



## **FACTORS AFFECTING PROCUREMENT PERFORMANCE MEASUREMENT IN TERTIARY TECHNICAL TRAINING INSTITUTES IN MERU COUNTY, KENYA**

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### **Abstract**

*In today's workplace, business pressures are ever increasing and organizations are now faced with persistent public outcry over poor procurement performance. Most of the public institutions have adopted procurement performance measurement initiative in order to realize efficiency in their operations. In line with current development in the world tertiary training institutions are faced with problems of poor service delivery, high cost of procurement, increased lead time and failure to comply with procurement legislation. Tertiary technical training institutions in Meru County have not been spared by these problems. The study main aim was to assess the enablers of procurement performance measurement with a focus on public tertiary technical training institutions in Meru County. Specifically, the study assessed how training, information communication technology, internal controls and ethics influences procurement performance measurement in the public technical training institutions. A Descriptive Research Design was used for the purpose of this study. The target population of the study was forty five (45) procurement practitioners drawn from various committees involved procurement process in the three technical tertiary training institutions in Meru County. A census study was conducted where all procurement practitioners were interviewed. The study concludes that training, ICT, internal controls and ethics are significant in measuring procurement performance measurement. The study recommends that management should prioritize procurement performance measurement and should adopt, own and communicate the strategy to the procurement staff: Enough resources should be provided for training procurement staff, effective integration of procurement function with ICT, strengthen internal control systems and enhance measures to curb unethical practices.*

**Keywords:** Procurement Performance Measurement, Tertiary Technical Training Institutes

### **INTRODUCTION**

Procurement is the acquisition by purchase, rental, lease, hire purchase, license, tenancy, franchise, or by any other contractual means of any type of works, assets, services or goods including livestock or any of the combination and includes advisory, planning and processing in the supply chain system (PPDA, 2015). There are significant developments that have been experienced in Public procurement system in Kenya which includes a shift from a process with no rules in the 1960s, and a process governed by Circulars in the 1970s, 1980s and 1990s then Exchequer and Audit regulations, 2001. The enacting of PPDA by parliament in 2005, subsequent regulations in 2006 and the law becoming operational on 1<sup>st</sup> January 2007 was historical in public procurement reforms (PPOA, 2007). To execute the oversight function, public procurement oversight authority

was set up by PPDA (Juma, 2009). Public procurement is also recognized by laws of Kenya where section 227 (1) of the constitution mentions that when a government entity is involved in any particular contract for goods and services, principles of equitability, fairness, competition and value for money must be adhered to (National Council of Law Reporting, 2010). Public procurement system is now a sober and a recognized process governed by PPDA 2015.

Public procurement contracts take quite a substantial proportion of most country's National Income and public spending budget (Roodhooft and Abbeele, 2006). In the global space Public procurement account for 18.42 percent of world National Income (Mahmood, 2010). These proportions of spending alone provide enough justification for assessing the performance of public procurement processes to ensure those involved are accountable and transparent (Hui et al., 2011).

## **PERFORMANCE MEASUREMENT**

Performance measurement is the application of financial and non-financial data by the executive to make judgments concerning their entities processes being guided by pre-set targets (De Waal 2007; Karuhanga, 2010). Performance measurement is a concept that has developed overtime. Early literature highlights performance measurement initiative with reference to service delivery, value for money and quality standards (de Wit, 1988). Performance measurement developed further and included areas like managing stakeholders, communication, and learning from experience among other areas. More recent development on performance measurement initiative has included the business strategy, control mechanisms, tangible and intangible results from an activity (Nogeste, 2004; Nogeste and Walker, 2005).

The turbulent business environment has resulted to an increasing importance for measuring procurement operations (Neely, 1991). Purchasing performance can either be general or specific, external or internal and functional or individual. In the first approach, evaluation is done on performance of the purchasing department in general, specific areas or activities within the function or the performance of each procurement staff. External assessment on the hand may be carried out by the executive to whom the head of purchasing reports, a group of senior managers, a related function, e.g. finance in respect of budgets, internal audit, outside consultants or by benchmarking. Internal assessments can be conducted by the head of the purchasing function or senior staff. In the third approach, performance appraisals may be used to measure performance of an individual over a given period of time. Functional performance on the other hand concerns itself with outcomes for the entire or in part of the activity (Lysons, 1996). Performance measurement systems (PMS) include: the balanced score card which is not only concerned with management information in the area of financial measures but also include other non-financial aspects linked to business strategy (Kaplan and Norton, 1996); the performance pyramid which aims at bridging strategy to operations where objectives and measures flow among corporate level, business units, business operating systems, department and work units (Lunch and Cross, 1995) and the performance prism which is concerned with measurement of the operations necessary to aid in the achievement of the set objectives and the capabilities required to support and enhance these processes (Neely and Adam, 2000).

The information realized from performance measurement initiative enhances the making of sound judgments, pointing out problems and proposing methodologies to mitigate errors; highlights indicators on crucial processes, enables staff to learn from their short comings and enhances on revision of plans and strategy (Grafton et al., 2010). However, public procurement performance evaluation as an initiative used to drive efficiency in operations experiences a number of problems which includes; maverick buying, insufficient time

and resources, lack of separation of procurement function and tying staff achievements to motivation (Zycus, 2015), lack of uniformity in performance metrics (Knudsen, 1999). Implementation of a clear measurement model that considers consistent dimensions and indicators, timeframes and levels of examinations is key to procurement performance success (Arthur, 2009).

## **GLOBAL PERSPECTIVE ON PROCUREMENT PERFORMANCE MEASUREMENT**

An assessment carried out in 1998 at an education department in Philippines exposed that, textbooks purchased at a value of 320,000 us dollars, were bought at a price higher than the market price, some were sub-standard, and in some cases zero deliveries were done. Insufficient control mechanisms, failure to bring those involved in making poor decisions to book, having procurement rules that were not open resulted to the dismal performance of public entities (OECD, 2006). Balanced score card initiative was being applied by 40 percent of the successful firms in the USA before and up to the end of year 2000. Information obtained by balance scorecard group shows statistics could even be more proposing that more than fifty percent of the interviewed organizations in the world had already embraced the use of this evaluation tool by the middle of 2001 (Downing, 2001).

In Ghana, evaluation of how procurement is fairing in public entities is carried out with reference to compliance to procurement regulations (Schapper, Veiga & Gilbert, 2006). All what is to be adhered to in public procurement is spelt out clearly in the Act (Act 663). The piece of legislation is obliged to ensure proper spending of public resources and ensure probity in public procurement (Osarfo-Marfo, 2003). According to Annual Report of Public Procurement Authority (2011), the assessment results on performance of public entities procurement in year 2011 indicated a decline in performance in comparison to year 2010 as highlighted by the Public Procurement framework of Excellent in the year 2011. In Uganda, procurement functions experiences challenges of not being able to access adequate data on procurement procedures, how public resources are used and indicators hence find it find it difficult when evaluating their performance. This problem can be solved through establishment and implementing clear standards to be achieved and by having sound procurement procedures by managers in the procurement function to enable them come up with fair and accurate data concerning how well procurement entities are doing (Knudsen, 1999). Government organizations in Uganda have been accused of dismal performance and embezzlement of public money, due to non-compliance to legislation provided, poor use of resources allocated to them, poor policies on training and handling of procurement staff, inadequate remuneration and benefits. This necessitated the setting up of public service review and re-organization commission to improve on service delivery to the public, set up of performance measurement systems and standards to enhance efficiency and effectiveness of procurement processes (Public service, 2008).

## **KENYAN PERSPECTIVE ON PROCUREMENT PERFORMANCE MEASUREMENT**

About 60% of Kenyan manufacturing firms measure the efficiency and effectiveness of their procurement processes. These firms evaluate performance of their procurement processes using varied dimensions and indicators but there were problems experienced which include; lack of professionalism in procurement processes, lack of clear performance measurement metrics, poor data management due to operation of manual systems (Rwoti, 2005). Reforms in the public procurement systems in the country are necessary to protect the state from losing money through in-efficiencies and corruption and also enhance on performance of procurement function (Mwangi, 2008). The PPOA review team carried out an evaluation of the procurement process in place at Egerton University in as far as the use of procurement legislation is concerned and identified

a number of challenges which included: Poor record management leading to difficulties in tracking of individual procurement, poor data management due to lack of ICT systems, poor compliance to procurement legislation and lack professional documents for the staff engaged in carrying out the procurement related activities (PPOA, 2011). According to PPOA dissemination notes of June 2012, Procurement assessments have been carried out to establish competences, inadequacies and where support is required. The assessment is concerned with reporting systems, infrastructures and control mechanism. This has been carried out by the PPOA within procuring entities to provide support to Government ministries, Departments and Agencies (MDA) to implement their plans and budgets through procurement for better cash management.

## **PROCUREMENT IN TERTIARY TECHNICAL TRAINING INSTITUTIONS**

Tertiary technical training institutions offer training in technical courses both at certificate and diploma levels. Meru County has three technical training institutions which include: Meru technical, Nkabune technical and Kiirua technical. Cost of managing public TTTI has increased due to increase in the requirement for facilities and resources to cater for increasing number of students. Therefore fees charged by tertiary technical training institutions is still not affordable to many qualified form four graduates. Effectiveness and efficiencies in procurement processes needs to be put in place to help in lowering fees in order to ensure tertiary schooling is accessible to many form four graduates (Bernard, 2008). In tertiary technical training institutions , procurement activities are in infrastructural requirements, purchase of recommended textbooks, purchase of laboratory equipments and purchase of food substances. Tertiary technical training institutions procurement activities are guided by public procurement and disposal Act, 2015; government policies, rules and procedures. Performance evaluation and measurement is guided by a procurement manual for schools and colleges of 2009 which is aimed at securing value for money for the internal customers. Supplier performance is addressed by identifying performance gaps where the eventual result is having capable suppliers. As such making tertiary technical training institutions in Meru County as a perfect target to assess factors affecting procurement performance measurement.

## **STATEMENT OF THE PROBLEM**

Measuring Performance of an organization is key ingredient to delivering efficient operations because whatever gets measured gets done. Many public entities still find it a challenge to overcome problems involving secrecy, inefficiency and corruption in their procurement processes (Nyakundi et al., 2012). Loss of over kshs 50 million annually has been experienced due to in-efficiencies in many tertiary public training institutions (Tom, 2009). Ministry of education lost kshs 4.2 billion in the year 2010 alone due to procurement of items overpriced by bidders (Daniel, 2010). The aforementioned problems could be associated to poor implementation of procurement performance measurements. Procurement performance measurement is hindered by lack of professionalism, lack of independence of PEs, varied dimensions and indicators, poor data management due lack of ICT systems and poor record management (Jackinda, 2007). In more than 50 percent of the public tertiary training entities, standards and the number of items procured differs with the requirements highlighted when awarding tenders; in many occasions these public institutions have instances where development projects have stalled and inadequate procurement budgets (Paul, 2011). Most of the procured products/services in most tertiary technical public training institutions prices are 60 percent higher than the prevailing market prices (PPOA, 2009). TTTI in Meru County also experience the aforementioned challenges which may be attributed to the low priority accorded to procurement performance measurement.

Methodologies used in procurement performance measurements include; K.P.Is, bench marking, procurement audits, performance appraisals and balanced scorecard among others. However, among the three tertiary TTTI in Meru County, the appraisals and audits conducted by T.S.C and Ministry of Education respectively are the main tools applied in performance measurement and largely addresses academic and general performance of the institutions. Studies conducted on procurement performance measurements globally have failed to link procurement performance measurements to performance of public TTTI. However, researches have succeeded in revealing factors affecting procurement performance measurements like training, information communication technology, internal controls and ethics. Given this background, this study therefore intends to bridge the knowledge gap by assessing factors affecting procurement performance measurement in public tertiary technical training institutions in Meru County.

### **OBJECTIVES OF THE STUDY**

The main purpose of carrying out this study was to investigate the factors affecting procurement performance measurement in public tertiary technical training institutes.

### **SPECIFIC OBJECTIVES**

- 1) To investigate the influence of training on procurement performance measurement in public tertiary technical training institutions.
- 2) To find out the influence of information communication technology on procurement performance measurement in the public tertiary technical training institutions.
- 3) To establish the impact of internal controls on procurement performance measurement in the public tertiary technical training institutions.
- 4) To assess the impact of ethics on procurement performance measurement in the public tertiary technical training institutions.

### **RESEARCH QUESTIONS**

The study aimed to answer the following research questions.

- 1) What is the influence of training on the procurement performance measurement in the public tertiary technical training institutions?
- 2) What is the influence of information communication technology on procurement performance measurement in the public tertiary technical training institutions?
- 3) What is the influence of internal controls on procurement performance measurement in the public tertiary technical training institutions?
- 4) What is the influence of ethics on procurement performance measurement in the public tertiary technical training institutions?

### **THEORETICAL REVIEW**

Various models have been formulated to explain on performance and what organizations need to do to enhance performance. These models play a significant role on evaluation of factors affecting procurement performance

measurement initiative. This study was pegged on; **The concept of performance (Balanced score card), Theory of Internal Control, Resource Based Theory and Legitimacy Theory.**

**RESEARCH METHODOLOGY**

A Descriptive Research Design was used for the purpose of this study. The target population of the study was forty five (45) procurement practitioners drawn from various committees involved procurement process in the three technical tertiary training institutions in Meru County. A census study was conducted where all procurement practitioners were interviewed.

Questionnaires were utilized as the main tool for obtaining primary data and were administered to the various procurement practitioners in the three tertiary technical training institutes in Meru County. 45 questionnaires were administered within the three tertiary training institutions in Meru County out of which 40 were returned. Analysis of data on demographic information was carried out with the help of frequency and percentage tables. Mean and standard deviation were also used for descriptive analysis. Correlation statistics were employed to determine the degree of relationship between the dependent and independent variables; regression model of analysis statistics were employed to determine statistical significance between independent variables and dependent variable. Finally the analysis of variance test was used to determine whether the model employed in the study is important in predicting procurement performance measurement.

**RESEARH RESULTS**

The study sought to assess factors affecting procurement performance measurement in public tertiary technical training institutes. The first objective was to find out the extent to which training affects procurement performance measurement. Findings highlights that, most of the respondents supported the statements that training program helps workers to approach procurement performance measurement as a team at mean of 4.60, new employees are introduced to procurement performance measurement during orientation at mean of 4.40, organization organizes for workshops and seminars on procurement performance measurements at a mean of 4.10, the organization has developed manuals that guides workers in conducting procurement performance measurements at a mean of 4.20 Staff competencies on procurement performance measurements is improved through training at a mean of 4.30. These findings are in line with Celestine (2014) who highlighted that the task of determining a cost structure in an organization should be done by professionals. Trained employees are able to apply their professionalism in dealing with procurement related activities. Competencies of employees bring about effective service delivery in a firm. Proper planning can only be realized by competent staff. Use of incompetent personnel in procurement process is likely to bring about inefficiencies and in effectiveness in an organization

**Table 1 Extent to which training influence procurement performance measurement**

	Mean	Std. Dev
Training programs helps workers to approach procurement performance measurement as a team	4.60	.545
New employee are introduced to procurement performance measurement during orientation	4.40	.632

The organization organizes for workshops and seminars on procurement performance measurement regularly	4.10	.783	
The organization has developed manuals that guide workers in conducting procurement performance measurement	4.20	.608	
Staff competencies on procurement performance measurements is improved through training	4.30	.608	The second objective of the study

aimed at investigating the influence of I.C.T on procurement performance measurement. Findings showed that ,respondents agreed to the statements that, tertiary technical training institutions had installed systems to enhance procurement performance measurements rated at a mean of 4.18, I.C.T has increased accuracy and reliability of procurement data for procurement performance measurement at a mean of 4.23 I.C.T systems has helped in data analysis at a mean of 4.47, I.C.T systems helped determine purchasing efficacy at a mean of 4.42, I.C.T system has assisted in availing data for performance measurement timely at a mean of 4.23 and that computer training on procurement performance measurement is provided by the organization at a mean of 3.62. These findings are in line with Neely (2008) who highlighted that I.C.T infrastructure facilitates acquiring of information; sorting; analysis; interpretation and dissemination process making it easy to carry out performance measurement.

**Table 2 Extent to which I.C.T influence procurement performance measurement**

	Mean	Std. Dev
The institution has installed systems that enhances procurement performance measurement	4.18	.844
ICT infrastructure has increased the accuracy and reliability of data used for procurement performance measurement	4.23	.768
The system has helped in data analysis thereby efficiency of procurement performance measurements	4.47	.679
The system has helped in determining purchasing efficiencies	4.42	.501
The system has helped in availing information required timely for procurement performance measurement initiative	4.23	.660
The institution has provided computer training on procurement performance measurements	3.62	.628

The third objective of the study aimed at finding out the extent to which internal controls influences procurement performance measurements. The findings indicate that, respondents agree to the statements that organization conducts periodic audits to assess compliance at a mean of 4.32 , organization conducts periodic appraisals at a mean of 4.15, losses and fraud are prevented through regular procurement measurements at a mean of 4.08, goods and services procured are compare with the L.P.O at a mean of 4.20, receiving, opening and evaluation of bids is done by different tender committees to increase the reliability of data used for procurement performance measurement at a mean of 4.35 and that yearly budgets are compared against actual spending to assess differences at a mean of 4.27. These findings concur to the study conducted by De Wall, (2006) who highlighted that systems related to PMS such as evaluations of staff performance and reward

management among others influences workers towards fostering a performance driven behavior which promotes use of PMS.

**Table 3. Extent to which internal controls influence procurement performance measurement**

	Mean	Std. Dev
Organization conducts periodic audits to assess compliance.	4.32	.694
Organization conducts periodic appraisals.	4.15	.712
Losses and fraud are prevented through a regular procurement performance measurements	4.08	.694
Goods and services are compared with the L.P.O	4.20	.823
Receiving, opening and evaluation of bids is done by different tender committee.	4.35	.662
Yearly Budgets are compared against actual spending to assess variances.	4.27	.640

The fourth objective of the study aimed at investigating the effects of ethics on procurement performance measurements. Findings indicates that, most of the respondents agreed with the statement that guidelines from the Ministry assist in procurement performance measurements at a mean of 4.15. Ethical culture helps in conducting ethical procurement performance measurements at a mean of 4.15, PPDA procedures are followed in procurement performance measurements at a mean of 4.27 and low morale on implementation of procurement legislation results to unethical issues in procurement performance measurements at a mean of 4.32. These findings are in line with research findings by Ngina (2013) who highlighted that ethics have a significant relationship with procurement performance measurement. According to the same study, ethical principles such as procurement law, agency rules and regulations among other guide procurement staff in practicing professionalism by allowing performance measurements to be conducted.

**Table 4. Extent to which ethics influences procurement performance measurement**

	Mean	Std. Deviation
Guidelines from the ministry assist in the procurement performance measurements	4.15	.533
Ethical culture helps in conducting ethical procurement performance measurements	4.15	.744
PPDA procedures are followed when conducting procurement performance measurements	4.27	.640
Low morale on implementation of procurement legislation results to un-ethical issues in procurement performance measurement	4.32	.656

**Correlation Analysis**



Correlation coefficients measure the degree of relationship between independent variables and dependent variable. The aim this study was to find out whether there is a linear relation between procurement performance measurement (dependent variable) and independent variables that is (training, I.C.T, internal controls and ethics) 5% level of significant. If the significant figure is lower than 0.05 ( $P < 0.05$ ) then the independent variable it is considered statistically significant. If the significance figure is more than 0.05 ( $P > 0.05$ ) the relationship between independent variable and dependent variable is not statistically significant.

**Table 5: correlation matrix**

		Procurement Performance measurement	Training Information communication technology	Internal Ethics control	Performance variables mean	
Procurement measurement	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	40				
Training	Pearson Correlation	.042	1			
	Sig. (2-tailed)	.034				
	N	40	40			
Information communication technology	Pearson Correlation	.046**	.378*	1		
	Sig. (2-tailed)	.000	.016			
	N	40	40	40		
Internal control	Pearson Correlation	.001	.213	-.038	1	
	Sig. (2-tailed)	.033	.187	.818		
	N	40	40	40	40	
Ethics	Pearson Correlation	.032*	-.005	-.092	-.074	1
	Sig. (2-tailed)	.036	.977	.574	.649	
	N	40	40	40	40	40
Performance variables mean	Pearson Correlation	.c	.c	.c	.c	.c
	Sig. (2-tailed)	.	.	.	.	.
	N	40	40	40	40	40

\*. Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

Table 5 highlights the correlation between the independent variables (. (Training, Ethics, Internal controls and Ethics) and procurement performance measurement in tertiary technical training institution in Meru County. The findings exposed that there is a positive relationship which is statistically significant between training and

procurement performance measurement ( $r = 0.42, P = 0.034 < 0.05$ ). there is a weak positive relationship which is statistically significant between I.C.T and procurement performance measurement ( $r = 0.046, P = 0.000 < 0.05$ ); There is a weak positive relationship which is statistically significant between internal controls and procurement performance measurement ( $r = 0.001, P = 0.033 < 0.05$ ); There is a weak positive relationship which is statistically significant between ethics and procurement performance measurement ( $r = 0.032, P = 0.036 < 0.05$ ).

**Regression Analysis**

Regression analysis was conducted by the researcher to determine the extent in which a in change independent variables (Training, I.C.T, Internal Control and Ethics), would cause a variation in dependent variable procurement performance measurement).

**Table 6 Model Summary**

Model	R	R square	Adjusted square	R	Std Error of the estimate
1	.759 <sup>a</sup>	.748	.559		.435

R – square is the co-efficient of determination that explain the percent change in the dependant variable that can be explained by the change in the independent variables or the variation in the dependent variable (Procurement Performance) that is explained by all the four independent variables. (Training, I.C.T, Internal Controls and Ethics). From the table 4.10 the value of R-square is 0.748. This indicates that 74.8% of changes in procurement performance measurement were explained by Training, I.C.T, Internal Controls and Ethics. Therefore the remaining 25.2% shows that there are factors not used for in this study that affects procurement performance measurement.

**Table 7 Analysis of Variance**

ANOVA<sup>a</sup>

Model	Sum Squares	ofDf	Mean Square	F	Sig.
Regression	2.655	4	.664	0.4	0.001 <sup>b</sup>
Residual	13.120	35	.375	0	
Total	15.775	39			

Dependent variable; procurement performance measurement.  
 Predictor; (constant), Training, ICT, Internal controls and ethics.

Analysis of variance was conducted to find out whether the factors employed to conduct this study are important in predicting the procurement performance measurement. At 0.05 level of significance, the test results shows that, in this model the independent variables; Training, ICT, Internal controls and ethics are critical in predicting procurement performance measurement as reflected by significant value 0.001 which is less than 0.05 level of significant ( $P = 0.001 < 0.05$ ).

Therefore it can be concluded that, there is a significant association between the dependent variable (Procurement performance measurement) and the independent variables (Training, ICT, Internal controls and ethics).

**Table 8 Model Coefficient**

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	2.665	1.609		1.656	.007
Training	.022	.147	.137	.145	.009
ICT	.003	.145	-.125	.000	.048
Internal Control	.041	.158	.077	.021	.026
Ethics	.034	.155	.348	.050	.038

a. Dependent Variable: procurement Performance measurement

Regression analysis was conducted to determine the statistical significant relationship between the independent variables notably, (X<sub>1</sub>) training, (X<sub>2</sub>) information communication technology, (X<sub>3</sub>) Internal controls and (X<sub>4</sub>) ethics and dependent variable (Y) procurement performance measurement.  $Y = a + \beta_1.X_1 + \beta_2.X_2 + \beta_3.X_3 + \beta_4.X_4 + e$

From the regression findings, the substitution of the equation becomes

$$Y = 0.137X_1 - 0.125X_2 + 0.077X_3 + 0.348X_4$$

According to equation taking all factors (Training, ICT, Internal controls and ethics) at zero, measurement of procurement performance will be zero. The results given also indicates that taking all other independent variables at zero, a unit increase in training leads to a 0.137 rise in procurement performance measurement; a unit increase in ICT results to a 0.125 decrease in procurement performance measurement; a unit rise in internal controls leads to 0.077 rise in procurement performance measurement; a unit increase in ethics results to 0.348 rise in procurement performance measurements. This revelation is echoed by Ngina (2013) who found that procurement performance measurement is influenced by training, information communication technology, internal controls and ethics.

From table 8 above, the findings also indicate that at 5% levels of significant, training was an important predictor of procurement performance where (P < 0.009 < 0.05); internal controls was a significant determinant of procurement performance measurement where (P = 0.048 < 0.05); internal controls was a significant determinant of procurement performance measurement where (P = 0.026 < 0.05) and ethics was an important predictor of procurement performance measurement where (P = 0.038 < 0.05).

**CONCLUSIONS**

The study draws conclusions from the findings and notes that, procurement performance measurement in public tertiary technical training institutions is affected by Training, ICT, Internal controls and ethics. This study concludes that internal control is the first factor that affects procurement performance measurement in public tertiary technical training institutions. The regression model of coefficient shows that internal controls determine procurement performance measurements. This implies that if internal controls are increased by a unit, this would lead to an increase in measurement of procurement performance. The study shows that internal

control factors such as conducting procurement audits, appraisals, controlling fraud and losses through regular procurement measurements and receiving ,opening and evaluation of bids to be done by different tender committees affected procurement performance measurements in tertiary technical training institutions.

Ethics is the second important factor that affects procurement performance measurement in public tertiary technical training institutions. The regression model of coefficient shows that if ethics factors are increased by a unit, this would automatically increase the levels of procurement performance measurement. According to the study, ethics factors such as guidelines from the ministry, ethical culture, complying with PPDA procedures affected procurement performance measurement in public tertiary technical training institutions.

Training is the third important factor that affects procurement performance measurement in public tertiary technical training institutions. The regression model of coefficient shows that training have a significant influence on procurement performance measurement. If training is raised by a unit, procurement performance measurement would also increase. Training factors like induction, skills and knowledge improvements, team work influence procurement performance measurement in public tertiary technical training institutions.

Finally the study concludes that ICT is the fourth important factor that affects procurement performance measurement in public tertiary technical training institutions. The regression model of coefficient shows that ICT have a significant influence on procurement performance measurement. ICT factors like level of automation, timely provision of information, purchasing efficacy, data management and computer literacy were found to influence procurement performance measurement negatively.

## **RECOMMENDATIONS**

To ensure a successful implementation of procurement performance measurement initiative, the leadership team of tertiary technical training institutions must demonstrate evident ownership of the procurement performance measurement initiative, communicating clearly about the details, value and its importance to an organization.

The management of tertiary technical training institutions should invest extensively in employee training in procurement performance measurement. It is necessary that institutions take responsibility of ensuring procurement staff have skills required in procurement performance measurement. On the same note orientation and induction of new employees on procurement performance measurements should be compulsory after the recruitment process as this helps in understanding the initiative and gives a starting point.

Tertiary public technical training institutions should effectively integrate procurement functions with ICT based systems to provide solution to data management problems. Proper controls on the implementation of PPDA and guidelines provided by the Ministry in procurement manual on procurement performance measurements should be taken seriously by sanctioning those who act contrary to the provisions.

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