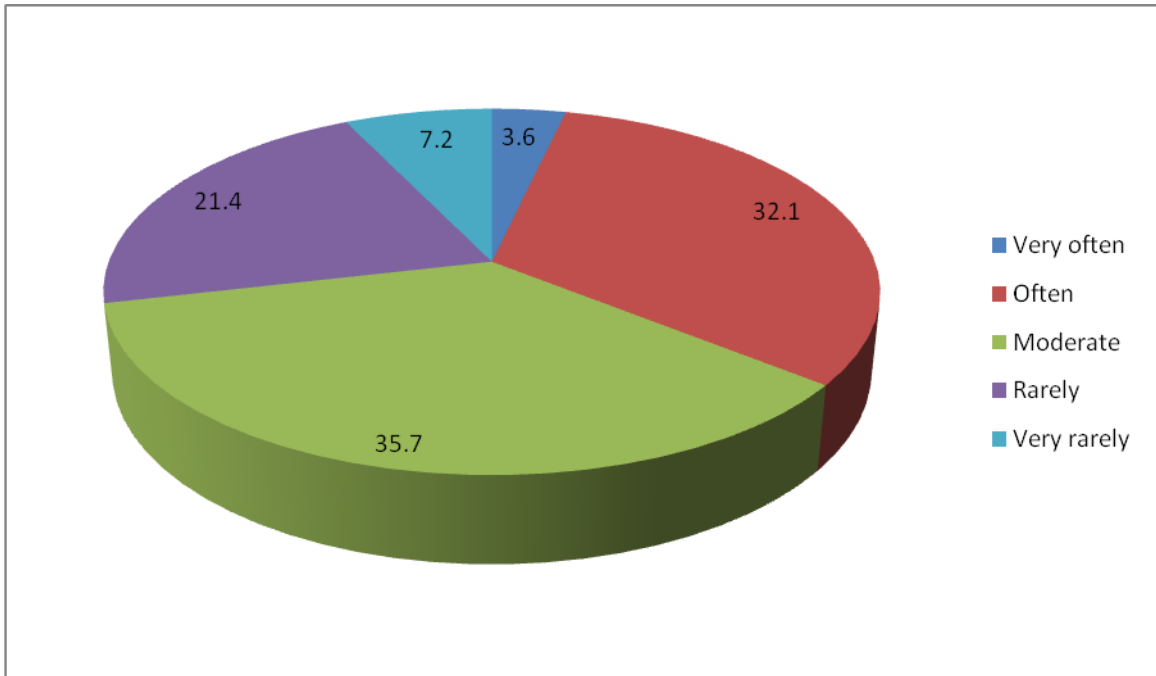
#### 4.7.3 Receipt of Goods

The study established the time it took the procurement department to have deliver good delivered after orders by user departments. The study established that 39.3 % of the respondents indicated that it took the procurement 0-3 days to process and deliver orders, 25.0 % of the respondents indicated 4-7 days, 21.4 % indicated 8-11 days while 14.3 % indicated 11-14 days.

**Table 33: Duration of Delivery**

<b>Duration of delivery</b>	<b>Frequency</b>	<b>Percent</b>
0 - 3 Days	11	39.3
4 - 7 Days	7	25.0
8 - 11 Days	6	21.4
11 - 14 Days	4	14.3
> 14 days	00	00
Total	28	100.0

The study further established how often goods received by the procurement department were rejected by the user department. The research established that 35.7 % of the respondents indicated moderate, 32.1 % indicated often, 21.4 % indicated rarely, 7.1 % of the respondents indicated very rarely while 3.6 % of the respondents indicated very often. The respondents revealed that errors occurred on both the side of the procurement department and the suppliers resulting to mistakes in description of goods; quality, quantity and these resulted rejecting the supplies. Notable examples cited included non consumable medical supplies.



**Figure 5: Rejection of Medical Supplies**

#### **4.8 Multiple Regression**

To assess the relationship between the procurement process and the four independent variables, Pearson's Correlation Coefficient (R) and coefficient of determination ( $R^2$ ) were computed. The results showed that accountability, ICT adoption, ethics and employee competence had a moderate positive relationship with the procurement process with a Pearson Correlation Coefficient of ( $r=0.644$ ) at 5% level of significance. The value of  $R^2$  was 0.415 indicating that 41.5% of the procurement process was explained by accountability, ICT adoption, ethics and employee.

**Table 34: Model Summary**

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted Square</b>	<b>R Std. Error of the Estimate</b>
1	.644 <sup>a</sup>	.415	.313	.05820

a. Predictors: (Constant), Accountability, ICT, Ethics, Employee Competence

Further test at 5% level of significance indicated that the model was significant with F ratio equal to 4.075 at  $p\ 0.012 < 0.05$

**Table 35: ANOVA**

<b>ANOVA<sup>a</sup></b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	.055	4	.014	4.075	.012 <sup>b</sup>
	Residual	.078	23	.003		
	Total	.133	27			

a. Dependent Variable: Procurement process

b. Predictors: (Constant), Accountability, ICT, Ethics, Competence

The multiple regression coefficient between accountability, ICT adoption, ethics and employee competence and the procurement process of medical supplies in the public hospitals in Nyeri County showed that the model had an intercept of 0.185 and a slope of 0.457 with a p value of  $0.001 < 0.05$  at 5% level of significance. This indicates that the relationship between accountability, ICT adoption, ethics, employee competence and the procurement process of medical supplies in the public sector in Nyeri County was statistically significant.

**Table 36: Coefficients**

Model	Coefficients <sup>a</sup>							
	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	.185	.051		3.620	.001			
ICT	.253	.229	.244	1.104	.281	.541	.224	.176
1 Ethics	.457	.301	.297	1.251	.001	.735	.255	.198
Competence	.300	.289	.276	1.038	.310	.578	.211	.166
Accountability	.133	.111	.257	1.206	.240	.532	.244	.192

a. Dependent Variable: Procurement process

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATION**

#### **5.1 Introduction**

This chapter discusses the findings of the data in relation to accountability, ethics, ICT adoption and employee competence and the procurement process, makes conclusions and finally gives recommendations.

#### **5.2 Discussion of findings**

##### **5.2.1 Ethics and the Procurement Process**

The results indicated that ethics was strongly and positively correlated with procurement process with a Pearson's correlation coefficient of ( $r = 0.732$ ) at 5% level of significance and ( $p = 0.003$ ), the p value was less than  $\alpha = 0.05$  which means the result was statistically significant. A change in ethics therefore led to a 54.02 % change in procurement process. Increase in the level of ethical standards led to enhanced procurement process. Cases of unethical practices negatively affected the procurement process. These cases included collusion, conflicts of interest and abuse of office as indicated by 78.6% of the respondents.

Collusion was very rampant with about 85.7 % of the respondent indicating that it occurred between one to fifteen times in a year. Forms of collusion included collusion between suppliers and procurement officers to inflate prices and collusion among bidders to set and determine who offers the lowest price. This affected the transparency of the whole procurement process because if parties collude, the bidding and supplier selection process will not be fair. More so, collusion between officials in the institutions and the suppliers so as to quote slightly higher prices affected the method of procurement chosen especially in the level 4 and level 5 hospitals since they procure in large volumes and more often.



Cases of conflicts of interest were reported in the health facilities in Nyeri County with about 82.2% of the respondents stating that such cases occurred between one to fifteen times in a year. The most common form of conflicts of interest was when contracts were awarded to a relative or to another person in whom one of them has a direct or indirect pecuniary interest.

Abuse of office occurs where undue influence of senior officers or procurement officers on an employee or agent of a procuring entity to take a particular action which favored a particular bidder. Opening sealed bid documents prior to the appointed time for the public opening was also a form of abuse of office. Abuse of office affected supplier selection and contract awards. Common cases of abuse of office that affected the procurement process included obstruction and undue delays in procurement processes and exerting inappropriate influence on any procurement procedure. This affected the speed of need identification, methods of procurement used and contract award. These effects can be damaging to the overall results of the procurement process.

The study further revealed that those responsible for any form of unethical practices were investigated. Those found to be guilty disciplinary measures were applied. The study established that 58.8 % of the respondents indicated that fines were the most common measures used to curb unethical practices, followed by demotion at 28.6%, suspension from work at 21.4% and termination of the employees at 7.1%.

Interviews from the key informants revealed that the reason as to why fines were mostly used was because the medical supplies issued by the procurement department to the user departments could not be traced; those responsible were made to pay for the supplies from

their salaries. Lerberghe, Ferrinho, Omar, Fernandes, Blaise, & Bugalho. (2004) assert that fines were a better way of dealing with unethical practices relating to procurement because it penalizes criminals without imposing costs on anyone else and also if the supposed criminal later turns out to be innocent, the fine can be returned.

### **5.2.2 Accountability and the Procurement Process**

The research established that accountability was moderately and positively correlated with procurement process with a Pearson's correlation coefficient of ( $r = 0.532$ ) at 5% level of significance and ( $p = 0.002$ ), the p value was less than  $\alpha = 0.05$  which means the result was statistically significant. This indicated that a unit of change in accountability led to 28.30 % change in the procurement process, hence a good predictor.

Proper filing and documentation of procurement records and documents enhances accountability in the procurement process. However, the study revealed that 75% of the respondents filed the documents as required by audit, with 10.7% not complying with the requirement. This is due to the fact that the hospitals were government institutions and therefore their procurement was guided by legal bodies like the PPOA. In addition, the hospitals had internal and external auditors who monitor the procurement process to ensure that the resources procured are well allocated and utilized by the user departments. Despite the efforts to file procurement documents, 75% of the respondents rated filing as very poor to fair.

The respondents further revealed that despite the clear set standards for filling documenting all records regarding procurement procedures, there were cases where supplies had to be procured and taken to the user departments without the documenting and filing because of

urgency. This was mostly observed particularly when drugs were required urgently in the wards and because of the urgency, there were limited time to fill the necessary forms or to make any recording for the items. This meant that the drugs are taken to the wards first and the documentation done later.

There were audit queries arising from the procurement process of medical supplies in the hospitals as indicated by 67.8 % of the respondents. The major areas where audit queries arose included; legality of most contracts awarded by the procurement department, the choice of the procurement methods such as choice of direct procurement instead of tendering for personal gains and loss of important documents relating to procurement procedures.

The findings are in agreement with an observation by Transparency International (2010) that 84.8% and 73.5% of the respondents reported the existence of audit queries at the district and facility level hospitals respectively. Amos and Weathington (2008) further argue that regular reviews or audits of procurement processes can be done to ensure probity is being considered and achieved.

Hagén and Zeed (2005) observe that public entities gave contracts to firms in regions that are important for the government in a forthcoming election, or can be used to reward political supporters or 'buy' official opponents. Procurement contracts were placed to benefit the personal interests of politicians, officials or their family and friends or they were given to those firms that are prepared to pay bribes. Tender bids evaluation take longer than expected because the tender committees are tasked to explain the audit queries raised by internal and external monitors.

The use of direct procurement favored medical officers working in the hospitals allowing them to supply the products from their private chemists. This was observed by 71.4% of the respondents. According to the key informants this led to unfair competition in the supply of medical supplies, inflated prices and supply of poor quality products. The findings were also in agreement with Transparency International (2010) which found out that failure to restrict public officers from involvement in the supply of medical supplies contributed to drug and medical supplies' shortages by taking out the drugs for their own use or sale to private health facilities and pharmacies near the public health facilities.

### **5.2.3 Employee competency and the procurement process**

In the study, Pearson Correlation Coefficient  $r$ , was used to establish the extent to which a unit of change in procurement process arises from a unit change in employee competence. The study established that there was a strong positive correlation coefficient which was statistically significant since ( $r = 0.578$ ,  $p = 0.02$ ) at 5 % level of significance. This implied that a unit change in employee competence led to a 33.40 % change in the procurement process.

Information on academic qualification revealed that the employees were qualified for the positions they held. This was attributed to the fact that the hospitals were public institutions and there were set guidelines and standards for recruitment in the various positions which were reviewed and monitored by auditors. For instance, the minimum qualification for a procurement officer was a Bachelors degree while that of the assistant procurement officer was a college diploma.

The study established that 75 % of the respondents had attended some form of training during their last one year of service in the organization. However respondents indicated that

the training programmes and seminars attended were general in nature and not customized for their specific career paths. For example, there were training programmes by the government on general issues like corruption and public relations. Respondents who acquired additional professional skills had mostly attended other programmes other than those organized by their institutions, for example, CPA for accountants and CIPS for procurement officers.

Interviews with the key informants further revealed that although training was undertaken by most employees but the government gave priority to the medical staff. The study further established that 35.7% of the respondents indicated that they had attended training programs that lasted for 0-3 days, 28.6% of the respondents indicated 7-10 days while 10.7% of the respondents indicated 4-7 days. KIPPRA (2006) found out that government and health Ministries often lack the management skills required to write technical specifications, supervise competitive bidding, and monitor and evaluate the contract performance.

Information from the background information revealed that 60.7% of the respondents had served in the hospitals for 1-4 years. This was an indication that most employees were well conversant with their workplace and work procedures. The study established that employees were placed in departments depending on their areas of career specification and employees with most experience were given priority when selecting members of committees like the tender committee, quality inspection and technical committee for developing needs and specification. Years of experience affected the speed and accuracy of employees for example when preparing bidding documents or evaluating quotations and tenders.

#### **5.2.4 ICT Adoption and the procurement process**

ICT adoption had a moderate positive relationship with procurement process with a Pearson Correlation Coefficient of 0.541 at 5% level of significance and ( $p = 0.001$ ), the  $p$  value was less than  $\alpha = 0.05$  indicating that the results were statistically significant. Hence, a unit change in ICT Adoption led to a 29.26 % change in procurement process. The study established that 87.1 % of the respondents were computer literate; this was an indication that most of the respondents were computer literate. It was further established that 28.6 % of the respondents used the ICT tools available for communication.

ICT was largely used for communication by the respondents because of the routine processes like communicating with suppliers, consulting with the user departments and mostly posting and advertising for invitation to bid. The major tools of ICT used for the communications were mostly phones which were used for calling and texting inside and outside the organizations. Computers were also used to send emails but to a smaller extent because of the few computers available especially in the Level 3 and 4 hospitals. The research further established that 78.6 % of the respondents indicated that they had not automated their procurement process. In addition, no respondent stated that they had used e-procurement because they had not received any training on e-procurement. Respondents were familiar with frequently used Microsoft software namely; Microsoft word, PowerPoint and excel. Only 14.3% used internet.

Interviews with the key informants revealed that these applications were mostly used because they were available on computers. It also came out that those that used internet used personal means like modems and mobile data. The observation that the hospitals had

not automated their procurement procedures confirms a survey by the WHO (2007) which showed that the level of ICT adoption in the provincial and district hospitals was very low due to lack of adequate staff to use the available technology.

Spreadsheets and manual processes are slow and cumbersome and cannot support today's demand driven enterprise. However it was noted that even with the basic applications, these applications enhanced distribution of information, improved both internal and external communication, led to decentralization of tasks and enabled better stock control. Njeru (2014) established that adoption of ICT helps in determination of re-order levels and stock control management and increases transparency in the procurement process.

### **5.3 Conclusion**

The study found that procurement process of medical supplies in the public health hospitals in Nyeri County was affected by factors such as; accountability, ethics, ICT adoption and employee competence. From the findings, the effect of the four depend variables (accountability, ICT adoption, ethics and employee competence) affected the procurement process with ( $r = 0.415$ ), this therefore indicated that 41.5% of the procurement process was explained by the four dependent variables. The study concluded that 58.5% of the procurement process was explained by other factors not examined in this study, such as the external factors.

From the findings the study revealed that accountability affected the procurement process by 53.2%. These results were explained by filing and documentation of procurement documents, audit queries raised by internal and external monitors and the involvement of public officers in the process of supplying the medical products. The study further concluded that ICT adoption affected procurement process of medical supplies by 29.26%.

It was established that computer literacy, application of ICT tools and e-procurement affected the procurement process of medical supplies. The lack of automated systems in the hospitals management offices was attributed to the lack of internet and this made difficult to adopt e-procurement and e-tendering.

The study concluded that ethics affected the procurement process of medical supplies in the public hospitals by 54.02%. The results were explained by the unethical practices like collusion, conflict of interest and abuse of office which affected the assessment of procurement options, supplier selection and contracts award. The study further concluded that employee competence affected the procurement process by 33.40%. The results were explained the academic qualification of the employees, in-service training and work experience which affected accuracy in need identification, preparation and evaluation of bidding documents and assessment of procurement needs.

#### **5.4 Recommendations**

The study established that inconsistent filing and documentation of procurement records, audit queries arising from the procurement process and involvement of officials in the process of supply affected the procurement process. The study therefore recommended that accountability to be enhanced by; checking for all the files and documents relating to the procurement process to ensure that all activities and allocation captured. Ensuring that all the recommendations from the reports by internal or external monitors are followed to the letter and the queries raised are investigated and restricting public officers from participating or involvement in the process of supply of medical products.



The study further revealed that the levels of ICT adoption and application were low in the public hospitals. The study recommended that ICT adoption in the public health hospitals in Nyeri County to be enhanced through; purchase of more modern technology equipment like computers, installation of software packages, internet connection and automation of the key processes like tendering, sourcing and payments to increase transparency which then will reduce the opportunities for collusion and corruption. It will also enable the county government to provide excellent service to their suppliers in an effective and transparent manner.

In addition, the study revealed that there were cases of unethical practices like collusion, conflicts of interest and abuse of office which affected the procurement process. The study recommended that ethics should be enhanced through; ensuring that market approvals (or registration) of pharmaceutical products is granted on the basis of efficacy, safety and quality to avoid cases of collusion. Suppliers should be investigated and warned against colluding to determine who wins a contract.

Punishments and sanctions should be put in place to deal with the unethical conducts; this will reduce or curb the occurrence of the same. The study also recommended that all officials in public institutions to be conversant with the constitution of Kenya, PPDA and the general procurement manual for guidelines on their code of conduct. Lastly, the study established that there was inadequate relevant training to improve employee competence. In addition to training, academic qualification and work experience also affected the procurement process.

The study recommended that the county government in cooperation with various organizations in the public and non-public sector to come up with procurement standards as well as establish effective training capacity. The stakeholders should also carry out capacity building programs aimed at addressing the various procurement needs of various entities. These programs should be approved by PPOA to enhance transparency. There is need for the county government to determine the procurement members, tender committees and procurement officers' professionalism as this is a vital part in in coming up with a procurement cadre that can effectively ensure higher standards. In addition, professionalism in the sector will ensure service delivery is done as per the Government policies.

#### **5.5 Recommendation for Further Research**

This study examined the internal factors affecting procurement process of medical supplies in the public hospitals in Nyeri County; the internal factors explained 41.5% of the procurement process. There is need for further study aiming at establishing the external factors that affect the process of medical supplies' procurement within Nyeri County. These factors accounts for the other 58.5%, thus the need to address them in future research. In addition, future study should explore the challenges associated with the procurement process in public sectors' medical supplies.

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APPENDICES

**Appendix I: Introduction Letter**

Dear Respondent,

**RE: REQUEST TO COLLECT DATA FOR MASTERS DEGREE THESIS.**

I am a student undertaking Masters Degree in business management (Purchasing and Supplies), Karatina University School of business. I kindly request you to participate in the study of the **Internal Factors Affecting the Procurement Process of Medical Supplies in the Public Health Sector in Nyeri County.**

You are therefore asked to fill the questionnaire, provide answers to the questions by ticking (√) in the right box or filling in the right number in the appropriate box. All information received shall be treated with confidentiality and the findings will be used for academic purposes only. The findings and recommendations of the research if necessary will be availed to you upon completion of the research

Thank you.

Yours sincerely

**Kabubu Casty**

**APPENDIX 1I: QUESTIONNAIRE FOR THE EMPLOYEES IN THE PUBLIC HOSPITALS IN NYERI COUNTY**

**TITLE: INTERNAL FACTORS AFFECTING THE PROCUREMENT PROCESS OF MEDICAL SUPPLIES IN THE PUBLIC HEALTH SECTOR IN NYERI COUNTY**

The purpose of the study is to establish the internal factors affecting the procurement process of medical supplies in the public health sector in Nyeri County. The findings of this study are purely for academic purpose. Confidentiality will be kept and the findings will be used strictly for the purpose of the study. You are kindly requested to provide responses in the following questions.

**SECTION ONE: General Background Information**

1. Name of the Hospital .....Level.....

2. Department.....

3. Please indicate your position in the department

Head of department [ ]

Assistant head [ ]

Support Staff [ ]

4. Gender

Male [ ] Female [ ]

5. What is your level education? (Tick as applicable)

KCPE [ ]

KCSE [ ]



Bachelors' degree

Masters degree

Doctorate (PhD)

Others-specify.....

6. Indicate your years of service/working period in this hospital (Tick as applicable)

Less than one year

Two years

Three years

Four years

Five years

More than five years

**SECTION TWO: ACCOUNTABILITY**

7. Do you file all procurement documents as per the required audit standards in your department?

Yes

No

8. How would you rate the filing and documentation procedures in the procurement department?

Excellent

Good

Fair

Poor

Very poor

9. Are there any audit queries arising from procurement procedures in this organization that you know of?

Yes

No

10. Indicate the number of audit queries indicate relating to the procurement process raised in the organization per year

0-5

6-10

11-15

16-20

More than 20

11. If yes, what areas are mostly queried by the auditors?

.....  
.....  
.....  
.....

12. What are the effects of the audit queries on the procurement process in this organization?

.....  
.....  
.....  
.....

13. Are there cases of public officers participating in the supply of medical supplies in this organization that you know of?

Yes  No

14. If yes, how does this affect the procurement process in this organization?

.....  
.....  
.....  
.....

**SECTION THREE: ICT ADOPTION**

15. Are you computer literate?

Yes

No

16. Indicate the areas where ICT tools are used in your department

Stores and inventory control

Communication

Records management

Preparation of official documents

17. Have you adopted e-procurement in your organization?

Yes

No

18. If no indicate the reason for not using e-procurement

.....  
.....

19. Indicate any applications and software that you carry out operations in your department

.....  
.....

**SECTION FOUR: ETHICS**

20. Are there cases of unethical practices that affect the procurement process in this organization?

Yes

No

21. Indicate the frequency of occurrence of the unethical practices in the public hospitals per year.

a. collusion

0-5 times

6-10 times

11- 15 times

Above 15 times

b. conflicts of interest

0-5 times

6-10 times

11- 15 times

Above 15 times

c. Abuse of office

0-5 times

6-10 times

11- 15 times

Above 15 times [ ]

22. How do all these practices affect the procurement process of medical supplies in this organization?

.....  
.....  
.....

23. What measures are in place to deal with unethical practices in procurement in your organization? .....

24. Indicate the measures that are in place to curb these unethical procurement practices in this organization

.....  
.....

25. Which of the measures are mostly adhered to and indicate the reasons?

.....  
.....

**SECTION FIVE: EMPLOYEE COMPETENCE**

26. What is your level education? (Tick as applicable)

KCPE [ ]

KCSE [ ]

Bachelors' degree [ ]

Masters degree [ ]

Doctorate (PhD) [ ]

27. Have you attended any in-service seminars or training programmes on procurement processes?

Yes [ ]

No [ ]

28. If yes, indicate the durations of the seminars.

0-3 days [ ]

4-7 days [ ]

8-11 days [ ]

Over 11 days [ ]

29. What areas in procurement would you recommend for training programmes to improve employee competence?

.....  
.....  
.....

## **SECTION SIX: PROCUREMENT PROCESS**

30. Indicate the number of days taken to identify procurement needs by the departments in public hospitals before supplies run out.

Less than two days before [ ]

3 – 5 days before [ ]

6 – 8 days before [ ]

9 – 11 days before [ ]

More than 11 days before [ ]

32. Indicate the number of times there are delays in the identification of procurement needs in the department annually.

0 – 3times [ ]

4 - 7 times [ ]

8 - 11 times [ ]

More than 11 times [ ]

33. Indicate the methods of procurement frequently used by this hospital to acquire the medical supplies.

Direct procurement [ ]

Request for quotation [ ]

Tendering [ ]

34. Indicate the time it taken by the procurement department to have deliver good delivered after orders by user departments.

0 - 3 Days [ ]

4 - 7 Days [ ]

8 - 11 Days [ ]

11 - 14 Days [ ]

More than 14 days [ ]

35. Indicate how often goods received by the procurement department are rejected by the user department.

i) Very often [ ]

ii) Often [ ]

iii) Moderately [ ]

iv) Rarely [ ]

v) Very rarely [ ]

36. What would you recommend on the following internal factors and their effect on the procurement process of medical supplies in your organization?

i. Accountability

.....  
.....  
.....

ii. ICT Adoption

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.....  
.....  
.....

iii. Ethics

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.....

iv. Employee Competence

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.....  
.....  
.....



## **APPENDIX III: INTERVIEW SCHEDULE**

### **Key Informants' Interview Guide**

#### **Introduction**

My name is Casty Kabubu. I am a student in Karatina University pursuing a Master's Degree in Business Management (Purchasing and Supplies Option). I am undertaking a research on the INTERNAL FACTORS AFFECTING THE PROCUREMENT PROCESS OF SUPPLIES IN THE PUBLIC HOSPITALS IN NYERI COUNTY. The purpose of my research is purely academic and all the information gathered will be treated with due confidentiality. Thank you.

1. How is the procurement of medical supplies done in this hospital?
2. In your opinion how do the following factors affect the procurement process in this hospital?
  - a. Accountability (Filing and documentation, Audit Queries and Involvement of officers in supply of medical products)
  - b. ICT Adoption (Computer literacy, Application and E-procurement)
  - c. Ethics (Collusion, Conflict of Interest and Abuse of office)
  - d. Employee competence (Academic qualification, In-service training and work experience)
3. What are your recommendations on each of the above internal factors?

**APPENDIX IV: BUDGET**

Particulars	Units	Cost per item	Amount
Pilot study	1	5,000	8,000
Transport	1	-	10,000
Data Analysis	-	-	10,000
Printing	3	100	300
Ream of printing papers	4	350	1,400
Pens	6	20	120
Pencils	5	50	250
Erasers	3	10	30
Photocopying	3	150	7000
Binding/ Lamination	4	250	1000
Total		5,930	33,550