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An Assessment of Factors Affecting Efficiency of Procurement Function in County Government of Bungoma, Kenya

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Abstract:-The study purposed to assess the factors affecting the efficiency of procurement function. A conceptual framework guided the study to show the interactions of the study variables. The study was further anchored on a case study and explanatory research designs. The study targeted 225 employees, 115 departmental heads and 1,126 suppliers. Stratified sampling technique was used to categories employees, departmental heads and suppliers. The study adopted simple random sampling to select 68 employees, 35 departmental heads and 113 suppliers. The research instruments used were the questionnaires, interview schedules and telephone interviews. On the validity of the instruments, the researcher used content validity while reliability was established by use of Cranach's Alpha coefficient which yielded a value of 0.82. The study was then analyze the data using descriptive and inferential statistical tools where regression analysis was used. There was a positive and significant effect between e-procurement and the efficiency of procurement function. The research findings will be helpful to the departmental heads, academicians, procurement officers and the County Government as a whole in assessing the factors affecting procurement function in the county.

Keywords:-Governance; Electronic Procurement; Procurement Planning; Contracts Management and Efficiency of Procurement Function.

I. INTRODUCTION

The existing procurement systems in Africa failed to cope up with the expansion in government procurement requirements and to deliver value for money which was generally accepted among government and donor partners[1] (Agaba & Shipman, 2007). But the 1990s saw a wave of procurement reforms which were aimed at creating a sound public procurement regime that was to be accountable, transparent, encouraging open competition, non-discriminative, and one which emphasized value for money. While decentralization of service delivery may be justified on a number of grounds, the literature seems to suggest that improving service delivery has been a common factor [2,3,4](Ahmed, Devarajan, Khemani & Shah, 2005; Mullins, 2003; Shah & Thompson, 2004).Decentralized governance has been advocated by donors and development agencies as an instrument to ensure broader participation of citizens as well as to prove local governance leading to poverty reduction from the bottom up (Jutting *et al*., 2005)[5].

Sound public procurement policies and practices are among the essential elements of good governance (KIPPRA, 2006)[6]. According to Thai (2001), [7] the basic principles of good procurement practice include accountability, where effective mechanisms must be in place in order to enable procuring entities spend the limited resources carefully, knowing clearly that they are accountable to members of the public; competitive supply, which requires the procurement be carried out by competition unless there are convincing reasons for single sourcing; and consistency, which emphasizes the equal treatment of all bidders irrespective of race, nationality or political affiliation. Failure by the function to safeguard the availability of supplies can sabotage the very interests of the organization which the function is supposed to support (Kumar, Ozdamar and Zhang, 2008).[8]

The concept of supply chain is defined by Meijboom, Schimidt-Bakx and Westert (2011)[9] as a way to envision all

steps needed from beginning to end in order to deliver products or services to the customer. Supply chain management (SCM) on the other hand, involves the management of flows between and among stages in a supply chain to maximize total profitability (Silaand Ebrahimpour, 2005) [10] and customer satisfaction (Danese and Romano, 2011)[11]. The procurement function occupies centre stage in managing supply chains. While literature suggests procurement's significance in safeguarding availability of items (Miocevic, 2011)[12]; practices, decisions and interventions derailing the function's performance in public institutions do not seem to be treated with due urgency and significance.

The procurement process has to be implemented on a fair basis openly without discriminating any of the participants. Framework agreements and joint procurement can be used as a tool for reducing administrative work. Procurement is the process of acquiring property, services and works by an agency upon identification of a need. An effective and efficient procurement system ensures that the public receives value for money (Kirui and Wanyoike, 2015)[13].The effective procurement function should acknowledge complexity, find the right skills and organize the work, develop a sound strategy, manage timetable effectively, follow sound bide valuation method and develop a smart, fair contract. Effective procurement requires organized team work: authorities, responsibilities, schedule, and resources. (Eduardo, 2004).[14]

For example, according to Mmana (2011)[15], procurement audit reports for 2010 at the Malawi Ministry of Health headquarters which controls for the single government instituted supplier namely Central Medical Stores (CMS), uncovered irregularities in the procurement of medicines that consequently resulted in Health Sector-Wide Approach (HSWAp) pool partners withholding funds meant for the procurement of medicines until the situation was rectified. This meant the CMS could not have sufficient inventory of medicines and could therefore hardly meet the drug requirements of public hospitals. This and other challenges external to hospital procurement functions 'can directly affect the downstream customer' (the patient) in public hospitals (Miocevic, 2011).[16]

Mamiro (2010)[17] in his findings concludes that one of the major setbacks in public procurement is poor procurement planning and management of the procurement process which include needs that are not well identified and estimated, unrealistic budgets and inadequacy of skills of procurement staff responsible for procurement. Similarly, Kakwezi and Nyeko (2010)[18] argue that procurement performance is not usually measured in most PEs as compared with the human resource and finance functions. They conclude in their findings that failure to establish performance of the procurement function can lead to irregular and biased decisions that have costly consequences to any public procuring entity.

Previous studies have shown that the procurement function of goods, works and services has been delayed according to the Procurement guideline (Velnampy and Kamalarupan, 2010)[19]. This has also been observed in the Government procurement process in Bungoma County where several construction works such as building construction, road construction, tank maintenance, purchasing office equipment and vehicles and service contract such as security service, cleaning service, laundry service and maintenance service have not been properly done according to the requirement of the stake holders. Moreover, the output of procurement agreement is inferior in quality.

The bidding process encounters the delivery delays and failure to provide the supplies where and when they are needed. Basheka (2008)[20], carried out a study on procurement planning and local governance in Uganda: a factor analysis approach; Oluka and Basheka (2010)[21] did a study on the determinants and constraints to effective procurement contract management in Uganda: a practitioner's perspective; Bolton (2006)[22] on Government procurement as a policy tool in South Africa; Agaba & Shipman (2007)[23] on Public Procurement Reform in Developing Countries: The Ugandan Experience; Shalle, Guyo and Amuhaya (2010) [24]on factors affecting implementation of e-procurement practices in public service in Kenya: a case of Ministry of Finance; Ngugi and Mugo (2009) [25] on internal factors affecting procurement process of supplies in the public sector; a survey of Kenya government ministries. From the related literature reviewed, there is little or no documentation on the studies focusing on the factors affecting efficiency of procurement function. This will form the main concern of the study, which sought to assess the factors affecting efficiency of procurement function in Bungoma County. Specifically, this study endeavored toestablish the extent to which electronic procurement affect the efficiency of procurement function in Bungoma County.

The following research hypothesis guided the study:-
$H_0$1: There is no significant effect of electronic procurement on the efficiency of procurement function in Bungoma County.

II. MATERIALS AND METHODS

This study was guided by case study design as well as explanatory research (Bryman, 2001)[26] (Galliers and Sutherland, 1991) [27]. The study was conducted in Bungoma County. Bungoma County is one of the former districts of Western province. The study targeted225 employees, 115 departmental heads and 1,126 suppliers (Human Resource Management and Procurement of Bungoma County, 2014).Stratified sampling technique was used to categorise employees, departmental heads and suppliers. The simple

random sampling was used to select 68 employees, 35 departmental heads and 113 suppliersto ensure each and every respondent in the target population had an equal chance of inclusion.The study used the questionnaires, interview schedules and telephone interviews of suppliers to collect data from the respondents.

The research adopted the content validity to measure the validity of the instruments to be used. Cronbach Alpha Reliability coefficient value was computed which gave an alpha of 0.82. The threshold value acceptable in this study was $\alpha = 0.7$ and higher according to Creswell (2003) [29]; Mugenda and Mugenda (2003) [30]. Frequencies, percentage and means allowed the use of descriptive statistics and the results were presented in cross tabulation and frequency tables, pie charts and bar graphs. Inferential statistics involved use of regression analysis to establish the association between study variables and to test null hypotheses at confidence interval level of 95% (p<5% or p>5%).

III. RESULTS AND DISCUSSIONS

The study sought to find out the age brackets of the respondents by asking them to indicate their age ranges. Results signified that respondents were in the age brackets of 40-49 years (48%), 30-39 years (40.8%), 20-29 years (4.8%) and those above 50 years and above constituted 6.4% of the sample (see Figure 1). From these results, it implied that majority of the respondents (88.8%) were in the age bracket of 30-49 years. Results from a Chi Square test of independence on the respondents' age brackets showed that there was a highly significant (P<0.01) difference in the variation among age groups $\chi^2_{3,0.00} = 193.08$) since the expected uniform distribution across age groups was not represented by 25% in each age group.

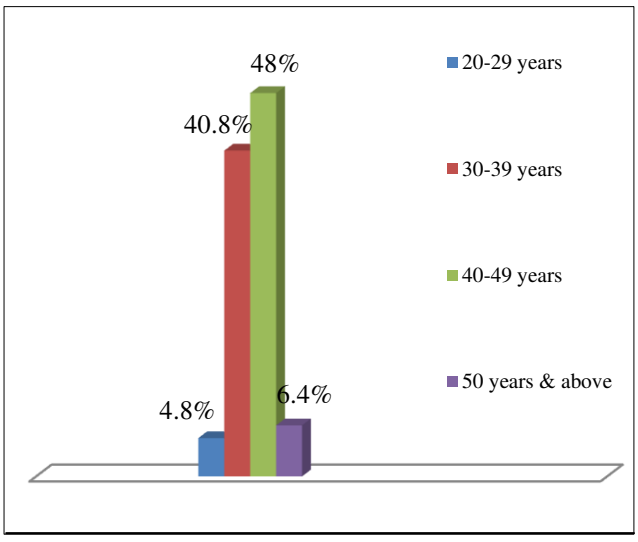

Figure 1: Age Distribution of Respondents

This also means that the majority of the respondents were mature people who have knowledge to assess the factors affecting the efficiency of procurement function.

The study sought to find out the gender distribution among the respondents in Bungoma County Government. Results from a Chi Square test on the gender distribution among the respondents in Bungoma County Government showed that there was a highly significant (p<0.01) variation in the gender distribution among the respondents ($\chi^2_{1,0.01} = 36.804$).

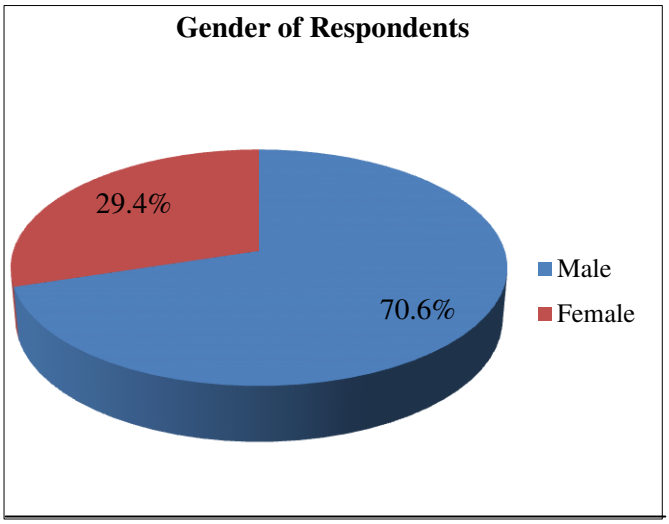

Figure 2: Gender of Respondents

Figure 2 shows that out of the 68 respondents, the male respondents had the highest representation of 48(70.6%) while the female respondents had 20(29.4%). This was attributed to the fact that the male respondents were more, cooperative and available than their female counterparts. The findings from the secondary data showed that there were more male respondents than female respondents working in Bungoma County Government.

The study sought to find out the experience of the respondents this was aimed at determining the number of working years and in turn know how much experience they had been exposed to concerning the role of IT in Bungoma County Government. The results are shown in Figure 3. A Chi Square test conducted on the working experience of the respondents showed that there was a highly significant (p<0.01) variation in the working experience among the respondents ($\chi^2_{3,0.01} = 94.662$) in Bungoma County Government. This indicated that the respondents had varied job experience, knowledge and skills and therefore different views on the assessment of the factors affecting the efficiency of procurement function in Bungoma County Government.

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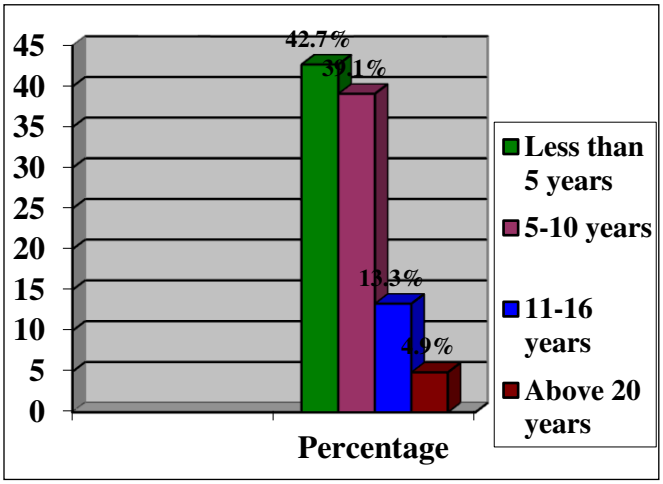

Figure 3: Working Experience of Respondents

The study sought to find out formal educational levels of respondents in Bungoma County Government. To help understand this, respondents were asked to state their formal educational level. The results are recorded in Figure 4. A Chi Square test carried out on the distribution of respondents' formal educational level illustrated a significant ($p<0.01$) variation in the distribution of formal education levels ($\chi^2_{3,0.01} = 213.204$). Results in Figure 4.4 show that majority of respondents(66.2%) had bachelor's degree, 21.4% had masters' degrees while least had diploma education level (12.4%). This illustrated that the majority of the respondents in Bungoma County Government had attained minimum academic qualifications for their profession.

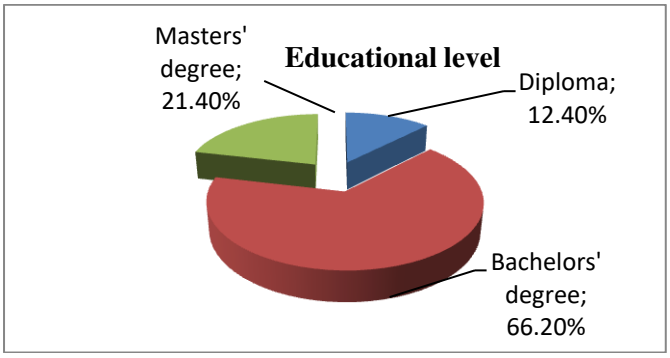

Figure 4: Educational Level of Respondents

A. Effect of Electronic Procurement and Efficiency of Procurement Function

The second objective of this study was to determine the effect of training contents like cost efficiency benefits, internal customer satisfaction and IT infrastructure issues like software integration on efficiency of procurement function in Bungoma County Government. The results are recorded in Table 1. Results show that procurement process has integrated use e-procurement to some small extent (45.6% of respondents agreed, 13.2% were undecided while 41.1% of respondents disagreed). This variable had a mean of 2.88. This is a sure indication that e-procurement has not taken much root in the procurement process. The question on whether e-procurement is a far more efficient and reliable method for the requisition to payment process (26.5% of respondents strongly agreed, 45.6% agreed, 7.4% were undecided, 14.7% of respondents disagreed and 5.9% strongly disagreed). This question had a mean of 3.72. the question on whether management has invested heavily in the e-procurement attracted varied views from the respondents: 16.2% of respondents strongly agreed, 29.4% agreed, 16.2% of respondents were undecided, 26.5% disagreed while 11.8% of respondents disagreed. This had a mean of 3.12.

Variables	SA	A	U	D	SD	Mean
Procurement process has integrated use e-procurement	1 (1.5)	30 (44.1)	9 (13.2)	16 (23.5)	12 (17.6)	2.88
E-procurement is a far more efficient and reliable method for the requisition to payment process	18 (26.5)	31 (45.6)	5 (7.4)	10 (14.7)	4 (5.9)	3.72
Management has invested heavily in the e-procurement	11 (16.2)	20 (29.4)	11 (16.2)	18 (26.5)	8 (11.8)	3.12
e-procurement has led to satisfaction of customer needs	15 (22.1)	27 (39.7)	8 (11.8)	12 (17.6)	6 (8.8)	3.49

N = 68; Strongly Agreed (SA = 5), Agree (A = 4), Not sure (Ns = 3), Disagree (D = 2), strongly disagree (SD = 1)

Table 1: Effect of Electronic Procurement and Efficiency of Procurement Function

Furthermore, the questions on whether e-procurement has led to satisfaction of customer needs had the following responses from the respondents: 61.8% of respondents agreed, 11.8% of respondents were undecided while 26.4% of respondents agreed. This variable had a mean of 3.49.Inferential statistics were conducted to ascertain the association between electronic procurement and efficiency of procurement function. This was achieved by carrying out simple regression to establish the associations of the study variables as illustrated in Table 2. Results indicate that e-procurement has a positive and significant ($p<0.05$) effect on the efficiency of procurement function in Bungoma County Government ($b = 1.18$, t-value = 4.93, p-value <0.05). This implies that an increase in e-procurement will increase the level of employees' performance in Bungoma County Government.

The results concurred with the findings of Croom (2000)[33, 34, 35, 36, 37]; Emiliani (2000); Zsidisin & Ellram (2001); de Boer*et al*. (2002) and Wyld (2002) who emphasized that the cost improvements may be achieved as a result of transactional and process efficiencies (e-procurement). These efficiencies are gained in three ways: greater opportunity for lower prices from suppliers; reduced work content in the total 'requisition to payment' process; and significant reductions in the time taken to complete the procurement process.

Model	Regression coefficient, b	t-value	p-value/ Sig.
Procurement process has integrated use e-procurement	0.506	3.943	0.000
E-procurement is a far more efficient and reliable method for the requisition to payment process	3.519	11.573	0.000
Management has invested heavily in the e-procurement	0.427	3.108	0.001
e-procurement has led to satisfaction of customer needs	0.275	1.086	0.005
Overall effect	**1.18**	**4.93**	**<0.05 (s)**

N = 68; s-significant with p-value <0.05

Table 2: Effect of Electronic Procurement and Efficiency of Procurement Function

Previous studies have also proved that electronic procurement is a far more efficient and reliable method for the requisition to payment process than proceeding manual and semi-automated processes (Electronic Commerce News, 2003; Hayward, 2003; Moore, 2003; Parker, 2003; Trommer, 2003; Wheatley, 2003).[38, 39, 40, 41, 42].The hypothesis, which states that there is no significant effect of electronic procurement on the efficiency of procurement function in Bungoma County was rejected because a positive and significant ($p<0.05$) relationship was established between e-procurement and efficiency of procurement function.

IV. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions were derived from the study findings. The study findings between e-procurement and the efficiency of procurement function indicate that e-procurement has a positive and significant effect on the efficiency of procurement function. This implies that increase in the levels of e-procurement in Bungoma County Government will increase efficiency of procurement function in Bungoma County Government.

The study recommended that since electronic procurement contents like web content management and content rationalization which is significant issues for e-procurement operation should be enhanced to realize improved efficiency of procurement function in Bungoma County Government. Lastly, e-procurement system should be integrated effectively with other information systems, particularly production planning & control and finance systems.

REFERENCES

[1]. Agaba, E & Shipman, N. (2007). "Public Procurement Reform in Developing Countries: The Ugandan Experience." In G. Piga& K. V. Thai (Eds.), Advancing Public Procurement: Practices, Innovation and Knowledge-Sharing (pp. 373-391). Boca Raton, FL: Pr Academics Press.

[2]. Ahmed, J., Devarajan, S., Khemani, S., & Shah, S. (2005).Decentralization and Service Delivery (World Bank PolicyResearch Paper 3603). Washington, DC: World Bank.

[3]. Mullins, D.R. (2003). Accountability and Coordination in a Decentralized Context: Institutional, Fiscal and Governance Issues. Washington, DC: American University.

[4]. Shah, A., & Thompson, T. (2004). Implementing Decentralized Local Governance: A Treacherous Road with Potholes, Detours, and Road Closures (Policy Research Working Paper 3353). Washington, DC: The World Bank.

[5]. Jutting, J., Corsi, E., Kauffmann, C., McDonnell, I., Osterrieder, H., Pinaud, N., & Wegner, L. (2005). "What Makes Decentralization in Developing Countries Pro-Poor?" The European Journal of Development Research, 17 (4): 626-648.Kippra, (2006). Public procurement policy in Kenya: The need for a coherent policy framework. Policy brief no. 3/2006.

[6]. Thai, K.V. (2001). "Public procurement re-examined", Journal of Public Procurement, Vol. 1 No.1, pp.9-50.
[7]. Kumar, A., Ozdamar, L., and Zhang, C. N. (2008). 'Supply chain redesign in the healthcare industry of Singapore'. Supply Chain Management: An International Journal. Vol. 13 (2) pp.95–103.
[8]. Meijboom, B.R., Schmidt-Bakx, S.J.W.G.C., &Westert, G.P. (2011). Supply chain management practices for improving patient-oriented care. Supply Chain Management: An International Journal, 16,166-175. doi:10.1108/1359854111112715
[9]. Sila, I., Ebrahimpour, M., (2005). Critical linkages among TQM factors and business results. International Journal of Operations & Production Management 25, 1123-1155.
[10]. Danese, P., Romano, P., (2011). Relationship between downstream integration, performance measurement systems and supply network efficiency. International Journal of Production Research 50, 2002-2013.
[11]. Miocevic, D., (2011). 'Organizational buying effectiveness in supply chain context: Conceptualization and empirical assessment'. Journal of Purchasing & Supply Management. Available: www.elsevier.com/locate/pursup.
[12]. Kirui, E.K., & Wanyoike, D. (2015). Factors influencing procurement efficiency at the national hospital insurance fund in Kenya. IMPACT: International Journal of Research in Business Management (IMPACT: IJRBM) ISSN(E): 2321-886X; ISSN(P): 2347-4572 Vol. 3, Issue 11, Nov 2015, 29-42.
[13]. Eduardo, T. (2004). Effective IFMIS Procurement and Management implementation workshop, Nairobi.
[14]. Mmana, D. (2011). 'We reveal what has caused this drug shortage: donors refuse to buy drugs afterK2.5 billion irregularities in procurement'. WeekendNation Vol. 15 (44), Saturday, October 22, 2011pp.1-3. Available: www.mwnation.com.
[15]. Miocevic, D. (2011). 'Organizational buying effectiveness in supply chain context: Conceptualization and empirical assessment'. Journal of Purchasing & Supply Management. Available: www.elsevier.com/locate/pursup.
[16]. Mamiro, R. G. (2010). Value for Money, The Limping Pillar in Public Procurement. Tanzania Procurement Journal, 4 -5.
[17]. Kakwezi, P., and Nyeko, S. (2010). Procurement processes and performance: efficiency and effectiveness of the procurement function. Makerere University.
[18]. Velnampy, T.&Kamalarupan, K. (2010). Evaluation of Factors Influencing Effective procurement management System of Public Sector Organisations. University of Jaffna. Retrieved from www.researchgate.net.
[19]. Basheka, B. C. (2008). "Procurement Planning and Local Governance in Uganda: A Factor Analysis Approach." Paper Presented at the 2008 International Research Society for Public Management Conference, from 26-28 March 2008, in Brisbarne, Australia.
[20]. Oluka P.N., and Basheka, B. C. (2010). Determinants and Constraints to Effective Procurement and Contract Management in Uganda: A Practitioners' Perspective.
[21]. Bolton, P. (2006). 'Government procurement as a policy tool in South Africa', International Journal of Procurement Management, Vol. 6, No. 3, pp.193–217.
[22]. Agaba, E & Shipman, N. (2007). "Public Procurement Reform in Developing Countries: The Ugandan Experience." In G. Piga& K. V. Thai (Eds.), Advancing Public Procurement: Practices, Innovation and Knowledge-Sharing (pp. 373-391). Boca Raton, FL: Pr Academics Press.
[23]. Shalle, N.I., Guyo, W., &Amuhaya, I.M. (2010).Factors affecting implementation of e-procurement practices in public service in Kenya: a case of ministry of finance. International Journal of Science and Research (IJSR), Volume 2 Issue 8, India Online ISSN: 2319-7064.
[24]. Ngugi, J.K., and Hildah W. Mugo, H.W. (2009). Internal factors affecting procurement process of supplies in the public sector; a survey of Kenya Government Ministries. Jomo Kenyatta University of Agriculture and Technology.
[25]. Bryman, A. (2001). "Social Research Methods". Oxford: Oxford University Press.
[26]. Galliers, R.D., and Sutherland, A.R. (1991). Information systems management and strategy formulation: the 'stages of growth' model revisited. Journal of Information Systems, 1, 89-114.
[27]. Kombo DL and Tromp D L.A (2006). Proposal and Thesis Writing: An Introduction. Paulines Publications Africa.
[28]. Creswell, J. W. (2003). Research design: qualitative, quantitative, and mixed method approaches ed. 2, USA: SAGE publication Ltd.
[29]. Mugenda, O. M., & Mugenda, A. G. (2003). Research methods: Quantitative and qualitative approaches. Nairobi: Acts Press.
[30]. Segal and Summers 2002). Improving transparency in pharmaceutical systems: strengthening critical decision points against corruption. Washington, DC: World Bank, Human Development Network, Latin American and Caribbean Region.
[31]. Brinkerhoff DW. (2004). Accountability and health systems: Toward conceptual clarity and policy relevance. Health Policy and Planning 19:371–9.
[32]. Croom, S. (2000). 'The Impact of Web-Based Procurement on the Management of Operating Resources Supply' The Journal of Supply Chain Management. Winter. Vol. 36; No.1. pp. 4-13.
[33]. Emiliani, M.L. (2000). "Business-to-business online auctions: key issues for purchasing process improvement" Supply Chain Management: An International Journal Vol. 5(4) pp 176-186.

[34]. Zsidisin, G.A. &Ellram, L.M. 2001. "Activities relating to purchasing and supply management involvement in supplier alliances". International Journal of Physical Distribution and Logistics Management, Vol. 31, No 9, pp. 629-646.
[35]. de Boer L.; Harink J.; Heijboer G. (2002). "A conceptual model for assessing the impact of electronic procurement". European Journal of Purchasing and Supply Management, vol. 8, no.1 pp. 25-33.
[36]. Wyld, D.C. 2002. "The Electric Company: How the supply chain is being reinvented through the rapid application of e-procurement processes in the business to business arena". Management Research News. Vol. 21 (12) pp 22-23.
[37]. Hayward, C. (2003). "Three-year glitch". Financial Management. July/Aug, p 30.
[38]. Moore, J. (2003). "Manufacturers struggle with e-Procurement, but still see gains" Chemical Engineering Progress. Vol. 99(9) pg. 23.
[39]. Parker, R. (2003). "BA makes online sourcing mandatory to save £300m". Supply Management. Vol. 8(17). p 9.
[40]. Trommer, D. (2003). "Learning The ABC'S – Having succeeded in transforming its procurement processes for indirect materials; will Ametek now consider doing the same for direct electronic component materials?" EBN. Nov 10, pg. 25.
[41]. Wheatley, M. (2003). "How to Know if E-Procurement Is Right for You ; While some companies have achieved price reductions through online sourcing, the focus of e-procurement initiatives today is process efficiency. Here's how to decide if, what and how you should buy electronically." CIO. Vol. 16(17), p 1.
[42]. Drabkin, D., and Thai K. Y., (2003). US Federal Government Procurement Structure, Process and Current Issues (IPSERA).International Purchasing and Supply Education and Research Association's Comparative Public Procurement Cases Workshop.
[43]. Dew, N. (2008) 'Cookies for real world: assessing the potential of RFID for contractor monitoring, Journal of Public Procurement, Vol. 8, No 1, pp.98–129.
[44]. Thai, K.V. et al (eds.)(2005). Challenges in Public Procurement: An International Perspective (Boca Raton: PRAcademics Press).
[45]. Thai, K. V. (2004). Introduction to Public Procurement, (5th edition). Florida Atlantic University.
[46]. Prager, J., (1994), 'Contracting out government services: Lessons from the private sec-tor', Public Administration Review, Vol. 54, No.2, March/April 1994.