



EFFECT OF INFORMATION TECHNOLOGY USE ON EFFICIENCY OF TENDERING PROCESS IN PUBLIC SECTOR: A CASE OF EMBU COUNTY, KENYA

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Abstract

In Kenya, the Public Procurement and Disposal Act seeks among other things to promote competition, promote the integrity and fairness of procurement and disposal procedures, increase transparency and accountability the tendering process, and increase public confidence in those procedures. Despite the provision of Public Procurement and Disposal Act, the tendering process has been faced by corruption. This study aimed to investigate the effect of information technology use on efficiency of tendering process in public sector in Embu County, Kenya. The study adopted a descriptive research. The study used a purposively sampled of 33 members of the tendering committee in the county government of Embu. A structured questionnaire was used to collect data needed in the study. The study found out that inadequate information technology affected the tendering process to a large extent. The study also revealed that the tendering process in public sector is statistically significantly ($P = 0.000$) affected by use of information technology. The study concluded that among many factors that affect the

efficiency and effectiveness of the tendering process in public sector, information technology is crucial. The study recommended that the government should embrace use of information communication technology in the procurement departments to enhance transparency of tendering awards among the applicants, and to minimize misappropriation of public funds by few individuals in the public sector.

Keywords: Information technology, Information communication technology, Tendering process, Procurement process

INTRODUCTION

Tendering in the public procurement is a procurement procedure whereby potential suppliers are invited to make a firm and unequivocal offer on the price and terms in which they will supply specified goods, services or works which on acceptance shall be the basis of a subsequent contract (Lysons & Farrington, 2006). Tendering is based on the principles of competitiveness, fairness and accessibility, transparency, openness and probity (World Bank, 2008). Internationally, all Public entities are subjected to open tendering by law so as to prevent fraud, waste, unethical practices or local protectionism (Global Trade Negotiation, 2006).

The tendering is also recognized as a process of making an offer, bid or proposal, or expressing interest in response to an invitation or request for tender. Organizations seek other businesses to respond to a particular need, such as the supply of goods and services, and select an offer or tender that meets their needs and provides the best value for money (Wogube, 2011). Clients all over the world are ready and willing to challenge tendering processes and decisions (Public Procurement Oversight Authority [PPOA], 2012). These has disputed tenders, or “bid protests” in the US, have increased exponentially over the last few decades as austerity leads to fewer and more competitive tenders (Rabecca, 2013). At the same time, governments have introduced more regulations, giving more ammunition to aggrieved unsuccessful bidders. This development is particularly pronounced in countries such as the UK and Canada, where litigation resulting from public procurement is a relatively recent phenomenon (Mahmood, 2013).

In Africa, tendering processes are faced by myriad challenges as a result of poor governance that leads to the delay of the process. Kabaj (2003) contends that an efficient public procurement system is vital to the advancement of African countries and is a concrete expression of their national commitments to making the best possible use of public resources. For instance, in Tanzania the tendering procedures take too long to be performed without clear known reasons (Moronda, 2014). Evaluation of tenders takes

several weeks, for both big and small projects, delaying the award and approval of contracts. In many cases, tender evaluation durations exceed tender validity periods. As a result, the rate of construction projects execution is very low. For instance, in Tanzania about 40%-50% of the budget allocated to the construction projects was used due to the delays in tender evaluation process.

In Kenya, to manage effectively and more efficiently the tendering process, procuring entities through the existing legal framework are required to firstly consolidate plans to provide the entity's corporate procurement plan which before its implementation must get the accounting officer's approval. Basheka (2008) asserted that that a tendering process is an instrument for implementation of the budget and should be prepared by the user departments with a view to avoiding or minimizing excess votes in the entities' budgets and to ensure that procurements do not proceed unless there are funds to pay for them. This implies that all procurement plans must be well integrated into the budget process based on the indicative budget as appropriate and in compliance with the procurement law (Public Procurement and Disposal Act, 2005). The public tendering system in Kenya has evolved from a crude system with no regulations to an orderly legally regulated Procurement System. The Government's procurement system was originally contained in the Supplies Manual of 1978, which was supplemented by circulars that were issued from time to time by the Treasury (PPOA, 2012). The Manual created various tender boards for adjudication of tenders and their awards.

Kakwezi and Nyeko (2010) argues that the procurement departments of public entities in Kenya are faced with the problem of not having enough information about the procurement procedure, its inputs, outputs, resource consumption and results, and are therefore unable to determine their efficiency and effectiveness. This implies that such a problem requires establishment of clear procurement procedures and performance standards. Performance standards when adopted can provide the decision-makers in the procurement department with unbiased and objective information regarding the performance of the procurement function. According to the World Bank Group's 2007 country assessment report, the quality of service in the Kenya Public Sector was very low prior to 2003 due to inadequate accountability and responsibility, as well as poor governance. Most organizations executive management has realized that managing tenders must emerge as a critical core competency if organizations are to increase revenue (Akech, 2011). According to Adetola (2000), procurement plays a very vital role in economic growth and development of any country if well managed. Currently, there are a myriad of determinants of effectiveness and efficiency of tendering process in the county governments of Kenya, which include but not limited to transparency, poor linkages between

procurements and expenditures, delays and inefficiencies, poor records management, bureaucracy, rampant corruption, political interests, information communication technology, employee performance, tendering duration, and ethical practices among others. Kioko and Were (2014) pointed that procurement staff competencies, legal framework, institutional culture and information communication technology (ICT) positively affect the efficiency of the procurement function in public institutions in Kenya. Thus, it was against this background that the study sought to investigate the effect of information technology on tendering process with reference to public sector in Embu County, Kenya.

Value of the study

In Kenya, the Public Procurement and Disposal Act seeks among other things to promote competition, promote the integrity and fairness of procurement and disposal procedures, increase transparency and accountability the tendering process, and increase public confidence in those procedures (Public Procurement Oversight Authority, 2009). Despite the provision of Public Procurement and Disposal Act, the tendering process in Kenya has been faced by corruption issues.

There are a couple of studies that have showed the challenges hindering the tendering process. For instance, Bukhala (2003) revealed that the supplies manual did not have sanctions or penalties against persons who breached the regulations. In the same line, a report by Government of Kenya (2010) showed that the public procurement still suffers from fraud and misconduct with public officials distorting the regulations to restrict the participation of interested firms in procurement, or still direct the outcome of others. Further, a survey conducted by National Treasury (2015) in Kenya showed that 30 per cent of the state corporation's award tenders fairly while 14 per cent are involved in procurement malpractices. The National Treasury Survey showed that the government losses more than Sh70 billion annually due to fraudulent manipulations in procurement process. Additionally, Ayoti (2012) found that there was practice of favoritism, tribalism and nepotism in the tendering process in public sector in Nyeri County, during tenders grant. Therefore, it is evident that the tendering process is faced by myriad of challenges which if not address it can lead to losses of government funds.

Thus, this study sought to investigate the factors affecting the tendering process in the public sector in Embu County government in Kenya by specifically investigating the influence of information technology on tendering process in the public sector in Embu County Government; The findings would also be important to the Procurement officers since they would be informed on the flaws that exist in the tendering process and therefore seek for ways to address such challenges.

THEORETICAL AND LITERATURE REVIEW

The study employed contingency theory. Contingency theory is a class of behavioral theory that claims that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, the optimal course of action is contingent (dependent) upon the internal and external situation. Several contingency approaches were developed concurrently in the late 1960s. Historically, contingency theory has sought to formulate broad generalizations about the formal structures that are typically associated with or best fit the use of different technologies. The perspective originated with the work of Joan-Woodward (1958), who argued that technologies directly determine differences in such organizational attributes as span of control, centralization of authority, and the formalization of rules and procedures.

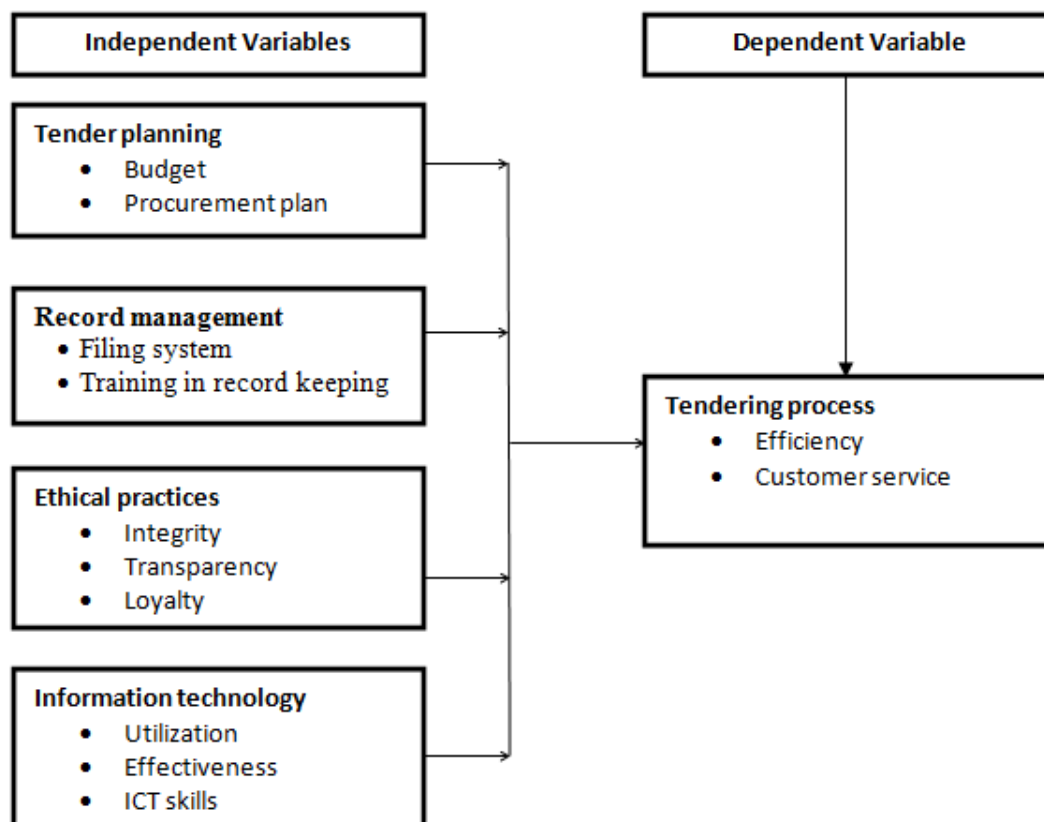


Figure 1: Diagrammatical representation of the interaction of variables in the study

Information technology plays a significant role in tendering process. Through e-procurement, e-monitoring, and e-tendering, information technology helps contractors to improve and enhances their business performance. This implies that in order to improve business performance, there is need for firms to adopt information technology to manage their tendering process, since it has a positive impact on the tendering process. Record management also plays a key role in

tendering process among organizations. This is because it enhances accuracy of the tendering activities in the organization. In addition, record management also enhances accessibility of tender and procurement activity documents.

The ethical practices such as integrity, transparency and loyalty and respect for rules and fairness may have a great impact on the effectiveness of the tendering process among organizations. Tender planning on the other hand, involves the needs that are not well identified and estimated, unrealistic budgets and inadequacy of skills of procurement staff responsible for procurement. This promotes the effectiveness of the tendering process among organizations because it informs the activities to be adopted by the procurement officers.

This chapter has reviewed literature on factors influencing tendering process in the public procurement law. (Kimaiyo, 2012) has established that according to Public Procurement and Disposal Act 2005 and Regulation Procurement play a very important role in Economic growth and Development of a country if well managed while Patrick, Mamati, and Jonathan (2013) have established that it is vital to ensure that time taken in tendering process is reasonable and is compliant within the law. These researchers have however not addressed the factors influencing tendering process in the public procurement hence this research fills in that gap.

Ahmed (2014) review of the ethics and efficiency of tendering process has established that corruption has hindered the tendering process. Skitmore (2013) found out that, there was witnessed unethical conduct, in the form of unfair conduct, negligence, conflict of interest, collusive tendering, fraud, confidentiality and propriety breach, bribery and violation of environmental ethics. Ahmed and Skitmore have however not addressed the factors influencing tendering process in the public procurement hence this research fills in that gap. Akech (2011) found that that councilors in Uganda were pushed out of Tendering process and were not allowed to get involved in the tendering process to avoid Possibility of compromising their supervisory role while Patrick, Mamati, and Jonathan, (2013) indicated that the move was to eliminate the possibility shoddy work, since councilors were to find themselves in a position where they have to grill one of their own.

These researchers have however not addressed the factors influencing tendering process in the public procurement hence this research fills in that gap. Musanzikwa ((2013) in his study found that it was difficult to comprehend the Financial Common corrupt practices in public procurement thus included public officers, often under the influence of powerful politicians and businessmen, only inviting preferred firms, favoring certain firms at the short-listing stage, designing tender documents to favor particular firms and releasing confidential information. On the other hand, Ahmed (2014) found that unethical practices in Public Procurement was also

facilitated by the lack of transparency in the system; the applicable procedures were invariably inaccessible to the public. These researchers have however not addressed the factors influencing tendering process in the public procurement hence this research fills in that gap.

Patrick, Mamati and Jonathan, (2013) review on training of employees and efficiency of tendering process found that the strategic procedure of employee training and development needs to encourage creativity, ensure inventiveness and shape the entire organizational knowledge that provides the organization with uniqueness and differentiates it from the others. Heinritz, (2014) and Koppelman, (2014) found that through training participants acquire new sets of values and attitudes. The appreciation of their inherent but untapped potential and reinforce their self-confidence and sense of autonomy as opposed to dependency they further content that for any project to be implemented successfully people involved must be trained. The training offered must be of quality to ensure effective implementation of tendering process. If this is lacking then the tendering process will be adversely affected (Masunga, 2007). According Kamau (2012); Kimaiyo, (2012); Aggrey (2011) review on record management and efficiency of tendering process found that records for procurement are crucial in tendering process. These researchers have however not addressed the factors influencing tendering process in the public procurement hence this research fills in that gap.

METHODOLOGY

The study adopted a descriptive research design that helps to provide answers to the questions of who, what, when, where, and how associated with a particular research problem. Descriptive research was used to obtain information concerning the current status of the phenomena and to describe "what exists" with respect to variables or conditions in a situation. The design is used in preliminary and exploratory studies to allow researchers to gather information, summarize, present and interpret for the purpose of clarification. According to Page and Meyer (2014), descriptive research design is intended to produce statistical information about aspects of education that interest policy makers. The choice of the descriptive research design was made based on the facts that in this study research was interested in the state of affairs already existing in the field and no variable was manipulated. This design was also appropriate since the researcher got information from those who have practical experience with the problem to be studied.

The study population comprised of 33 members of the tendering committee in the county government of Embu (Embu County Government Human Resource Office, 2017). Since the population was small the study sample consisted of all members of the tendering committee. Census sampling technique was applied to select the study sample because the sample was

small. A structured questionnaire was used to collect data needed in the study. Content validity was used to validate the tool of data collection. The questionnaire was given to experts in the field of business management for validation. Modification on the instruments was made based on their recommendations. The reliability of the questionnaire was determined using Cronbach's Alpha Method whose score was 0.83 which lies between 0.7 and 0.9, then the tool was considered reliable (Nunually, 1978). Both descriptive and inferential statistics were used to analyze quantitative data. Quantitative responses based on Likert scale were coded in the computer using Statistical Package for Social Sciences (SPSS) version 22. Processed data were summarized in tables and then presented using simple frequencies and percentages. Chi-square test for independence was used to analyze whether there is a statistical significance between information technology and tendering process in public sector.

RESULTS

Demographic characteristics of respondents

The demographic characteristics of the respondents included gender, age bracket, education level, and years of working experience. Two thirds (66.7%) of the respondents were female while the remaining 33.3% of them were male. This implies that the respondents were well represented by gender. On the age brackets of the respondents, slightly more than half (55.6%) of the respondents were between 41-50 years, 22.2% of them were between 31-40 years, 14% of them were 20-30 years, and only 7.4% of them were 51 years and above. This shows that there is need for future recruitment to consider employing the youth because majority of the people working in the procurement department of Embu County Government are adults, above forty years of age.

The study also sought to examine the education Level of the respondents. More than half (59.3%) of the respondents had attained bachelor's degree level of education, 25.9% of them had post graduate qualification and only 14.8% of them had a diploma qualification. This was an implication that the study respondents had no issue with filling the questionnaire. With regards to the years of work experience, slightly more than half (55.6%) of the respondents had a working experience of 5 years and below. Another 14.8% of them had 6-10 years of experience and the remaining percentage them were distributed as follows; 11-15 years (14.8%) and 16-20 years (14.8%). This implies that majority of the people working in the procurement department of Embu County Government have a considerable working experience that allowed them to provide sufficient information for study questions.

Effects of Information Technology on Tendering Process in Public Sector in Kenya

The study investigated the influence of information technology on tendering process in the Public Sector in Embu County Government. A five point Likert scale was used to rate the respondents' perception toward the effects if information technology on tendering process in the public sector in Embu County. Table 1 shows the distribution of the study participants' responses on various items.

Table 1: Effect of Information Technology on Tendering Process

Item		5	4	3	2	1	M	SD
There are enough computers in the office;	F	4	19	4	4	–	3.6	0.8
	%	15.0	55.4	14.8	14.8	–		
There are enough IT specialists in the Departments;	F	5	17	–	4	1	3.8	1.1
	%	18.5	63.0	–	14.8	3.7		
The tendering process is computerized;	F	–	14	4	9	–	3.2	0.9
	%	–	51.9	14.8	33.3	–		
All tenders by the county government are computerized;	F	–	7	9	11	–	2.9	0.8
	%	–	25.9	33.3	40.7	–		
Advanced electronic system for procurement is adopted by Embu County Government;	F	–	12	1	14	–	3.2	0.9
	%	–	44.4	3.7	51.9	–		
Inadequate information technology affected tendering process to a large extent;	F	6	6	5	6	4	3.1	1.4
	%	22.2	22.2	18.5	22.2	14.8		
Use of information technology highly affects the tendering process;	F	4	15	–	4	4	3.4	1.3
	%	14.8	55.6	–	14.8	14.8		
The departments have adequately invested in information technology to streamline the procurement process and to reduce inventory costs;	F	8	13	–	6	–	3.9	1.1
	%	29.6	48.0	–	22.2	–		
Overall Aggregated Mean							3.4	1.0

Key: 5-Strongly Agree; 4-Agree; 3-Neutral; 2-Disagree; 1-Strongly Disagree; F-frequency; %-percentage; M-mean; SD-standard deviation; n= 27

As shown in the Table 1, over two thirds (70.4%) of the study respondents were in agreement that there are enough computers in the procurement office of Embu County. A vast majority (81.5%) of the respondents felt that there are enough Information Technology specialists in the tendering departments while 18.5% indicated otherwise. Slightly more than half (51.9%) of the respondents were affirmative that the tendering process is computerized. In contrary, 33.3% of the respondents indicated that the process is still manual. This was also supported by 40.7% of the respondents who disagreed with the statement that all tenders by the county government are computerized. Only 25.9% of the study respondents were satisfied that the County government of Embu had adopted computerized tendering process.

With regards to whether an advanced electronic system for procurement process is adopted by Embu County Government, 44.4% of the respondents were affirmative while slightly more than half (51.9%) of them disagreed. With reference to whether inadequate information technology affected tendering process, 44.4% of the respondents that took part in the study pointed out that it did although 37.0% of them felt otherwise.

Majority (70.4%) of the respondents were in consensus that use of information technology highly affects the tendering process. Another 77.6% of the study respondents were in agreement that the departments have adequately invested in information technology to streamline the procurement process and to reduce inventory costs. The remaining percentage (22.2%) of them was in contrast.

Additionally, the overall aggregated mean of the respondents on the items of the effect of information technology on tendering process was 3.4 with a standard deviation of 1.0 ($M=3.4$; $SD=1.0$). This shows that majority of the respondents were in agreement that information technology influences the tendering process in the public sector of Embu County.

Testing Association between Information Technology and Tendering Process

The study also sought to establish whether there is a significance statistical association between information technology and tendering process in the department of procurement in Embu County. The Chi-square for independence was computed and results presented as shown in Table 2.

Table 2: Chi-square Test for the Association between
Information Technology and Tendering Process

	Value	df	Asymp.sig. (2-sided)
Pearson chi-square	27.118 ^a	9	.000
Likelihood Ratio	23.372	9	.010
Linear-by-Linear Association	.667	1	.121
N of valid Cases	27		

a.Zero (0) cells (.0%) have expected count less than 5.

The minimum expected count is 5.72.

As shown in Table 2, the p-value is smaller than the threshold level of significance (.05), χ^2 (9, N=27) = 27.118, P = .000. Thus, there is a statistical significant association between information technology and tendering process in the procurement department in Embu County. This implies that the tendering process in public sector is significantly affected by use of information technology.

DISCUSSION

The study found out that 51.9% of the respondents agreed that tendering process in Embu County is computerized. However, 33.3% of them were in a contrary opinion. This shows that manual procurement processing method is still in operation. This could be a threat to the efficiency and transparency of tenders awarding process because much information can easily be manipulated in manual processes as opposed to the computerized process that accessible to the general public. Therefore, there is need to adopt information technology in the whole process of procurement in the public sector of both national and county governments in Kenya.

With reference to whether inadequate information technology affected tendering process, 44.4% of the respondents that took part in the study agreed that it did. This finding concurred with a study carried out by O'Connell (2010) on effective use of information communications technology in tendering in the Irish construction industry. The study found out that potential cost savings in the Irish construction industry would be achieved through the application of integrated ICT tools in the construction tendering process. Similarly, in their study on the internal factors affecting procurement process of supplies in the public sector of Kenya, Ngugi and Mugo (2012) revealed that information technology adoption enhanced the process of effective tendering through advertising, sourcing reviews, prequalification, potential for cost

savings and greater awareness of new development. The use of IT also enabled Kenyan government ministries to provide excellent service to their suppliers in an effective and transparent manner. Further, Kissang (2014) found out that inadequate use of latest information technology systems affected tendering process to a large extent in Unga manufacturing company limited. This implies that full adoption of the use of information technology in the tendering process in the public sector will not only improve the efficiency of the tender vetting process but would save the cost incurred and increase satisfaction of tender awarding criteria.

Majority (70.4%) of the respondents were in consensus that use of information technology highly affects the tendering process. This was in line with Kendo and Guteno (2016) that established that use of technology highly affects the tendering process. Further, Daud *et al.*, (2013) revealed that applications of e-procurement such as e-bidding, e-tendering, e-monitoring and many more can help contractors to improve and enhances their business performance. The study encouraged firms to use the e-procurement in order to improve their business performance through effective tender applicant vetting criteria. In the same vein, Rankin *et al.*, (2006) indicated that the use of information communication technology in tendering process would influence the effectiveness of the process. However, with regards to whether an advanced electronic system for procurement process is adopted by Embu County Government, 44.4% of the respondents were affirmative while slightly more than half (51.9%) of them disagreed. This implies that despite information technology being a determinant factor of an effective tendering process, the public sector is yet to adopt it. This could be attributed to unending cases of corruption in the contracts awarding to the tender applicants.

Another 77.6% of the study respondents were in agreement that the procurement department has adequately invested in information technology to streamline the procurement process and to reduce inventory costs. The study finding was in agreement with Shiundu and Rotich (2014) who asserted that although use of information technology has led to reduction in inventory costs, the public institutions at City Council of Nairobi had not adequately invested in information technology and which influenced efficiency in the procurement systems. Bell (2001) suggests changes must take place if electronic solutions are to become predominant and companies are to remain competitive in the new era. According to Hagén and Zeed (2005) public authorities are expected to provide excellent service to their constituents in an effective and transparent manner, all the while working under constant resource constraints by adopting information technology. Therefore, the use of information technology in the tendering process must be prioritized if the government would like to satisfy the expectations of the constituents by utilizing the limited funds allocated in the budgets to achieve a maximum economic development impact in across Kenya.

CONCLUSION

The significant role played by information technology use on efficiency of tendering process public sector at Embu County, Kenya has been demonstrated by the findings. This paper has established that among many factors that affect the efficiency and effectiveness of the tendering process in public sector, information technology is crucial. For instance the study established that information technology has a statistical significant association ($P > 0.05$) with the tendering process in the public sector. This relationship was statistically significant. These findings are congruent with those of Kendo and Guteno (2016) that established that use of technology highly affects the tendering process. Further, Daud *et al.*, (2013) revealed that applications of e-procurement such as e-bidding, e-tendering, e-monitoring and many more can help contractors to improve and enhances their business performance. This could be a threat to the efficiency and transparency of tenders awarding process because much information can easily be manipulated in manual processes as opposed to the computerized process that accessible to the general public. Therefore, there is need to adopt information technology in the whole process of procurement in the public sector of both national and county governments in Kenya. From our findings, the p-value is smaller than the threshold level of significance (.05), $\chi^2 (9, N=27) = 27.118, P = .000$. Thus, there is a statistical significant association between information technology and tendering process in the procurement department in Embu County. This implies that the tendering process in public sector is significantly affected by use of information technology.

This study concludes that information technology has a positive and significant influence on the efficiency of the tendering process in public sector at Embu County, Kenya. A conclusion that there is an inverse relationship between information technology and efficiency of the tendering process in public sector at Embu County, Kenya meaning that emphasis needs to be given to this effect. The study concluded that information technology in procurement is a significant contributor to organizational performance in improving efficiency of tendering process, therefore public sector organizations should be encouraged to adopt information technology practices in procurement. This conclusion is supported by empirical results of this study and those done by by O'Connell (2010) on effective use of information communications technology in tendering in the Irish construction industry. The study found out that potential cost savings in the Irish construction industry would be achieved through the application of integrated ICT tools in the construction tendering process.

RECOMMENDATIONS

As a strategy by the governments, the use of information technology in the tendering process should be prioritized in order to streamline the procurement process and to reduce inventory

costs. This will satisfy the expectations of the constituents because the government will be able to utilize the limited funds allocated in the budgets to achieve a maximum economic development impact in all counties of the state. Additionally, the government should embrace use of information communication technology in the procurement departments to enhance transparency of tendering awards among the applicants, and to minimize misappropriation of public funds by few individuals in the public sector. This may not only lead to improved service delivery in the public sector but would also enhance employee performance due to adequate supplies of quality resources by qualified contractors.

It is imperative for communal area governments to adopt information technology practices in the procurement process to mend efficiency of tendering process. The Kenya institute of management should initiate integrated information Technology systems and build the capacity of the users in public sector organizations to enable information technology practices in procurement. This ability construction in communal area governments will boost customer service, cost of buying and increase transparency and accountability.

The practise of Information technology practices in state organizations will enable them to be on the watchful to restrain the gigantic expenditures practised by government organisations and will lead to increase responsibility and clearness. The public administration bodies should highlight embracing of information technology practices in the procurement process by public organizations. This can be done through improved procedures, circulars, instructions and protocols regarding procurement. The public administration should also ensure that rule creation and execution has factored in adoption of information technology practices for public procurement process.

Because the use of information technology can result in an innovative change in the procurement process, all government organizations should change their perception about adopt ICT in their departments. This can work to make government organizations performers and reduce the level of corruption. Transparency, accountability and equity distribution of resource will only happen when we make use of ICT.

LIMITATIONS OF THE STUDY

Limitations of the study are those factors that affect the outcomes of the study but are beyond the control of the researcher. One of the limitations of the study was that sometimes the respondents were giving socially acceptable responses to please the researcher. To mitigate this limitation, the researcher requested the respondents to be truthful in responding to the questionnaire items. Another limitation was that there were various Government Ministries in Embu County. The researcher however concentrated on the major departments that are

involved in tendering procedures. Another one was that the study employed secondary data that may have been collected for other research thereby diluting the objectivity and consequently, the conclusions were arrived at from use of such data. To mitigate this the researcher used current books that have updated content and also used past research journals only relevant to his area of study. The last limitation was that Errors of omission and commission that are usually common in the procurement plans, store records and requisition records were not ruled out. Such omissions may have unintentionally influenced the data collection process and hence the analysis. This was taken care of by asking the respondents in the procurement department to countercheck all procurement records for such errors. All errors identified were corrected through reversing the incorrect error and use of second entry to record the transaction.

SCOPE FOR FURTHER STUDIES

Further studies should be done to incorporate other specific variables such Cloud-Based E-Procurement Services for Business, In-House E-Procurement Systems for Large Corporations, Government Adoption of E-Procurement Platforms, Big Data and E-Procurement and Block chain Ledgers for E-Procurement. This is because most government organizations tend to concentrate so much on the primary aspects of ICT and forget the current trends in the market. The use of ICT by governments has matured to the next level beyond the basic hardware and software elements hence the need for shift of focus to more serious ICT integration parameters. This is considering the study only focused on the basic ICT concept of ERP. Further studies, could also incorporate the concept of cyber security. Additionally, the study recommends that future researchers should extend this study to other government ministries and the civil service in general so as to be in a position to generalize findings to represent the entire public service sector. Further study should compare use of ICT in procurement processes between various nations in Africa. The purpose will be to benchmark with other government agencies across Africa with the aim of improving processes and practices in our host organizations.

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