



# **Effects of Procurement Regulations on Performance of Public Secondary Schools in Nairobi City, County, Kenya**

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## **ABSTRACT**

The Education Act and the Secondary School Heads' Manual recognize school heads as the financial controllers and accounting officers, responsible for all school revenue and expenditure management. Prior to reforms, procurement and tendering activities in public institutions, including secondary schools, was carried out under unclear legal frameworks, which failed to check irregularities arising from the process. The study focused on establishing how ethical practices, transparency, procurement professionalism and inspections and acceptance affected performance of public secondary schools in Nairobi County. To achieve the objective of this study, the researcher adopted a descriptive research design with the target population being the staff involved in procurement in the 76 public secondary schools in Nairobi City County. A census of the entire population was done. Primary data was collected using questionnaires. Pilot test was also carried out in six public secondary schools in the county before the actual data collection to ensure validity and reliability of the research instruments. Data was edited, coded and analysed by use of statistical package for social sciences (SPSS version 23) and presented through tables and graphs. Pearson's correlations coefficient was run to examine the relationship between the independent and dependent variables. The study established that ethical practices, transparency, procurement professionalism and Inspections and acceptance affect performance of public secondary schools in Nairobi City County. From the findings it was concluded that most Public Secondary Schools in Nairobi County have partly implemented PPDA (2005) and PPDR (2006) in the procurement of goods, services, and works. The study recommended stiffer penalties to be imposed for violations of procurement ethics and that procurement officers should be adequately trained.

**Keywords:** Secondary Schools, procurement, transparency, government

## **INTRODUCTION**

In today's world procurement in the public sector is experiencing great change at a pace never experienced before. The public secondary schools procurement process which has hitherto been shrouded in mystery is increasingly being forced to open up to scrutiny by the public. Around the world, as public procurement processes change, public institutions are forced to re-evaluate their policies and procedures in order to comply with the laws of the land and to be accountable to the public whose funds are keeping them in operation (Cousins & Speckman, 2003)

Procurement may be described as process of acquisition of the initial raw materials, finished products, works in progress and services and functions within and outside a company to enhance the value chain to make products and provide services to the customers. Procurement is also defined as 'all of those activities associated with acquisition of goods, from raw materials stage through to the end products. This includes sourcing and purchasing, order processing, inventory management, transportation, warehousing, and customer service (Thai, 2001).

Clearly, procurement has a significant role to play in helping the public secondary schools achieve their objectives and prepare for the uncertainty ahead. In part, this will require procurement to focus on driving

costs out of the cost base. But the opportunity also exists for the function to add value in a much more strategic way (Leenders & Johnson, 2008).

Public procurement has its origins in the fiduciary obligation of government administration to deliver goods and infrastructure, for example roads and harbours and services, for example health care and education to the population of a country or a specific geographic region, city or town (Odhiambo, 2003). Performance has been described as the degree of achievement of certain effort or undertaking. It relates to the prescribed goals or objectives which form the project parameters.

Public procurement is concerned with how public sector organizations spend taxpayers' money on goods and services (Hall, 2009). Globally, in many developed nations, government organizations across the world tend to spend between 8 per cent and 25 per cent of GDP on goods and services (Organization for Economic Co-operation and Development, 2006). Public service agencies aim at making the best use of 'Cost Reduction' for the members of the public this involves client satisfaction, public interest, fair play, honesty, justice and equity (Korosec & Bartle, 2003). Recent studies have also pointed out the significance of moral and ethical behaviour in addition to technical and professional competencies (Schlosser, 2003).

In the past three decades, the public procurement system in Kenya has undergone significant developments. From being a system with no regulations in the 1960s to a system regulated by Treasury Circulars in the 1970s, 1980s and 1990s, the introduction of the Procurement Regulations of 2006 brought new standards for public procurement in Kenya (Kenyan *et al.*, 2011). Many studies were carried out on procurement before the Public procurement and Disposal Regulations of 2006 to evaluate the efficiency of the procurement process in existence at the time (Griffith & Griffith, 2012). The major findings of the studies were that public procurement was not operating efficiently and that the state was losing a lot of money through shoddy deals. Reports strongly indicated the need for reforming the public procurement system in the country. The Public Procurement and Disposal Act, of 2005 was assented to on 26<sup>th</sup> October 2005.

The PPDR included public secondary schools among the institutions whose procurement systems were to be regulated by the Regulations. The Public Procurement and Disposal Act granted states that procurement function shall be handled by procurement professionals whose qualifications are recognized in Kenya (Public Procurement and Asset Disposal Act, 2015). In the first schedule of the PPDA, secondary schools are recognised as class C procuring entities (PPOA, 2007).

The disbursement and utilization of funds meant for Free Secondary Education (FSE) program is subject to the provisions of the Government Financial Management Act, 2004 which emphasizes on good financial management in public institutions. The Public Procurement and Disposal Regulations were supposed to supplement towards this goal by making public procurement more transparent (PPOA, 2007).

#### **Statement of the Problem**

The aim of the Public Procurement and Disposal Regulations of 2006 was to promote fairness, transparency, ethical practices and professionalism in procurement in public institutions with a view to ensuring efficient use of public funds. However, despite the enactment of the procurement laws and regulations which were meant to bring about order and sanity in the public procurement sector, many procurement activities still suffer from neglect, lack of open competition and corruption. The public sector is still plagued with inefficiencies, misuse of public funds and delays in delivery of projects, goods and services (Mburu & Njeru, 2014).

According to the Report of the auditor general for the year 2013-2014, about Ksh 450 billion were irregularly spent in that accounting period, a figure almost a quarter of the national budget. The report identified public secondary schools among the institutions where massive irregular spending of public funds was evident. It indicated that more than 80% of the contracts had inflated prices while over 60% of works were paid for before completion in breach of Public Procurement and Disposal Regulations(2006).The report indicated that about 15% of the nearly Sh750 million disbursed to 11 national schools for rehabilitation of buildings was misappropriated.

Mburu (2012), while taking a look at the factors inhibiting implementation of Public Procurement and Disposal laws and regulations concluded that some of these factors included lack of adequate resources,

resistance to PPDA (2005) and PPDR (2006); and lack of procurement planning. The researcher pointed out that there is need to establish if the enactment of procurement regulations has actually affected performance of public institutions. This study therefore sought to establish the effect of procurement regulations on performance of public secondary schools in Kenya, specifically Nairobi City County.

### **Objectives of the Study**

The purpose of the study will be to establish the effects of procurement regulations on performance of Public secondary schools in Nairobi City County.

The study sought to be guided by the following research questions:

- i. To determine effect of ethical practices on performance of Public secondary schools in Nairobi City County, Kenya
- ii. To establish the effect of professionalism of procurement practitioners on performance of Public secondary schools in Nairobi City County, Kenya
- iii. To investigate the effect of transparency on performance of Public secondary schools in Nairobi City County, Kenya
- iv. To assess the effect of inspections and acceptance on performance of Public secondary schools in Nairobi City County, Kenya

### **Research Questions**

The study was guided by the following research questions to the realization of the study objectives:

- i. What is the effect of ethical practices on performance of Public secondary schools in Nairobi City County, Kenya?
- ii. To what extent does procurement professionalism affect performance of Public secondary schools in Nairobi City County, Kenya?
- iii. How does transparency affect performance of Public secondary schools in Nairobi City County, Kenya?
- iv. How do inspections and acceptance affect performance of Public secondary schools in Nairobi City County, Kenya?

## **LITERATURE REVIEW**

### **Theoretical Review**

According to Abeywardena & Tham (2012) a theoretical framework provides the researcher with a lens to view the world. A theory is an accepted fact that attempts to provide a plausible or rational explanation of cause- and-effect (causal) relationship among a group of observed phenomenon (Adamov, 2012).

### **Agency Theory**

This research project was based on Jensen & Meckling (2006) agency theory that states that, an agency relationship is a contract under which one or more persons (principals) engages another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent. When executing the tasks within the principal-agent relationship, the agent must choose actions that have consequences for both the principal and the agent. Since these outcomes can be either negative or positive for each of the actors, the chosen action of the agent affects the welfare of both.

The principal-agent relationship is often forged because the agent possesses a greater abundance of the needed skills, abilities, and/or time to perform the desired activities (Cane, 2004). However, it is not assumed that these agents behave selfishly and do so with guile. In other words, slightly contrary to transaction cost economics framework, although it is assumed that people are opportunistic in the sense that they may shirk in a self-interested manner by trying to minimize effort if it fulfils their needs, it is not assumed that they will willingly misrepresent or lie about that effort (Arrowsmith, 2010). More to the point, it is merely assumed that the principal and agent do not share the same levels of information, and as such, the agent can opportunistically take advantage of the situation, sometimes to the detriment of the principal. This latter situation is known as moral hazard and is often the result of asymmetric information (Farma & Weele, 2000).

The agent, being the procurement practitioners in this case ought to act professionally and be accountable to the principal who are the school community and the general public. However, it can be summarised

thus, in any purchasing decision, the multiple layers of principals and agents make organizational responsiveness and maintaining transparency difficult (Jensen, 2006). This theory therefore suggests that professionalism of the procurement officers (agents) affect performance. The theory further suggests that the agent (the procurement officer) ought to act ethically while representing the principal. This theory informed the first and second objectives on the effect of ethical practices and the effect of procurement professionalism on performance of public secondary schools in Nairobi City County.

### **Institutional Theory**

The institutional theory is the traditional approach that is used to examine elements of public procurement (Luhmann, 2010). Scott (2004) identifies three pillars of institutions as regulatory, normative and cultural cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as basis for compliance.

According to Scott (2004), institutions are composed of cultural-cognitive and regulative elements that, together with associated activities and resources give meaning to life. In Kenya, public procurement is guided by the PPDA Act 2005, regulations and guidelines which are from time to time issued by the Public Procurement Oversight Authority (Barrett, 2010). Public procurement act and regulations instituted guidelines which were to ensure procurement participation in a transparent and competitive procurement process. This institutionalisation of competitive bidding and transparency was meant to ensure better performance by the procuring entity.

The regulations also put in place bodies and committees which were to run the procurement process. One of these committees is the inspection and acceptance committee which is responsible for inspecting all works and goods procured public bodies to ensure they meet the required quality standards (Andrew, 2008). This theory thus informed the third and fourth objectives of the study on the effect of transparency and the effect of inspections and acceptance on performance of public secondary schools in Nairobi City County.

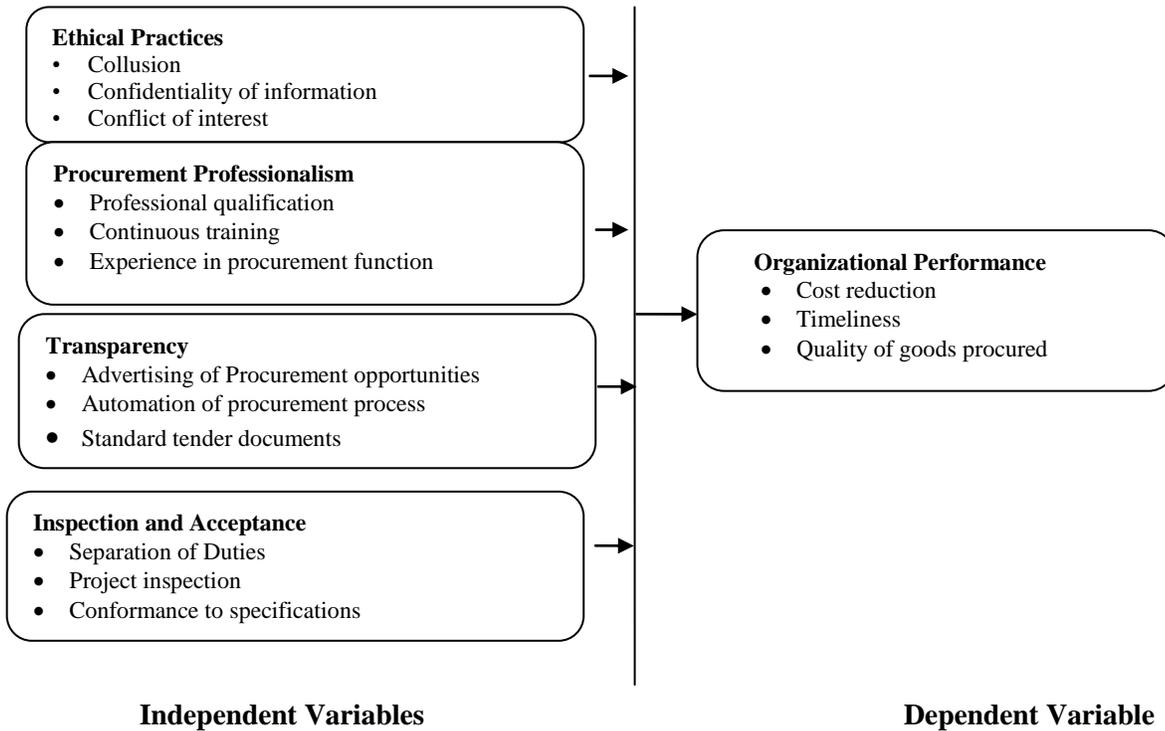
### **Transaction Cost Theory**

This theory addresses questions on why firms exist in the first place (that is to minimize transaction costs), how firms define their boundaries, and how they ought to govern operations. According to Patrick (2010), Transaction cost economics was originally developed to help to determine the efficiency of governance structures in the private sphere. Yet, Williamson (2006) already addressed public utility services and the importance of transaction costs in the public sector when analyzing bidding process.

According to Simon and Evenett (2005), parties have to bid for the right quality of goods and services and the award has to go to the bidder offering the lowest price. While transparency can indeed be an effective way of determining the lowest cost supplier when the price of the good or service being procured is the buyer's only concern, it works less well for complex goods and services where the buyer cares more for the quality, reliability, and other attributes of the procurement (Golinelli, 2009). Therefore, transaction cost theory suggests that allowing many bidders to participate in a competitive procurement process can affect performance by helping in the reduction of costs. This theory therefore informed the third objective of the study on the effect of transparency on performance of public secondary schools in Nairobi City County.

### **Conceptual Framework**

Conceptual frameworks, according to educational researcher Smyth (2004), are structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at, frame their questions and find suitable literature. Most academic research uses a conceptual framework at the outset because it helps the researcher to clarify his research question and aim. The independent variables are ethical practices, transparency, procurement professionalism and inspection and acceptance, while the dependent variable is performance. The conceptual framework is as represented in Figure 2.1:



**Figure 1 Conceptual Framework**

**RESEARCH METHODOLOGY**

**Research Design**

The study adopted a descriptive design to justify the relationship between the independent and dependent variables. It is a scientific method of investigation whereby data is collected and analysed in order to describe the current conditions, terms or relationships concerning a problem (Kothari, 2005).

**Target Population**

The target population was the 76 public secondary schools in Nairobi City County (NCC, 2014). The respondents were the personnel in charge of procurement of each school totaling to 76 respondents. Thus the unit of analysis is the 76 public secondary schools while the units of observation are the procurement officers of the school. According to Sekaran, (2005), population is a group of individuals, objects or items from which samples are taken for measurement or it is an entire group of persons, or elements that have at least one thing in common.

**Sample and Sampling Technique**

A researcher selects a sample due to various limitations that may not allow researching the whole population (Kothari & Garg, 2014). The study adopted a census to collect primary data. It is recommended that a census survey is used when the population (76) is small that is less than 200 and manageable to collect information for the study (Yin, 2013). This therefore ruled out application of specific sampling technique. The census approach is justified since according to Orodho (2009), data gathered using census contributes towards gathering of unbiased data representing all individuals’ opinions on a study problem (Field, 2006). Census provides a true measure of the population since there is no sampling error and more detailed information about the study problem within the population is likely to be gathered (Saunders, 2011).

### **Data Collection Instruments**

Both quantitative and qualitative data were collected in this study. Data was collected mainly through questionnaires. The questionnaires used for the study comprised of open and close ended questions. The advantage of using both structured and unstructured questionnaires is that they are easier to analyse and also they permit greater depth of response whereby respondents are given responsibility of giving their own personal response. The questionnaires were designed according to the objectives of the study by highlighting the four factors that the study wanted to check on a Likert scale. Mugenda and Mugenda (2003) argue that these types of scales are used to measure perception, values and behaviour. This helps in minimising subjectivity and makes it possible to use quantitative analysis.

### **Data Collection Procedure**

The questionnaires were self administered to the respondents by the researcher. The respondents were briefed in regard to the structure of the questionnaire so that they were in a position to respond to the questions appropriately. Secondary data was collected from past published reports, journals, articles and books. The study targeted a sample of 76 respondents and 58 respondents filled in and returned the questionnaires giving a response rate of 76%

### **Pilot Test**

Kothari (2004) argues that before using a questionnaire as a data collection tool, it is always advisable to conduct pilot study. This helps to bring into light the weaknesses (if any) of the questionnaire and the experience gained in this way can be used to effect improvement. For this study, a pilot study was undertaken in 6 public secondary schools in Nairobi City County (each from a different Sub county), that is 8.6% of the total population. Mugenda and Mugenda (2012) pointed out that a successful pilot study should use 1% to 10% of the actual sample size.

### **Validity of the Research Instrument**

According to Mugenda and Mugenda (2003), Validity is the accuracy and meaningfulness of inferences, which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represent the variables of the study. The research instrument was validated in terms of content and face validity. Content validity was ensured by using both structured and unstructured questionnaires whereby respondents were given responsibility of giving their own personal response. Face validity was ensured by structuring the questionnaires based on the variables and their indicators and by seeking advice from the university supervisors.

### **Reliability of the Research Instrument**

If a researcher administers a test to a subject twice and gets the same score on the second administration as the first test, then there is reliability of the instrument (Mugenda & Mugenda, 2012). The researcher measured the reliability of the questionnaire to determine its consistency in testing what they are intended to measure. Reliability was calculated with the help of Statistical Package for Social Sciences (SPSS). A Cronbach Alpha correlation coefficient greater or equal to 0.6 should be accepted (George & Mallery, 2003).

### **Data Analysis and Presentation**

Data was screened to identify omissions and removal of non answered questions. The data collected from the field was analysed qualitatively and quantitatively. For quantitative data analysis, coding and entry was done in electronic spreadsheet with the aid of Statistical Package for Social Sciences (IBM SPSS Version 23). Pearson's correlations coefficient was run to examine the relationship between the independent and dependent study variables which are set out in the objectives of the study.

Results were presented using tables, graphs and charts. Qualitative data was analysed using content analysis. This provided ways of discerning, examining, comparing and contrasting, and interpreting meaningful patterns or themes from data (Miles, Huberman & Saldaña, 2014). Meaningfulness was determined by the particular objectives of the research study.

The regression model is as below:

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

Where

Y = Organisational performance;  $\beta_0$  = Constant

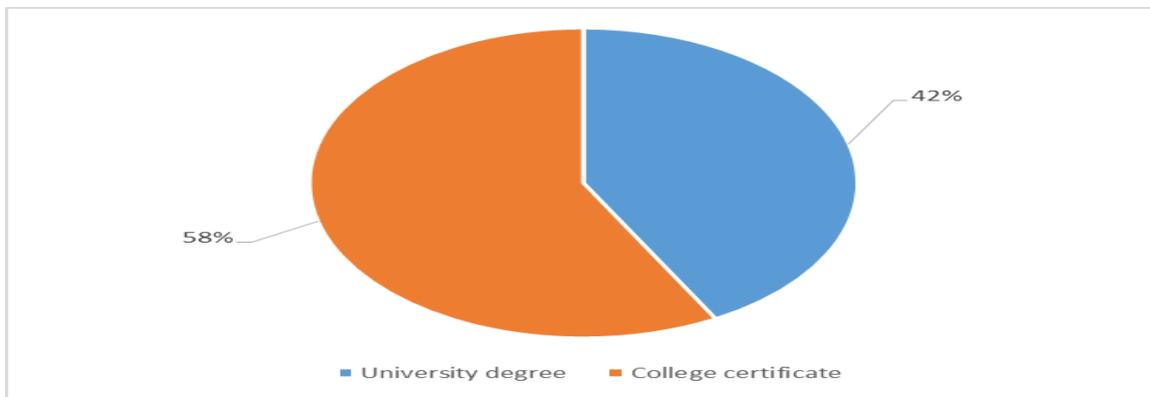
$X_1$ = Transparency;  $X_2$ =Competitive bidding;  $X_3$ = Professionalism,  $X_4$ =Accountability  
 $\beta_1, \beta_2, \beta_3, \beta_4$  = Regression co-efficient;  $\varepsilon$  =Error

**RESULTS AND DISCUSSIONS**

**Background Information**

*Level of Education*

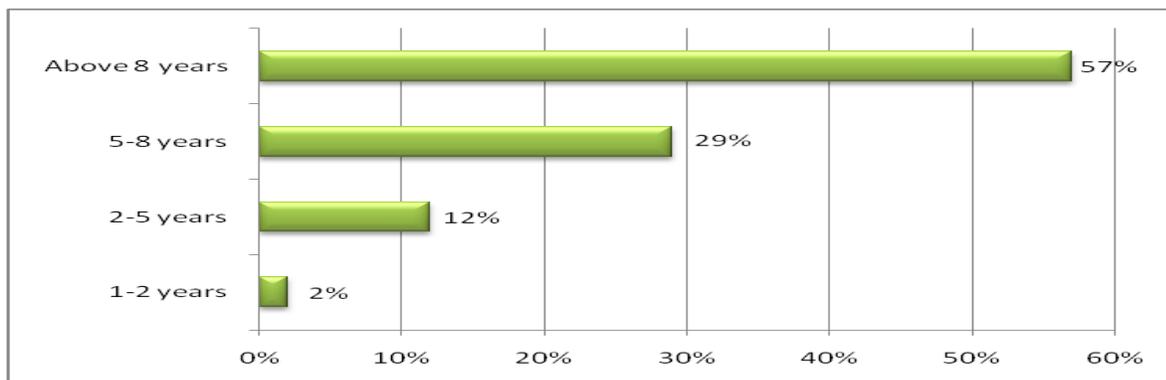
The study set out to determine the level of education of the respondents. As shown in Figure 1, 58% who were the majority had a university degree while 42% had college certificate. This infers that the respondents were literate and could respond to the questionnaire. These findings concur with those of Mitullah (2008) who established that majority of those who run public procurement are ordinary lot whose educational background is adequate. Another research measuring the impact of general education on procurement performance suggests that there is evidence positively linking education and procurement performance in the organization (Raposo & Arminda, 2011). This is an indication that the results obtained from respondents interviewed in the present study can be relied upon.



**Figure 1. Respondents' Levels of Education**

*Working Experience*

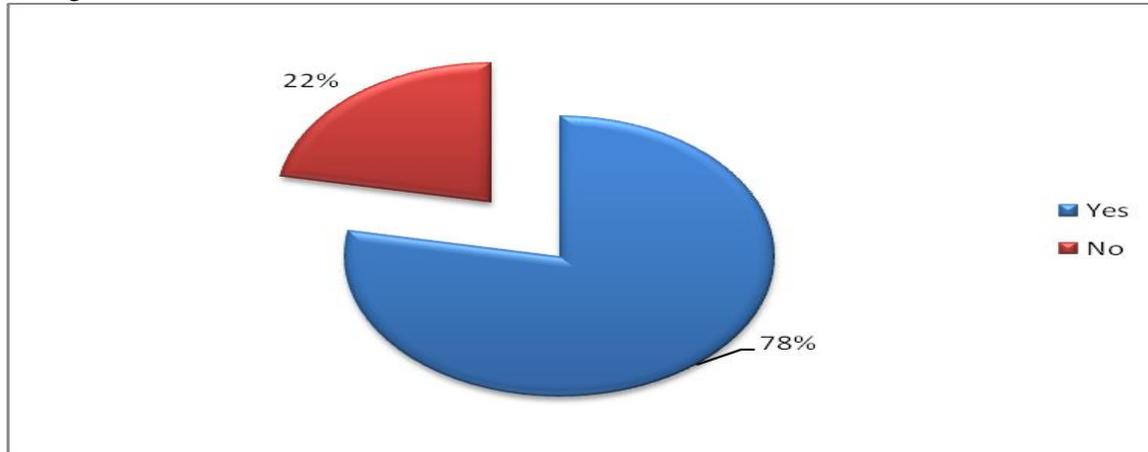
The study also sought to find out the distribution of the respondents by the number of years of service. 57% of the respondents who were the majority, had served the school for a period above 8 years, 29% had served the school for a period between 5 to 8 years, 12% had served the school for a period between 2 to 5 years while 2% had served the school for a period between 1 to 2 years as shown in Figure 4.3. The findings show that the respondents had vast experience and knowledge on the schools and could thus respond well on effects of procurement regulations on performance of public secondary schools in Kenya.



**Figure 2. Distribution of Respondents by Working Experience**

### Training on Procurement and Supplies Management

The study sought to establish the level of procurement training of the respondents. As per the findings shown in figure 3 below, majority of the respondents (78%) had undergone training on procurement and supplies management while 22% had not undergone training on procurement and supplies management as shown in figure 3 below. This shows that the respondents had knowledge of procurement and supplies management.



**Figure 3. Training on Procurement and Supplies Management**

### Ethical Practices

The study sought to assess the effect of ethical practices on performance of public secondary schools in Nairobi City County. As per the findings in Table 1 below, respondents agreed with statements concerning ethical practices within their organizations to a great extent as shown by an average score of 3.80 in that; elimination of conflict of interest had led to better quality goods and services to a great extent as shown by a mean score of 4.01, advertising of procurement opportunities had led to reduction in costs to a great extent as shown by a mean score of 3.88, the schools did not engage in procurement contracts with its employees to a great extent as shown by a mean score of 3.81 and collusion with supplies still occurred in the procurement process in the organisations to a great extent as shown by a mean score of 3.73. The study also sought to establish policies that enhance ethical practices in public secondary schools in Nairobi City County. Respondents stated some of these policies as better use of public resources, promoting a dignified work place and high-quality professional development were respondents' school policies that enhanced transparency in the procurement process. This implied that ethical practices influence procurement performance in the public sector. These findings concurred with Ngari (2012) that ethical practices play a major role in performance of an organisation and that lack of ethical practices is still a challenge in public sector procurement activities.

**Table 1: Ethical Practices**

	Mean	Std.dev
Collusion with supplies still does occur in the procurement process in our organisation.	3.73	1.059
The school does not share confidential information on the procurement process with unauthorised individuals	3.81	1.038
Those involved in the procurement process don't have conflict of interest	3.59	1.043
Elimination of conflict of interest has led to better quality goods and services	4.01	1.167
Advertising of Procurement opportunities has led to reduction in costs	3.88	0.336
<b>Total</b>	<b>19.02</b>	<b>4.64</b>
<b>Average</b>	<b>3.80</b>	<b>0.92</b>

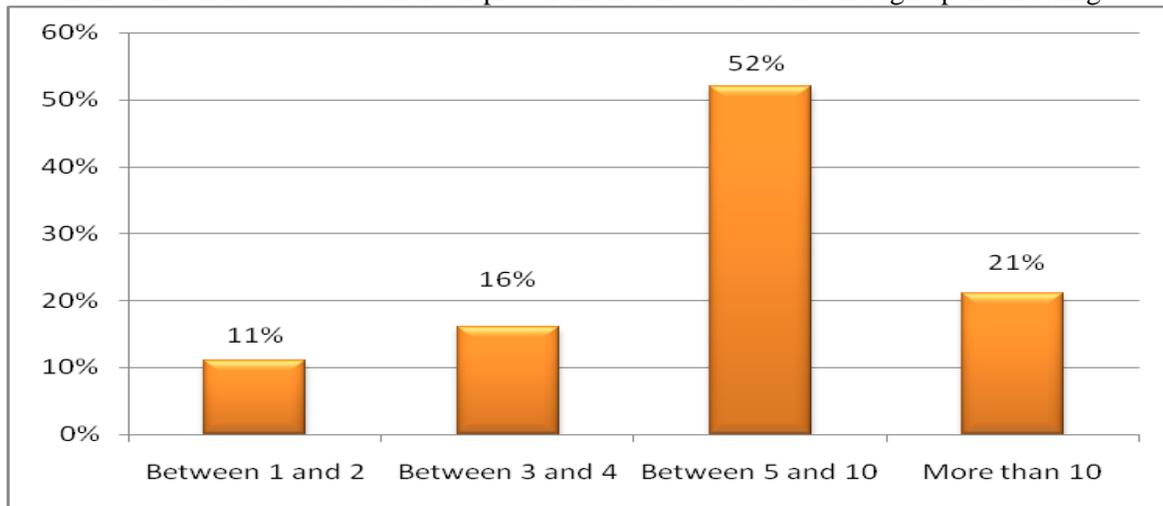
**Transparency**

The study sought to find out the extent respondents agreed with statements concerning transparency within their organization. The findings in Table 2 show that the respondents agreed with the statements on the effects of transparency on performance of their organizations to a great extent as shown by an average score of 3.73 in that; respondents agreed that advertising of procurement opportunities resulted in procurement of quality goods and services to a great extent as shown by a mean score of 3.52, respondents agreed that the use of standard tender documents had led to customer satisfaction to a great extent as shown by a mean score of 3.90, respondents agreed that the involvement of at least three bidders in procurement resulted in cost reduction to a great extent as shown by a mean score of 3.61. Respondents agreed that open tendering was the preferred procurement procedure in the schools to a great extent as shown by a mean score of 3.89. These findings validated the findings by Leavey (2001) that transparency results in cost reduction hence better organisational performance.

**Table 2: Transparency**

	Mean	Std.dev
Our school advertises all procurement opportunities openly	3.52	1.16
Use of open tendering results in procurement of quality goods and services	3.90	1.066
Automation of the procurement process results in reduction in costs	3.61	1.292
Use of standard tender documents has made the procurement process more efficient and faster	3.89	0.952
<b>Total</b>	<b>14.92</b>	<b>4.42</b>
<b>Average</b>	<b>3.73</b>	<b>1.10</b>

The study sought to establish the number of bidders in the procurement process to enhance transparency. The study found that 52% of the respondents who were the majority indicated that between 5 and 10 bidders were invited to quote in normal procurement process, 21% indicated that more than 10 bidders were invited to quote in normal procurement process, 16% indicated that between 3 and 4 bidders were invited to quote in normal procurement process whereas 11% indicated that between 1 and 2 bidders were invited to quote in normal procurement process. These findings concurred with KPMG (2008) which established that there was a low share of procurements that were done through open tendering.

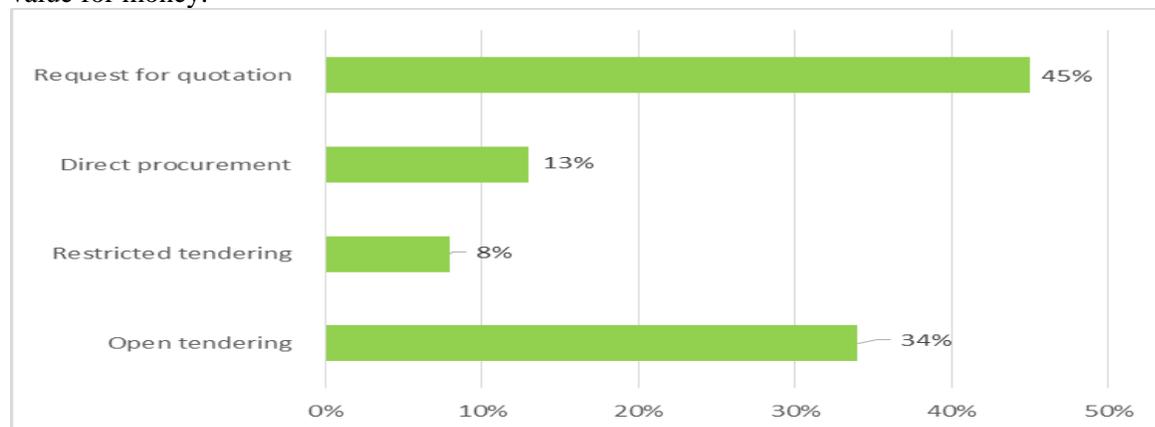


**Figure 4 Bidders in Procurement Process**

**Procurement Methods**

The study sought to establish the most commonly used procurement methods in the public secondary schools in Nairobi City County. The study results established that 34% stated the common procurement method used in their institutions was open tendering, 8% stated restricted tendering, 1% indicated direct procurement and 45% stated request for quotations. World Bank (2014) highlights various methods of procurement including direct procurement, restricted procurement, open tendering, public offer and single

sourcing. Nairobi County applies different methods of procurement. The choice of method is based on the urgency of need, value of the product and constitutional requirements. Establishing the impact of each of the procurement method on Nairobi County’s performance of procurement process is imperative in informing the county about the most effective and efficiency method that can enable the county ensure value for money.



**Figure 5. Procurement Methods**

***Inspection and Acceptance***

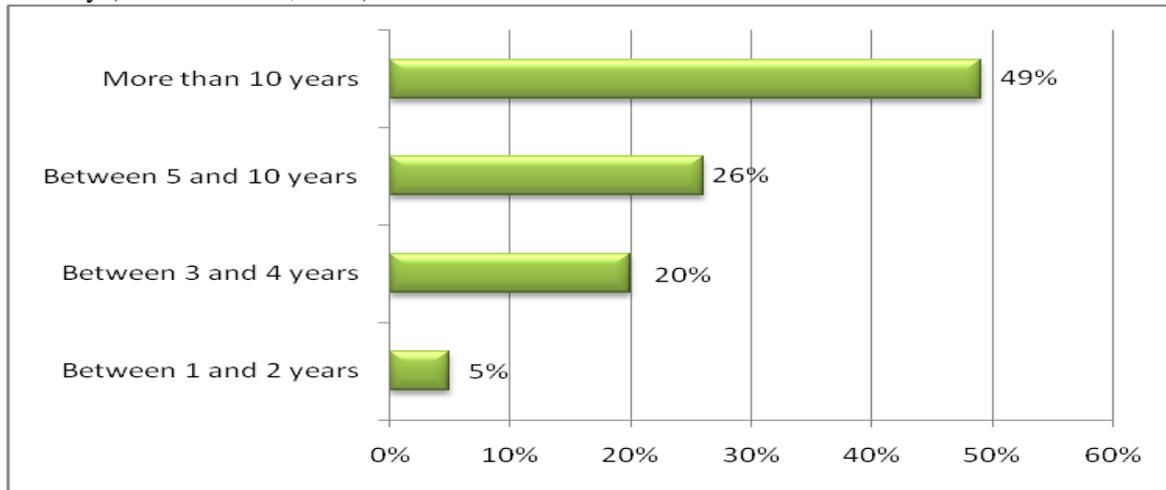
The study found out that respondents agreed to statements concerning Procurement Inspections within their organizations to a great extent as shown by an average score of 3.74 in that; conducting regular Inspections of the procurement process resulted in cost reduction to a great extent as shown by a mean score of 3.67, regular inspections led to procurement of better quality goods and services to a great extent as shown by a mean score of 3.82. Inspections and acceptance of the goods and services were conducted as required by the regulations to a great extent as shown by a mean score of 3.71 and the respondents’ organisation had a well functioning internal audit department to a great extent as shown by a mean score of 3.78. These findings were in agreement with Armstrong (2005) that Inspections are important tools in ensuring accountability and improving performance of public bodies. The inspection helps to ensure that the items or works done is as per the requirement. If the supplier delivers the items which do not meet the requirement, they will be rejected and requested to replace them. That means the delivery period will be prolonged as the organization waits for replacement of materials. Failure to conduct proper inspection may affect the organization by accepting materials which do not meet the need (Tilling, 2004). That means the items cannot perform the work intended for. The process of retendering for the organization to procure the correct item will be long, increasing the time taken to have the correct material. That means that the operation has to be stopped due to lack of materials thus affecting efficiency. This also affects the cost since the organization has to spend more money on another procurement process (Uyarra & Flanagan, 2010). The cost involved also involves accepting items which do not meet the standards, and paying the supplier. This means the items will be in our stock but cannot be used anywhere, therefore increasing the holding cost.

**Table 3. Inspections and Acceptance**

	<b>Mean</b>	<b>Std.dev</b>
Our organisation has a well functioning internal inspections team	3.67	0.940
Conducting regular inspections of projects results in realisation of Cost Reduction	3.82	0.943
Inspections and acceptance of goods and services are conducted as required by the regulations	3.71	1.079
Regular inspections leads to procurement of better quality goods and services	3.78	1.078
<b>Total</b>	<b>14.98</b>	<b>4.04</b>
<b>Average</b>	<b>3.745</b>	<b>1.01</b>

**Procurement Records Management**

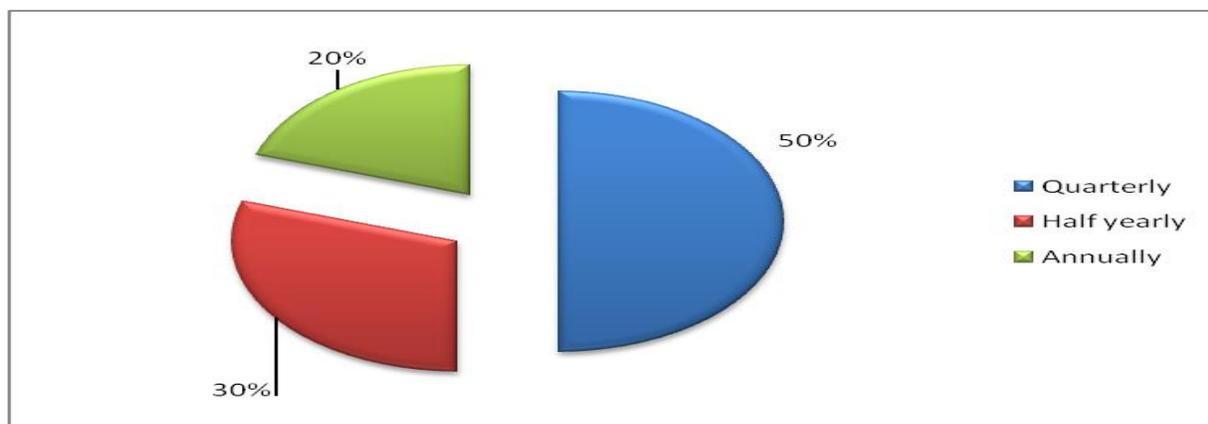
The study sought to find out the durations for which procurement records were kept in the various schools in Nairobi City County. As per the findings in Figure 6 above, 49% of the respondents who were the majority indicated that the records of procurement process in their schools were kept for more than 10 years, 26% indicated that they were kept for periods between 5 and 10 years, 20% indicated that they were kept for periods between 3 and 4 years, whereas 5% indicated that they were kept for periods between 1 and 2 years. The study findings conform to the literature review by Ogola and Wafula (2014). Who stated that works, the inspection committee has to ensure that they inspect the work according to the entire requirement in the Bill of Quantity. They should ensure that the work done meets the standards. They then write an inspection report indicating their observations during inspection and any recommendations, which is signed by all members of the committee. The work should be able to deliver the service for the intended time and purpose. If not done well and approved, it will affect the service delivery (Zhu & Sarkins, 2007).



**Figure 6. Duration for which Records of Procurement are kept**

**Project Inspection**

The study sought to determine how often inspections of ongoing projects were conducted in respondents' schools. Figure 4.8 illustrates that 50% who were the majority indicated that ongoing project inspections were conducted quarterly in their schools, 30% indicated that project inspections were conducted half yearly while 20% indicated that they were conducted annually in their schools. The study findings are in agreement with literature review by Ogola & Wafula (2014) who stated that for works, the inspection committee has to ensure that they inspect the work according to the entire requirement in the Bill of Quantity. They should ensure that the work done meets the standards. They then write an inspection report indicating their observations during inspection and any recommendations, which is signed by all members of the committee. The work should be able to deliver the service for the intended time and purpose. If not done well and approved, it will affect the service delivery.



**Figure 7. Project Inspections**

### ***Procurement Professionalism***

The study sought to determine to what extent procurement professionalism affects performance of the respondents schools. Table 4.5 shows that respondents agreed to statements concerning procurement professionalism within their organization to a great extent as shown by an average score of 3.85 in that; staff with professional qualifications in the field of procurement performed better in their jobs than those without to a great extent as shown by a mean score of 4.01, the school employed procurement staff who had professional qualifications in the field of procurement to a great extent as shown by a mean score of 3.92, having staff with professional led to cost reduction in procurement to a great extent as shown by a mean score of 3.91, staff with professional qualifications occasioned less errors in the procurement process to a great extent as shown by a mean score of 3.88 and the school sponsored staff to attain professional qualifications in procurement to a great extent as shown by a mean score of 3.57. These findings were in agreement with Cousins and Specman (2003) that the calibre of staff in terms of training, education and skills are important in improving the performance of an organisation. According to a study by PPOA (2007) the procurement regulations were meant to ensure that efficient training had been offered to professionals to serve in procurement. It was also revealed by the study by the PPOA that the available expertise at the procurement units did not meet the need for specialized procurement knowledge despite there being steps towards developing a professional procurement workforce. The overall lack of procurement knowledge remains a major weakness to the efficiency of procurement operations in the public institutions.

**Table 4: Procurement Professionalism**

	<b>Mean</b>	<b>Std.dev</b>
The school employs procurement staff who have professional qualifications in the field of procurement	3.92	1.288
The school sponsors staff to attain professional qualifications in procurement	3.57	.137
Staff with professional qualifications in the field of procurement perform better in their jobs than those without	4.01	.049
Staff with professional qualifications occasion less errors in the procurement process	3.88	.251
Having staff with professional leads to cost reduction	3.91	.354
<b>Total</b>	<b>19.29</b>	<b>2.07</b>
<b>Average</b>	<b>3.85</b>	<b>0.41</b>

### **Organizational Performance**

Organisational performance is the realization of the goals of the organization. An obvious measure of performance of any organisation is the amount of money saved by the organisation through prudent procurement practices. However there are a number of performance measurements that can be used when measuring organisational performance: these performance measures typically revolve about efficiency

and effectiveness. This study set out to measure how the procurement functions were able to realise cost reduction, customer satisfaction and of quality goods and services.

**Cost Reduction**

Cost reduction was measured over a five year period. The extent to which the prices of goods and services purchased by the schools were in conformity with the price indices provided by the Public Procurement Oversight Authority (PPOA) was also determined. Another indicator of Cost Reduction is the number of bids rejected due to over pricing or orders that could not be delivered due to under pricing. As per the findings in Table 5 respondents indicated that 56% of the total orders were Conformed to PPOA Price Index in 2011, 62% of the total orders were Conformed to PPOA Price Index in 2012, 49% of the total orders were Conformed to PPOA Price Index in 2013, 71% of the total orders were Conformed to PPOA Price Index in 2014 and 60% of the total orders were Conformed to PPOA Price Index in 2015.

The study found that 21% of the orders could not be delivered due to under-valuation in 2012, 9% of the orders could not be delivered due to under-valuation in 2013, 39% of the orders could not be delivered due to under-valuation in 2014, 10% of the orders could not be delivered due to under-valuation in 2015 and 15% of the orders could not be delivered due to under-valuation in 2016. The study further found that 7% orders were deemed to be overpriced in 2012, 3% orders were deemed to be overpriced in 2013, 7% orders were deemed to be overpriced in 2014, 6% orders were deemed to be overpriced in 2015 and 9% orders were deemed to be overpriced in 2016. From the above data, it can be said that relative costs were highest in the year 2014 and at best in the year 2015. On average, apart from the year 2013, cost reduction was largely achieved. This study is in conformity with Murray (2012), in that measuring performance is important and the purchasing department plays an important role in the supply chain. He stated that an obvious measure of performance and success of a purchasing department is cost reduction and reduction of costs.

**Table 5. Cost Reduction**

Category	2012	2013	2014	2015	2016
Approximately what percentage of the total orders were Conforming to PPOA Price Index	56%	62%	49%	71%	60%
Approximately, how many orders could not be delivered due to under-quoting?	21%	9%	39%	10%	15%
Approximately, how many Orders were deemed to be overpriced	7%	3%	7%	6%	9%

**Timeliness**

The indicators of service delivery in time were analysed and presented as presented in Table 6 which shows that in the year 2012, (22%) of the contracts were successful, in the year 2013, 27% of contracts were successfully delivered in time, in 2014, 35% of the contracts were successfully delivered in time and in the year 2016, there was an impressive improvement on the number of successful contracts successfully delivered in time (50%). Complaints received due to failed contracts s delivered in time decreased as the years progressed, in 2012, 22% of complaints were received, 2013 (28%), 2015 (27%) and 2016 had the least complaints of (9%), this implies that there was improvement in contract delivery successfully delivered in time as the years progressed. The year 2016 had the highest rates (74%) of customer satisfaction due to contract management while the year 2012 had the least rate (36%) of customers satisfied due to contract management. This implies that rate of successful contracts fluctuates depending on the factors affecting the performance of both the suppliers and buyers, a number of complaints are received in the procurement department annually in relation to failed contracts and customer satisfaction varies depending on performance of each contract.

Findings also shows 35% of the respondents indicated that there was satisfaction due to procurement cost saved in 2012, 51% who were the majority indicated that there was satisfaction due to procurement cost saved in 2013, 29% indicated that there was satisfaction due to procurement cost saved in 2014, 21% and 32% indicated that there was satisfaction due to procurement cost saved in 2015 and in 2016 respectively. The study further found that 5% of quality goods/services supplied was enhanced in 2012, 7% of quality goods/services supplied was enhanced in 2013, 9% of quality goods/services supplied was enhanced in

2014, 3% of quality goods/services supplied was enhanced in 2015 and 4% of quality goods/services supplied was enhanced in 2016.

The above findings confirm Onyikwa (2013) in that it is critical to have such performance measures to help an organization to support better decision making, improve communication among the procurement partners, provide opportunity for performance feedback that will be used to prevent or correct problems identified in the process, with a view of motivating and directing behaviors towards the desired end result. The measures are intended to evaluate strategic procurement contribution to profit, supplier relations and customer satisfaction.

**Table 6: Timeliness**

<b>Category</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Satisfaction with reliability of supplies	82%	91%	79%	89%	93%
Complaints due to failed contracts	21%	10%	8%	4%	7%
There is satisfaction due to procurement cost saved	35%	51%	29%	21%	32%
Quality goods/services supplied is enhanced	5%	7%	9%	3%	4%

**Quality of Goods and Services Procured**

The indicators of measure for quality of goods and services were the number of items that were rejected for failing to meet quality standards in a financial year; the number of cases of goods and services failing to meet user requirements as reported by the users. Table 7 shows that 72% of quality items were delivered first time in 2012, 85% of quality items were delivered first time in 2013, 89% of quality items were delivered first time in 2013, 90% of quality items were delivered first time in 2015 and of quality items were delivered first time in 2016.

The study also found that 21% of items were rejected for poor quality in 2012, 13% of items were rejected for poor quality in 2013, 9% of items were rejected for poor quality in 2014, 5% of items were rejected for poor quality in 2015 and 3% of items were rejected for poor quality in 2016. The study further found that 23% orders were cancelled due to poor quality in 2012, 19% orders were cancelled due to poor quality in 2013, 15% orders were cancelled due to poor quality in 2014, 7% orders were cancelled due to poor quality in 2015 and 5% orders were cancelled due to poor quality in 2016.

The study also found that 45% disputes arose due to failure of meeting quality standards in 2012, 32% disputes arose due to failure of meeting quality standards in 2013, 16% disputes arose due to failure of meeting quality standards in 2014, 8% disputes arose due to failure of meeting quality standards in 2015 and 6% disputes arose due to failure of meeting quality standards in 2016. From the above data, it can be said that the quality of goods and services delivered to most schools has improved over the past five years. This is not in agreement with Lambsdorff (2007) who said that the quality of public goods and services delivery has not improved even with the enactment of regulations which were meant to ensure the same.

**Table 7: Quality Goods and Services**

<b>Category</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Percentage of Quality items delivered first time	72%	85%	89%	90%	92%
What percentage of Items were rejected for poor quality	21%	13%	9%	5%	3%
Orders cancelled due to poor quality	23%	19%	15%	7%	5%
How many disputes arose due to failure to meet quality standards	45%	32%	16%	8%	6%

The study established that Procurement planning, allocation of resources, staff competency, contracts management, organizational culture, packaging policy and employees competence were other factors that contributed to procurement performance in the respondents' schools. Respondents suggested that keeping up to date, alerting clients to the need to be aware of the correct procurement rules applicable to their procurement activities, reviewing of procurement policies for below threshold procurement, reviewing of procurement policies for social and other services, preparing procurement documents early and reviewing and changing the terms of existing contracts should be considered in procurement regulations.

**Multiple Regression Analysis**

Since the measures that are used to assess the primary constructs in the model are quantitative scales, multiple regression analysis was used. A multiple linear regression analysis was conducted so as to determine the relationship between the factors affecting performance and the four independent factors namely: ethical practices, transparency, procurement professionalism and inspections and acceptance. The regression equation was:  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ ;

Whereby Y = Performance

- X<sub>1</sub> = Ethical practices
- X<sub>2</sub> = Inspections and acceptance
- X<sub>3</sub> = Procurement Professionalism
- X<sub>4</sub> = Transparency

According to study results in Table 7, the values of R range from -1 to 1 (Saunders *et al*, 2012). The sign of R indicates the direction of the relationship (positive or negative). The absolute value of R indicates the strength, with larger absolute values indicating stronger relationships. From Table 8, R value was 0.843 showing a positive direction of the correlation between the observed and predicted values of the dependent variable. Thus the R value at 0.843 shows a stronger relationship between observed and predicted values in a positive direction. The coefficient of determinant (R<sup>2</sup>) value was 0.724. This shows that 72.4 per cent of the variance in dependent variable (Organisational performance) was explained and predicted by independent variables (ethical practices, transparency, procurement professionalism and inspections and acceptance). This therefore means that other factors not studied in this research contribute 27.6% of the factors affecting organisational performance. This implies that these variables are very significant and they therefore need to be considered in any effort to boost procurement performance in the public secondary schools in the study area in Kenya.

**Table 7: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	.843	.742	.724	.004

- a) Predictors: (Constant), Ethical practices, Transparency, Procurement Professionalism and Inspections and Acceptance
- b) Dependent variable: Performance

The study used one way Analysis of Variance (ANOVA) to test whether the model can predict organisational performance using the independent variables. Green & Salkit (2003) posit that one way analysis of variance helps in determining the significance of the relationship between the research variables. The F-statistic test basically shows whether all the independent variables included in the model jointly influence on the dependent variable. Based on the study results of the ANOVA Test or F-test in Table 4.10 obtained F-t (calculated) was 45.246 greater the F-(table) (12.765) with significance of 0.000 and at a confidence level greater than 95% since the P value was 0.00 (Sig. F < 0.05). This means that the model has predictive power. This implies that there exists a statistically significant relationship between ethical practices, transparency, procurement professionalism, inspections and acceptance and organisational performance.

**Table 8. ANOVA**

Model		Sum of Squares	d.f	Mean Square	F	Sig.
1	Regression	11.72	4	2.932	45.246	.000
	Residual	3.432	53	.0648		
	Total	15.152	57			

NB: F-Critical Value = 12.765

The results of multiple regression analysis obtained regression coefficients t value and significance level as indicated in Table 8. The study conducted a multiple regression analysis so as to determine the relationship between the dependent variable and independent variables. The general form of the equation was to predict organizational performance in public secondary schools from ethical practices,

transparency, inspection and acceptance and procurement professionalism is:  $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon)$  becomes:

$$Y = 7.116 + 0.771X_1 + 0.621X_2 + 0.608X_3 + 0.516X_4$$

**Table 9: Coefficient Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	P-value.
	$\beta$	Std. Error	$\beta$		
(Constant)	7.116	1.074		6.623	.000
Ethical Practices	.771	.149	.768	5.168	.000
Transparency	.621	.124	.545	5.006	.001
Procurement Professionalism	.608	.126	.499	4.824	.003
Inspections and Acceptance	.516	.127	.352	4.063	.005

This indicates that organizational performance in public secondary schools = 7.116 + 0.771\* Ethical practices + 0.621\*Transparency + 0.608\*Inspection and Acceptance + 0.516\*Procurement Professionalism + 1.074.

From the study findings on the regression equation established, taking all factors into account (independent variables) constant at zero organizational performance in public secondary schools was 7.116. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in Ethical Practices would lead to a 0.771 increase in organizational performance in public secondary schools; a unit increase in Transparency would lead to a 0.621 increase in organizational performance in public secondary schools, a unit increase in Inspection and acceptance would lead to 0.608 increase in organizational performance in public secondary schools and a unit increase in procurement professionalism would lead to 0.516 increase in organizational performance in public secondary schools. This infers that ethical practices contributed most to organizational performance in public secondary schools. Based at 5% level of significance, ethical practices had a t-value (5.168 > 1.96) with a .000 level of significance; Transparency had a t-value (5.006 > 1.96) with a .001 level of significance, Inspection and acceptance had a t-value (4.824 > 1.96) with a .003 level of significance and Procurement professionalism had a t-value (4.063 > 1.96) with a .005 level of significance hence the most significant factor was ethical practices.

**CONCLUSION**

The overall objective of the study was to determine the effect of procurement regulations on performance of public secondary schools in Kenya using a case of Nairobi City County. The study established that taking all other independent variables at zero, increase in ethical practices will lead to increase in the scores of the organisational performance. Therefore, the study concludes that ethical practices enhances performance of public secondary schools by ensuring that there is no collusion in the procurement process, eliminating issues of conflict of interest and enhancing confidentiality.

The study also established that increase in transparency will lead to increase in organisational performance. The study therefore concludes that transparency improves performance of public secondary school. This is through ensuring that there is advertisement of procurement opportunities which results in realization of value for money. Automation of the procurement process and the use of standard tender documents has made the procurement process more efficient and lead to cost reduction and customer satisfaction.

The study further established that increase in Inspections and acceptance will lead to increase in the scores of the organisational performance. Therefore that study concludes that conducting inspections and acceptance will enhance performance of public secondary schools. Procurement performance can be

enhanced through ensuring that there is separation of duties such that those involved in procurement do not conduct acceptance checks. This will result in procurement of quality goods and services. Other Challenges such as lack of adequate skilled manpower has been a great hindrance in the adoption of ICT in procurement process. Adoption of ICT will ensure the procurement process is more efficient in terms of transaction cost savings and improved transparency. Manipulation of procurement process by school principals and Boards of management has adversely affected the tendering process. There are still challenges of interference in the procurement process by school principles and some members of the schools Boards of Management.

### **RECOMMENDATIONS**

The study established that ethical practices impact greatly on Performance of public secondary schools in Nairobi County. The study therefore recommends that there should be stiffer penalties imposed for the violation of the codes or procurement ethics. There should also be enhanced scrutiny of all procurement activities to ensure compliance with the ethical codes. Thorough vetting of all suppliers seeking prequalification and those seeking tenders should be done in order to minimize cases of conflict of interest.

The study further established that there is inadequate understanding of the provisions of the PPDA (2005) and the PPDR (2006). The study therefore recommends that public secondary schools management should train all the parties involved in the procurement process in schools on the provisions of Act and Regulations. This will ensure that those involved have better understanding of the processes and therefore will enhance efficiency, transparency and reduce corruption. Also the Boards of management should be more involved in the supervision and control of the entire tendering process to enhance transparency.

Finally it is recommended that the public secondary schools should encourage adoption of ICT in all procurement activities. This would ensure that there is a clear audit trail of all procurement and minimize opportunities for corruption and unethical practices.

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