ELECTRONIC TENDERING PRACTICES AND SUPPLY CHAIN PERFORMANCE OF COUNTY GOVERNMENTS OF WESTERN KENYA

Khasandi, D., Kadima M. J., & Miroga, J.

The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com

Vol. 9, Iss. 2, pp 763 – 778. May 14, 2022. www.strategicjournals.com, ©Strategic Journals

ELECTRONIC TENDERING PRACTICES AND SUPPLY CHAIN PERFORMANCE OF COUNTY GOVERNMENTS OF WESTERN KENYA

[1] Khasandi D., [2] Kadima M. J., & [3] Miroga, J.

[1] Master Student, Jomo Kenyatta University of Agriculture and Technology [JKUAT], Kenya
[2] Lecturer, Jomo Kenyatta University of Agriculture and Technology [JKUAT], Kenya
[3] Doctor, Lecturer, Jomo Kenyatta University of Agriculture and Technology [JKUAT], Kenya

Accepted: May 7, 2022

ABSTRACT

The purpose of this study was to establish the influence of E-Tendering practices on supply chain performance of the County Governments of Western Kenya. The study applied a descriptive research design and the target population comprised of senior officers of all the five counties in western Kenya namely; Kakamega, Busia, Vihiga, Bungoma and Trans-Nzoia. Census Technique was applied on the entire population since it was small and manageable. The Questionnaire was used for the Data collection as an instrument. Pilot study was done on the County Government of Uasin Gishu; Kenya, hence this enabled for testing of the reliability and validity of the research instrument. The study descriptive and inferential statistics was analyzed by use of SPSS software version 24, further; a regression equation model was developed to test the relationships between the variables. Frequencies, percentages, mean scores were used to analyze the data with the help of Statistical Package for the Social Sciences. The results of model revealed that electronic Tendering practices had a positive influence on supply chain performance of the County Governments of Western Kenya. The study concluded that electronic Tendering practices enhance supply chain performance in the County Governments. The study recommended that County Governments should ensure and adopt the application of E-Tendering modules in order to reduce procurement process time, costs and errors. Further the Government should institute policies concerning data safety to enhance the application of electronic Tendering practices between the buyers and suppliers in terms of improved contractual electronic procedures.

Key words: *Electronic Procurement Practices, Electronic Tendering Practices, Supply Chain Performance*

CITATION: Khasandi D., Kadima M. J., Miriga, J. (2022). Electronic tendering practices and supply chain performance of county governments of Western Kenya. *The Strategic Journal of Business & Change Management,* 9 (2), 763 – 778.

INTRODUCTION

Internet technology is no longer optional in the modern worldwide business environment that is highly competitive, rather, it is mandatory. It is very necessary that firms offer their customers cost effective complete solutions and lifecycle costs for the addition of sustainable value. The advent of Internet as well as information and communication technology (ICT) applications has seen first struggling to adapt their operations from conventional methods to the digital electronic business, electronic procurement, and electronic supply chain concepts (Edmiston, 2003). Both researchers and practitioners strongly agree on the strategic significance of adopting efficient purchasing methods to cut down costs. More and more government agencies are embracing electronic procurement applications to harness the benefits that firms in the private sector are already enjoying, according to Panayiotou et al., (2004). According to Gerald and Joan (2009), modern business state a business entity must adopt and implement information technology in the execution of its everyday business processes in order to succeed.

For instance, in Europe, the public sector accounts for 45% of the gross domestic product, with 15% pertaining to public procurement Davis et al., (2007). As far as the execution of e-government is concerned, electronic procurement is one of the major priorities for many countries because of the possible cost savings. (Carayannis & Popescu, 2003). Public electronic procurement may have plenty of benefits, Mitchell (2000), but the size and red tape associated with governments makes the execution of any e-government project more sophisticated. (Devadoss, 2002). Madaney (2000) indicated that companies in Kenya have not been able to keep pace with global and technological changes to the world today, and therefore there was need to put more research and allocate more resources towards technological improvements and advancement.

Electronic Procurement is an important business avenue for lowering purchasing price and enhancing process efficiency. The e-procurement value chain consists of indent management, e-Informing, e-Tendering, e-Auctioning, vendor management, catalogue management, Purchase Order Integration, Order Status, Ship Notice, e-invoicing, e-payment, and contract management. Effective supply chains are crucial for a firm to remain competitive in today's competitive economic environment. This effectiveness is driven by striving for proper synchronization and coordination of all activities across the entire supply chain network, ranging from end-customers to suppliers. As a result, once relegated functions such as procurement, a primary determinant for the organization's relationship with suppliers become important. Major changes are currently taking place within purchasing functions of manufacturing firms, (Chartered Institute of Purchasing and Supplies, 2011). Electronic procurement is an ever-growing means of conducting business in many industries, around the world and is projected to reach $3trillion in transaction this year, up from $75 billion in 2002 (Venkatesh, 2010).

The benefits of e-procurement optimization are, increased efficiency, improved transparency, enhanced risk management, higher levels of integrity, greater and better access to government procurement for small and medium size enterprises, corruption avoidance and cost reductions as compared to traditional manual procurement. While there are various forms of e-Procurement that concentrate on one or many stages of the procurement process such as e-Tendering, e-Marketplace, e-Auction/Reverse Auction, and e-Catalogue/Purchasing, e-Procurement can be viewed more broadly as an end-to-end solution that integrates and streamlines many procurement processes throughout the organization. Although the term end-to-end e-Procurement is popular, industry and academic analysts indicate that this ideal model is rarely achieved and e-Procurement implementations generally involve a mixture of different models (Xu et al., 2015).

Globally, e-procurement has gained popularity especially with the advent of technology. In United States of America for instance, rapid development of e-procurement was reported in early 2000 just before the recession. By the end of the same year, it was reported that all state functions were maintaining web presence in at least some stage of their procurement processes with some participating in online bidding (Reddick, 2004). In Malaysia, the government at some point issued a statement calling for all suppliers to use the e-procurement system (Yossuf et al., 2011). Kaliannan et al. (2009) pointed out that Malaysian public sector are going through a rapid change especially as far as adoption of technology is concerned.

E-procurement as enabled by ICT development is believed to make procurement more efficient and competitive in the changing manufacturing sector by adding value to processes and thus reduce costs. E-procurement uses different tools such as the phone, fax, email, web portal, ERP in procurement processes ranging from procurement planning, sourcing, requisitioning, tender/quotation sending and receiving, tender/ quotation analysis, order processing and transmission to the suppliers, receiving goods and services, matching orders to invoices, electronic supplier payment, supplier evaluation and stock or material management. If the procurement processes are automated, it becomes efficient and effective thus value addition and reduction in order cycle, reduction in errors, standard procedures, and quick payments to suppliers, good internal and external customer relationship and improved supplier-buyers relationship will all results to improved quality of goods supplied and lead- time.

Statement of the Problem

In Kenya, manual systems have been a source of major inefficiencies in the regulation and operations of the procurement function. Therefore there is need to adopt ICT in order to ensure proper functioning of the procurement system. To meet today's operating challenges, technical institutions are turning to ICT to improve the services for suppliers and other customers in order to lower operating costs and improving performance. Online communication, online tender advertising and computerized tendering process influences performance of the procurement function (Mburu & Njeru, 2014). Parastatals operations have become inefficient and non-profitable, partly due to multiplicity of objectives, stifled private sector initiatives and failing of joint ventures requiring the government to shoulder major procurement burdens (Bilali & Bwisa, 2015). Despite e-Tendering gaining popularity due to globalization, technological changes and advancement, there are businesses that still carry out some activities manually. According to PPOA (2013), in public sector, most procurement processes were still manual and internet is only fully used in web browsing and in e-mails. With the need to integrate key functions such as procurement and accounting and to streamline and enhance transparency in management of public funds as well as to provide a framework for standardized reporting, the government has adopted the policy requiring all government procuring entities to use the Integrated Financial Management Information System (IFMIS). According to Commission of Revenue Authority (2013), in the 2013/2014 financial year a total of 210 billion Kenya shillings was disbursed to the county governments to facilitate their operations. This resulted in a remarkable achievement when the government ministries reported a 42.7% drop in their procurement operating cost amounting to Ksh629 million down from KSh1.64billion in the previous year (GoK, 2014). Nafula and Namusonge (2017) studied the effect of E-Tendering practices on efficiency frontier of Kakamega County Government, Barasa, Namusonge and Okwaro (2017) studied the effects of E-Tendering on the organizational Performance of County Governments in Kenya, however, a few studies have related E-Tendering with Supply chain performance but not yet penetrated properly into the supply chain process of the counties in Kenya to provide outstanding supply chain performance, hence giving

a rise to the research gap that necessitated this study to be undertaken.

Research Objective

The objective of the study was to determine the influence of Electronic Tendering Practice on supply chain performance of the County Governments of Western, Kenya. The study was guided by the following research hypothesis;

- **H_{01}**: Electronic tendering practice has no significant influence on supply chain performance of the County Governments of Western Kenya

LITERATURE REVIEW

Theoretical review

Dynamic Capability Theory

The aspect of dynamic capability was first coined by David Teece, Gary Pisano and Amy Shuen (Chien & Tsai, 2012). The theory describes an organization's ability to deliberately organize its resources in an effort to improve performance. According to Chien and Tsai (2012), dynamic capability is the capability of an organization to purposefully adapt an organization's resource base. An organization should be able to react adequately and timely to external changes. This requires the adoption of different strategies that will harness multiple capabilities of the organization and put them into use. This will give the company the ability to integrate, develop, and leverage on the environmental competitive advantage. Indeed, the current business world is very dynamic. Changes ranging from organizational structures, culture, marketing and customer's tastes and preferences are taking a different path. As such, organizations should have the ability to respond to these changes in the most effective manner. The dynamic capability theory asserts that only those organizations able to achieve this will actually be able to break even in this competitive world (Chien & Tsai, 2012). The market environment has become more dynamic and turbulent; companies need to adopt new supply chain strategy for them to remain competitive. Supply chain management is now moving away from traditional processes to agile capability of competitive bases of speed, flexibility, innovation, quality, and profitability through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in a fast changing market environment (Yusuf *et al*., 2004). Agility is a business-wide capability that embraces organizational structures, information systems, logistics processes and in particular, mindsets (Christopher, 2000).

Lee (2004) argues that supply chain agility aims at responding quickly to short-term changes in demand or supply and ensure that the company handles external disruptions smoothly. Christopher (2000) identified four characters of agile supply chain that included sensitivity, virtuality, process integration and network based. Christopher (2000) argues that leveraging supplier relations allows companies to create agile supply chains by reducing lead time between organizations. The leverage of respective strengths and competencies of network partners assists to achieve greater responsiveness to market needs (Christopher, 2000). Krajewski et al. (2009) asserts that efficient supply chain has the qualities of make to stock, low capacity cushion, low inventory investment, short lead time, emphasis low process with consistent quality and on time delivery while for responsive supply chain include assemble to order with emphasis on product variety operational strategy, high capacity cushion, just as needed inventory to enable fast delivery time, shorten lead time and emphasis on fast delivery time, customization, and flexibility.

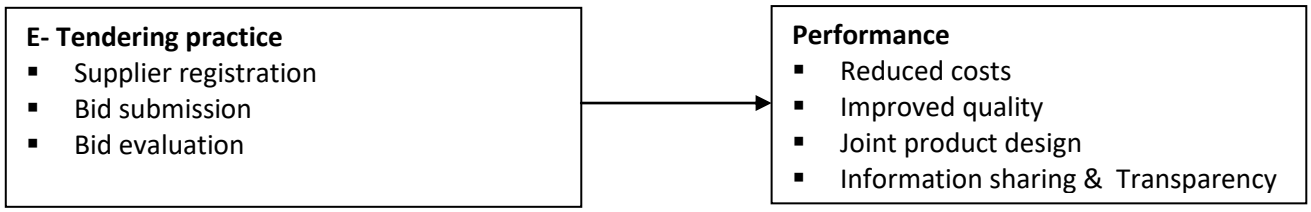

Figure 1: Conceptual Framework

Review of study variables

Electronic tendering is an online process that manages the tendering cycle from the advertisement of the notice straight through to the issuing of an award. It provides a centralized process to help organizations improve efficiencies and accountability while reducing traditional tendering costs and increasing supply chain performance (Chen, 2004). Frankwick (2004) argues that the electronic nature of an e-Tender marketplace means that a business never needs to miss an opportunity as they receive an email or SMS alert every time a relevant, new tender is published. Usually e-tendering is supported by an e-tendering system which also often supports the analysis and assessment of responses. E-tendering does not include closing the deal with a supplier.

E-tendering smoothens a large part of the tactical purchasing process without focusing on the content that is spending category of that process. An electronic based process wherein the complete tendering process; from advertising to receiving and submitting tender-related information are done online. This enables firms to be more efficient in their supply chains as paper-based transactions are reduced or eliminated, facilitating for a speedier exchange of information thus high supply chain performance (Swan, 2000). Traditionally E-tendering has been most commonly used by government agencies and the public sector rather than by the private sector. However, with increasing numbers of both business customers and consumers turning to the internet to research goods and services before making a purchase, e-Tendering is becoming a successful and efficient sales channel for a variety of organizations hence more efficient supply chain performance (Dexter, 2001). In E-tendering process buyer and bidder act as key persons. When this process begins buyer and bidder both have to be registered for accessing web portal of E-tendering. Without registration a buyer cannot publish tender as well as bidder cannot bid for the tender.

According Malik (2013), for E-Tendering to be effected, Registration process, Submission process and Bid evaluation process are necessary. Bid evaluation process will be carried out at buyer end where the buyer will create the committee. This committee is responsible for bid opening. After analyzing the entire bid will be evaluated and comparative report will be generated and result will be shared and appropriate supplier will get the award of contract.

Supply Chain performance

Every CEO must always be concerned with the competition. In today's economy the battlefield is shifting from individual company performance to what we call Supply Chain Performance. Supply Chain Performance refers to the extended supply chain's activities in meeting end-customer requirements, including product availability, on-time delivery, and all the necessary inventory and capacity in the supply chain to deliver that performance in a responsive manner. Supply Chain Performance crosses company boundaries since it includes basic materials, components, subassemblies and finished products, and distribution through various channels to the end customer. It also crosses traditional functional organization lines such as procurement, manufacturing, distribution, marketing and sales,

and research and development. To win in the new environment, supply chains need continuous improvement. To achieve this we need performance measures, or "metrics," which support global Supply Chain Performance improvements rather than narrow company-specific or function-specific (silo) metrics which inhibit chain-wide improvements (Hausman, 2017) Presutti (2003) has defined Supply Chain performance as an evaluation of Supply Chain Management that includes both tangible and intangible factors.

Wiengarten et al. (2010) suggests that e-Procurement system is more pivotal than other e-business applications when studying Supply Chain performance since in the current economic environment, a value creation perspective is important for improving Supply Chain performance. A procurement system is a vital component of a company's Supply Chain system. Typically, a company's procurement function is subdivided into strategic and operational processes since activities and priorities in these two areas are entirely different (Turban et al., 2000).

Supplier management, the pooling of purchase requisitions and procurement oriented product development are tasks that are typically assigned to strategic procurement. E-Procurement enables companies to decentralize operational procurement processes and centralize strategic procurement processes. This results to higher Supply Chain transparency provided by e-Procurement systems. Strategically, e-Procurement will help to consolidate purchasing practices that will lead to greater discounts and better service from suppliers. It also accelerates the flow of important information between the buyer and supplier, reduces administrative hours thus freeing the workers to do other work. This allows the organization to respond quickly to highly competitive new market entrants and improve the chances of winning new business (Egbu, 2004). Procurement performance is the backbone of an organization success since it contributes to competitive purchase and acquisition of quality goods that puts the organization products or services in the competitive edge in the market. However, on several occasions, poor procurement performance has caused private and public sectors financial loss due to delivery of poor quality work materials, loss of value for money and inflated prices. Poor procurement performance also contributed to decrease of profitability of private sector (Juma, 2010).

According to Migai (2010), poor procurement performance is a major hindrance to private sector organizations growth since it causes the delay of delivery, increase of defects, delivery of low quality goods or non-delivery at all. Poor procurement performance in the private sector has been a problem due to incompetent staff, traditional procurement procedures, and inability to embrace e-procurement, poor coordination of procurement activities, lack of quality assurance policies and lack of proper regulations (Juma, 2010). Performance measures need to determine the gap between actual and targeted performance and determine organization effectiveness and operational efficiency. The performance measure can be grouped into two; those that concentrate on financial measures such as profit return on investment and productivity. Also there are those measures that put more emphasis on less tangible and non-financial measures in performance measurements. In this study, the metrics for measuring the performance of the steel manufacturing companies was based on non-financial measures that include the product quality and customer satisfaction. Non-financial performance measures positively affect future performance of the organization (Banker, Potter & Srinivasan, 2000).

Non-financial performance measures are also often considered as the process measures that should lead to good financial performance. From an IS point of view, many tactical and operational benefits generated by procurement departments were achieved by employing web-based e-procurement systems supporting all major procurement innovations such as e-auctions, e-RFx

and ecatalogs, (Rai, Brown, & Tang, 2009). Pearcy, Giunipero and Wilson (2007) summarized that the use of e-auctions within sourcing processes led to purchase price reductions of 30% in cable TV equipment, 20% in power equipment, 39% in medical supplies, 37% in public utilities, and 53% in U.S. armed forces' purchases. Further, Robinson, Sahin and Gao, (2005) found that the application of an automated ereplenishment system instead of a manual-based system leads to buyer-side operational cost reductions of 19.6%, 29.5%, and 12.5% in traditional decentralized, decentralized with information sharing, and coordinated supply chain structures, respectively. Besides, supplier-provided, standardized e-catalogs along with electronically enabled self-service procurement processes disburden procurement departments from operational purchasing activities of non-production materials (Massauer, 2011).

Considerable amount of research was conducted related to single e-procurement system components such as e-auctions, e-negotiation tools or reputation mechanisms. Beamon (1999), mentions some features present in effective performance measurement systems and these include the following: inclusiveness (measurement of all pertinent aspects), universality (allows for comparison under various operating conditions), measurability (data required are measurable), and consistency (measures consistent with organization goals). Also, the strategic goals include key elements such as the measurement of resources (generally cost), output (generally customer responsiveness) and flexibility. Stevens (1990) states that to build up an integrated supply chain requires the management of material flow from three perspectives: strategic, tactical, and operational. From these perspectives, the use of systems, facilities, and people must be seen as a whole and work in a coordinated manner. He also mentions that a company can measure the supply chain performance by inventory level, service level, throughput efficiency, supplier performance and cost.

METHODOLOGY

Descriptive research survey design was used to determine an association between the conceptualized independent and dependent variables as shown in the study's conceptual model. This study targeted 80 employees of the County Governments of Western Kenya. Sampling frame consisted of senior officers belonging to five County Governments under study in Western Kenya.

The study sample size was determined by taking up the whole target population since it was small and manageable. Census technique was applied on the eighty respondents. Primary data was collected by means of self-administered questionnaires. The questionnaires had structured questions. Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences (SPSS). version 24 software. Descriptive statistics such as frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) was used. Data was also organized into graphs and tables for easy reference. Further, inferential statistics such as regression and correlation analyses was used to determine both the nature and the strength of the relationship between the dependent and independent variables. Correlation analysis is usually used together with regression analysis to measure how well the regression line explains the variation of the dependent variable. The linear and multiple regression plus correlation analyses were based on the association between two (or more) variables. SPSS version 24 is the analysis computer software that was used to compute statistical data.

Study conceptualized Regression Model;

$y = \beta_0+\beta_1X_1 + \varepsilon$

y = Supply Chain Performance

β_0 = Constant

X_1= E-Tendering

$\{\beta_1\}$ = Beta coefficients

ε = the error term

FINDINGS AND DISCUSSIONS

The study involved 80 questionnaires being dispatched for data collection, 77 questionnaires were returned completely filled, representing a response rate of 96.25 % which was good for generalizability of the research findings to a wider population.

Descriptive Statistics

These are summarized responses on whether E-Tendering Practices influence Supply Chain performance of the County Governments of Western Kenya.

Most respondents agreed (46.7%) and strongly agreed (18.2%) that E-Tendering practices reduces tender process time; which also was supported by 41.6% of respondents who agreed that the E-Tendering eliminates postal, printing and storage costs. More so, 50.6% of respondents agreed that the electronic billing system really saves on banks transaction costs; while 48.1% of respondents also agreed that adoption of an E-Tendering practice enables suppliers to be able to access tenders/quotation/requests any time anywhere in the world. Further, 40.2% of respondents agreed and strongly agreed (19.5%) that E-Tendering adopted eneble tender documents not to be accessed by unauthorized person.

Lastly, most respondents agreed (46.8%) and strongly agreed (18.2%) (supported by the grand mean = 3.46= 4 = agree) that generally, neither party can deny contractual capabilities

Frankwick (2004) argues that the electronic nature of an e-Tender marketplace means that a business never needs to miss an opportunity as they receive an email or SMS alert every time a relevant, new tender is published. Suppliers get the benefit of customers, who have usually already made a decision to purchase, coming directly to them. They don't have to spend time and money tracking down potential customers. They have a brand new sales channel with very little effort or cost. Customers can let the suppliers do their research for them. Businesses that respond to the e-Tender will provide information about their products and services, their pricing, and any other information the customer might need to help them make the purchase.

Inferential Statistics

Linear regression results

This tested the linear influence of E-Tendering Practices, E-Order Practices, E-Material Management Practice and E-Supplier Management Practice on Supply Chain Performance of the County Governments in Western; Kenya. This was computed by SPSS based on transformed data from categorical data to continuous data so as to run regression analyses based on continuous data.

Linear influence of E-Tendering on Supply Chain Performance

This tested the direct influence of E-Tendering Practices on Supply Chain Performance of the County Governments of Western Kenya. The results were shown in table 1.

Table 1: Direct influence of E-Tendering

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.845[a]	.682	.677	.69397	.682	159.562	1	76	.000

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	**Sig.**
1	Regression	76.844	1	76.844	159.562	.000[a]
	Residual	36.120	76	.482		
	Total	112.964	77			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	**T**	**Sig.**
1	(Constant)	.633	.232		2.945	.004
	E-Tendering	.819	.073	.825	12.632	.000

a. Dependent Variable: Supply Chain Performance

From table 1, the model summary showed that R^2 = 0.682; implying that 68.2% variations in the Supply Chain Performance of the County Governments of Western Kenya is explained by E-Tendering Practice while other factors not in the study model accounts for 31.8% of variation in Supply Chain Performance of the County Governments of Western Kenya. Further, coefficient analysis shows that E-Tendering Practice has positive significant influence on Supply Chain Performance of the County Government of Western Kenya (β = 0.819 (0.073); *at p<.01*). This implies that a single improvement in effective agency banking innovations will lead to 0.819 unit increase in the Supply Chain Performance of the County Government of Western Kenya. Therefore, the linear regression equation is;

(i) y = $\boldsymbol{0.633 + 0.819X_1}$

Where; Y = Supply Chain Performance, X_1 = E-Tendering Practice

Study hypothesis (H_{02}) stated that E-Tendering Practices do not significantly influence Supply Chain Performance of the County Governments of Western Kenya. Linear regression results indicate that E-Tendering Practices significantly influence Supply Chain Performance (β = 0.819 (0.073) at *p<0.05*). **Hypothesis was therefore rejected**. The results indicated that a single improvement in E-Tendering Practices will lead to 0.819 unit increase in the Supply Chain Performance of the County Governments of Western Kenya. Frankwick (2004) argues that the electronic nature of an e-Tender marketplace means that a business never needs to miss an opportunity as they receive an email or SMS alert every time a relevant, new tender is published. Suppliers get the benefit of customers, who have usually already made a decision to purchase, coming directly to them. They don't have to spend time and money tracking down potential customers.

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that there is significant relationship between E-tendering practices and supply chain performance. The null hypothesis was rejected. Hence E-tendering processing practice enhances supply chain performance and E-tendering practice reduces tender processing time,

eliminates postal, printing & storage costs, suppliers are able to access tenders/quotation/requests any time anywhere in the world, alteration of tender documents is impossible or easy to detect, neither party can deny sending or receiving documents, provides fairness to all regardless of geographic location of a supplier and it improves audit trails to a large extent.

The study established that E-tendering processing practice enhances supply chain performance positive. It was recommended that management should ensure that all modules from purchasing Requisition, Quotation/tenders, request for proposals, purchasing order approvals and Transmission, contract monitoring, Goods receipt note. This will reduce tender processing time, eliminate postal, printing & storage costs, wide supplier base will be achieved and audit trails will be maintained thus reduction of corruption.

Areas for further research

The study recommended further research to document findings on the achievements of electronic tendering system to firms, electronic order processing, electronic material management and electronic supplier management. This should cover issues such as cost, time quality and corruption. The study recommended a study to find out the reasons why some of these companies have not incorporated all the procurement activities in E-procurement. A comparative study will be critical in order to establish whether there are any similarities or differences in the factors leading to success of E-procurement across different industries such as between private and public firms and between manufacturing industry and another industry. Further research was recommended to look into effect of outsourcing purchasing functions.

REFERENCES

Akkermans, H., Bogerd, P., & Vos, B. (1999). Virtuous and vicious cycles on the road towards international supply chain management. *International Journal of Operations & Production Management*, 19(5/6), 565-582.

Ali, A., Namusonge, G., & Sakwa, M. (2016). Effect of Firm Managerial Risk Aversion on Corporate Hedging of Listed Firms in Nairobi Securities Exchange in Kenya.IJRDO-*Journal of Business Management*, 2(7), 45-64.

Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic management journal*, 22(6-7), 493-520.

Amstrong, J. (2012). Illusions in regression analysis, *International Journal of Forecasing,* (3), 689-694.

Angeles, R. (2005). RFID technologies: supply-chain applications and implementation issues. *Information systems management*, 22(1), 51-65

Angeles, R., & Nath, R. (2000). An empirical study of EDI trading partner selection criteria in customer-supplier relationships. *Information & Management*, 37(5), 241-255.

Authority, P. P. (2009). The long term policy framework for public procurement in Kenya, Draft zero. Nairobi, Kenya. Awino, B. (2007). The Effect of Selected Strategy Variables on Corporate Performance: A Survey of supply chain management in large private Manufacturing firms in Kenya. Unpublished PhD Thesis, Nairobi: University of Nairobi.

Baily, P. J. H. (2008). *Procurement principles and management*, Harlow, England: Prentice Hall Financial Times.

Barngetuny, D. & Kimutai, G. (2015). Effects of e-procurement on supply chain management performance in Elgeyo-Marakwet County. *International Academic Journal of Procurement and Supply Chain Management*, 1(5), 99-120

Basheka, B., Oluka, P. & Mugurusi, G. (2012). Adopting new approaches for public procurement efficiency: critical success factors (CSFs) for the implementation of e-procurement in Uganda's public sector, *International Journal of Procurement Management,* 5(6), 712–732.

Bernard, H.R. (2002). *Research Methods in Anthropology: Qualitative and quantitative methods*. (3rd edition). Walnut Creek, California: Alta Mira Press

Bilali, J & Bwisa, H. (2015). Factors influencing the Adoption of e-Procurement: A case of Garissa County Government. *The Strategic Journal of Business and Change Management*, 6.

Bolo, A. Z. (2011). An empirical investigation of selected strategy variables on firms' performance: A study of supply chain management in large private manufacturing firms in Kenya. *Journal of Public Administration and Policy Research,* 3(8), 228-236.

Bowersox, D.J., Closs, D.J., & Cooper, M.B. (2007). Supply Chain Logistics Management. New York: Longman. Brains, C., Willnat, L., Manheim, J., Rich, R. (2011), Empirical Political Analysis (8th edition). Boston, MA: Longman

Brandon-Jones, A. & Carey, S. (2011). The impact of user-perceived e-procurement quality on system and contract compliance', *International Journal of Operations and Production*, 45-48

Centobelli, P & Cerchione, R. (2014). E-procurement and E-supply Chain: Features and Development of E-collaboration. *International Conference on Future Software Engineering and Multimedia Engineering,*(2014) Chartered Institute of Purchasing and Supply, (2011). http://www.cips.com/

Chau, P. Y. K. (1996). An Empirical Assessment of a Modified Technology Acceptance Model, *Journal of Management Information Systems,* 13(2), 185-204.

Chegugu, N. R. & Yusuf, K. G. (2017). Effect of electronic procurement practices on organizational performance in public hospitals in the county government of Uasin Gishu, Kenya, *International Academic Journal of Procurement and Supply Chain Management*, 2(3), 16-32.

Chirchir, E. (2015). Relationship between E-procurement Adoption and Partnership Practice in Tea Firms, *International Journal of Business and Management*, 8.

Chopra, S, Meindl, P, & Kalra, D. (2010). Supply chain management. Noida: Pearson Education.

Christensen, T., & Lægreid, P. (2007). Transcending New Public Management: The Transformation of Public Sector Reforms. Burlington, VT: Ashgate Publishing Company.

Christian, T., Ralf, W., & Michael, Q., (2006). The role of information technology in procurement in the Top 200 companies in Switzerland, Competence Center E-Business Basel at the University of Applied Sciences Northwestern Switzerland – FHNW.

Croom, S.R., & Johnston, R. (2003). E-service: enhancing internal customer service through e-procurement. *International Journal of Service Industry Management*, 14(5), 539-555

Croom, S.R., (2005). The impact of e-business on supply chain management: an empirical study of key developments. *International Journal of Operations and Production Management,* 25(1), 55-73.

Dai & Kauffman, (2001). Electronic commerce: a managerial perspective, New Jersey: Person Education, Inc. Davila, A., Gupta, M., & Palmer, R. (2003). Moving Procurement Systems to the Internet: The Adoption and Use of E-Procurement Technology Models, *European Management Journal,* 21(1), 11-23.

Davila, A., Gupta, M., & Palmer, R. J. (2002). Moving Procurement systems to the internet: The Adoption and Use of E-Procurement Technologies Models. *European Management Journal*, 21(1), 25-33

Davis, F. D. (1986). A technology acceptance model for empirically testing new end user information systems: theory and results, Unpublished PhD. dissertation. Cambridge, MA: MIT Sloan School of Management.

Dolmetsch, R., Fleisch, E., & Osterle, H. (2000). Electronic commerce in the procurement of indirect goods, New York: Springer.

Donaldson, L., (2001). *The Contingency Theory of Organizations*, Thousand Oaks: Sage

Dyer, J. H. & Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Inter-organizational Competitive Advantage. *Academy of Management Review*. 23, 660-679.

T. & Vieira, V. (2015). 'Public e-procurement impacts in small- and medium-enterprises', *Int. J. Procurement Management*, 8(5), .587–607

Flynn, B.B., Huo, B. & Zhao, X. (2010). The Impact of Supply Chain Integration on Performance: A Contingency and Configuration Approach. *Journal of Operations Management*, 28, 58-71.

Handfield, R.B., & Nichols, Jr., (1999). Introduction to Supply Chain Management, New Jersey: Prentice-Hall.

Hashim, N., Said, I., & Idris, N. H. (2013). Exploring e-procurement value for construction companies in Malaysia. Procedia Technology, 9, 836-845.

Hsin Chang, H., Tsai, Y. C., & Hsu, C. H. (2013). E-procurement and supply chain performance. Supply Chain Management: *An International Journal*, 18(1), 34-51.

Hunja, R. (2014). E-Procurement: Opportunities & Challenges. *The electronic journal of information systems in developing countries*, 18(1), 1-24

Irene, A., Osei, A., Prince, A., Duah, H., Anita, O., AnokyeOkofo, A. (2014). Christian, European Journal of Business and Social Sciences, 2(12), 71-88.

Electronic procurement: a case study of Malaysia's e-perolehan (e-procurement) initiative', *International Journal of Electronic Governance*, 2, 2–3, 103–117

Karthik, V. & Kumar, S. (2013). Investigating 'degree of adoption' effects on eprocurement benefits, *International Journal of Procurement Management,* 6(2), 211–23

Kenya National Assembly, (2015). Report of the Departmental Committee on Agriculture, Livestock and Co-operatives on the Crisis Facing the Sugar Industry in Kenya.

Koorn, R., Smith, D. & Mueller, C. (2001). E-Procurement and Online market places. Amsterdam, The Netherlands: Compact

Kraljic, P. (1983). Purchasing must become supply management, *Harvard Business Review*, September-October, 109-118.

Kumar, K., & Dissel, H., (1996). Sustainable Collaboration: Managing Conflict and Cooperation in Inter-organizational. Systems, MIS Quarterly, Minneapolis, 20(3), 279-300.

Kumar, R., & Crook, C. W. (1996). Educating senior management on the strategic benefits of electronic data interchange. *Journal of Systems Management*, 47(2), 42.

Lamming, R. (1995). Strategic Procurement Management in the 1990s: Concepts and Cases, *Chartered Institute of Purchasing and Supply*, Stamford (CT): Earlsgate Press.

Lear-Olimpi, M., (1999). Get in step for the future. Warehousing Management, 6, 15.

Lee, H, & Wong, S. (2001). Supply chain integration over the internet. Stanford: Stanford University.

Lee, H., So, K., & Tang, C., (2000).The Value of Information Sharing in a Two-level Supply Chain*, Management Science*, 46(5), 626-643.

Lee, S., & Leifer, R., (1992). A Framework for Linking the Structure of Information Systems with Organizational Requirements for Information Sharing, *Journal of Management Information Systems, Armonk*, 8(4), 27-42.

Leedy, P.D. & Ormrod, J. E. (2010) Practical Research: Planning and Design

Leenders, M. R. & Fearon, H. E. (1997). Purchasing and Supply Chain Management, Boston (MA): McGraw-Hill.

Leenders, M. R., & Fearson, H. E., (1997). Purchasing and Supply Management, (11th edition), Boston: McGraw-Hill.

Lewis, J.L. &. Sheppard, S.R.J (2006). Culture and communication: can landscape visualization improve forest management consultation with indigenous communities?. Landscape and Urban Planning, 77, 291–313.

Li, S. (2002). An Integrated Model for Supply Chain Management Practice, Performance and Competitive Advantage, In: Manufacturing Management, Ohio: The University of Toledo. Love, PED.,

Irani, Z, & Edwards, DJ. (2004). A seamless supply chain management model for construction, Suppl. Chain Manage. An Int. J., 9(1), 43-56. Lucas, S.R. (2014a). Beyond the Existence Proof: Ontological Conditions, Epistemological Implications, and In-Depth *Interview Research. Quality & Quantity*, 48, 387-408. doi:10.1007/s11135-012-9775-3.

Lwiki, T., Ojera, P. B., Mugenda, N. G., & Wachira, V. K. (2013). The Impact of Inventory Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya, *International Journal of Business, Humanities and Technology*, 3(5)

Mahinda, S. W. (2015). Challenges of Implementing E-Procurement in State Corporation-A Case Study of Kenya Ports Authority, *The International Journal of Business & Management*, 3(10), 371.

Makau, J. K. (2014). Challenges facing adoption of electronic procurement in public sector in Kenya: A case of Nairobi Water and Sewerage Company, *International Journal of Social Sciences and Entrepreneurship,* 1(11), 267- 286.

Malone, T., Yates, J. & Benjamin, R. (1987). Electronic markets and electronic hierarchies: effects of information technology on market structure and corporate strategies, Communications of the ACM, 40(6).

Mambo, P. N. (2015). Factors influencing implementation of e-procurement in the national government: a case of the ministry of interior and co-ordination of national government. *Strategic Journal of Business and Change Management*, 2(1)

Massauer, V. T. (2011). Best business practices in operative Einkauf. Wirtschafts informatik & Management, 3, 20-23.

Mathieson, K. (2001). Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior, Information Systems Research, 2(3), 173-91.

McCue, C. & Roman, A. (2012). E-Procurement: myth or reality?, *Journal of Public Procurement*, 5(1), 54–72. McGraw Hill.

McIntosh, G. & Sloan, B. (2001). The potential impact of electronic procurement and global Sourcing within the UK construction industry, Proceedings of Arcom 17th Annual Conference 2001, (Akintoye A. Editor), University of Salford, September 2001, 231-239

McKone-Sweet, K. & Lee, Y-T. (2009). Development and Analysis of a Supply Chain Strategy Taxonomy. *Journal of Supply Chain Management*. 45(3), 3-24.

Migai, J. (2010). Development Partners and Governing Non Governmental Organizations Procurement in Kenya: Macmillan Publishers

Miguel, P. L. S. & Brito, L. A. L. (2011). Supply Chain Management Measurement and its Influence on Operational Performance. *Journal of Operations and Supply Chain Management,* 4(2), 56-70.

Mogere, K. M., Oloko, M., & Okibo, W. (2013). Effect of Inventory Control Systems on Operational Performance of Tea Processing Firms: A Case Study of Gianchore Tea Factory, Nyamira County, Kenya. *The International Journal Of Business & Management,* 1(5)

Mohd, H., Robie, M., Afdhal, M., Baharom, F., Nordin, N., Muhd Darus, N., & Hashim, N. L. (2012). Misuse case modeling for secure e-tendering system. *In: Knowledge Management International Conference* (KMICe) 2012, 4 – 6 July 2012, Johor Bahru, Malaysia.

Morris, S. S., Snell, S. A. & Wright, P. M. (2005). A Resource-based View of International Human Resources: Toward a Framework of Integrative and Creative Capabilities. Working paper,. Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies.

Mose, J. M., Njihia, J. M., & Magutu, P. O. (2013). The Critical Success Factors and Challenges in E-procurement Adoption among Large Scale Manufacturers in Nairobi Kenya. *European Scientific Journal* May 2013 edition, 9, 13

Mota, F. P.B., & Filho, J.R. (2011). Public E-procurement and the Duality of Technology. *Journal of Information Systems and Technology Management*, 8(2), 315-330.

Miguel, P. L. S. & Brito, L. A. L. (2011). Supply Chain Management Measurement and its Influence on Operational Performance. *Journal of Operations and Supply Chain Management*, 4(2), 56-70.

Mogere, K. M., Oloko, M., & Okibo, W. (2013). Effect of Inventory Control Systems on Operational Performance of Tea Processing Firms: A Case Study of Gianchore Tea Factory, Nyamira County, Kenya. *The International Journal Of Business & Management,* 1(5)

Muhia, D. W. & Afande, F. O. (2015). Adoption of e-procurement strategy and procurement performance in State Corporations in Kenya: A Case of Kenya Revenue Authority. Industrial Engneering Letters, 5(6), 1-24. Muinde, C. & Shale, J. (2014). Role of e-procurement strategy in enhancing procurement performance of saving and credit cooperatives in Kenya: Case of Kitui Teachers SACCO Limited. International Journal of Social Sciences and Entrepreneurship, 1(12), 848-862.

Muindi, A. (2014). Factors influencing efficient public procurement in the free primary education. *Journal of supply*

Namusonge, G. S. (2010). Business Statistics: Concepts and Applications. Beau Bassin, Mauritius: VDM Publishing House Ltd.

Neef, D., (2001). *E-Procurement: From Strategy to Implementation*, London: Financial Times Prentice Hall.

Ngeno, K., & Kinoti, J. (2017). Effect of e-procurement on effective supply chain management process in energy sector in kenya. *International Journal of Supply Chain Management*, 2(3), 18-37.

Northouse, P. G. (2007). Leadership: theory and practice. (4 th ed.) Thousand Oaks, CA: Sage Publications. Nyagah, K. & Patrick, M. (2015). Influence of e-procurement implementation on supply chain performance in dairy industry in Kenya: a case of new KCC limited. *International Journal of Innovative Social Sciences & Humanities Research,* 3(2), 31-4.

Nyile, E.K. & Shale, N.I. (2016), role of sustainable procurement practices on supply chain performance of manufacturing sector in Kenya: a case study of East African Portland cement company. *European Journal of Logistics, Purchasing and Supply Chain Management*, 4(3), 1-31.

Oliveira, L. & Amorim, P, (2001). Public E-Procurement, *International Financial Law Review*, 43-47.

Puschmann, T. & Alt, R. (2005). Successful use of e-procurement in supply chains, International Journal of Supply Chain Management, 10(2), 122–133.

Rai, A., Brown, P., & Tang, X. (2009). Organizational assimilation of electronic procurement innovations. Journal of Management Information Systems, 26(1), 257-296.

Rajab, N. F., Namusonge, G., & Shaelle, N. (2016). Effect of Electronic Supplier Management Practices on the Implementation of Preference Regulations on State Corporations in Kenya. *International Journal of Innovative Research and Development*, 5(13)

Rotich, G. K., & Okello, B. (2015). Analysis of use of e-procurement on performance of the procurement functions of County Governments in Kenya. *International Journal of Economics, Commerce and Management*, 3(6), 1381-1398.

Rotich, G., Muma, B. & Waruguru, E. (2015). Relationship between E-Tendering and Procurement Performance among County Governments in Kenya. *Science Innovation,* 3(5), 46-51.

Samuelson, P. (1965). Proof That Properly Anticipated Prices Fluctuate Randomly. Industrial Management Review, 6, 41–49.

Saunders, M., Lewis, P., &Thornhill, A. (2012). Research Methods for Business Students (6th ed.). Edinburgh: Pearson Education.

Shalle, N. I., Guyo, W., & Amuhaya, I. M. (2013). Role of E-Procurement Strategy in Enhancing Procurement Performance in State Corporations in Kenya. *International Journal of Science and Research*, 2(11), 421-426.

Shalle, N. I., Guyo, W., & Amuhaya, I. M. (2014). Effects of Buyer/Supplier Collaboration on E-Procurement Performance in State Corporations in Kenya, *European Journal of Management Sciences and Economics*, 1(4), 170- 185

Shields, P. M., & Rangarajan, N. (2013). A playbook for research methods: Integrating conceptual frameworks and project management. Stillwater, OK: New Forums Press. Simchi-Levi, D., Kaminsky, P. & Simchi-Levi, E. (2010). Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies. Boston, MA: McGraw-Hill

Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2003). Managing the Supply Chain, Boston, MA: McGraw-Hill. Simichi-Levi, D., Kaminisky, P., & Simichi-Levi, E., (2000). Designing and Managing the Supply Chain, Boston: McGraw-Hill.

Stratman, J.K. & Roth, A.V. (2004). Enterprise Resource Planning Competence: A Model, Propositions and Pre-Test, Design-Stage Scale Development, Proceedings of the 30th Annual Meeting of the Decision Sciences Institute, New Orleans, 199-201.

Tai, Y.M., Ho, C.F., & Wu, W.H. (2010). The performance impact of implementing web-based e-procurement systems, International Journal of Production Research, 48(18), 5397-5414

Talluri, S., Narasimhan, R., & Viswanathan, S. (2007). Information technologies for procurement decisions: a decision support system for multi-attribute e-reverse auctions. International Journal of Production Research, 45(11), 2615-2628.

Teo, T. S., & Lai, K. H. (2009). Usage and performance impact of electronic procurement. Journal of Business Logistics, 30(2), 125-139.

Toktaş-Palut, P., Baylav, E., Teoman, S., & Altunbey, M. (2014). The impact of barriers and benefits of e-procurement on its adoption decision: An empirical analysis. *International Journal of Production Economics*, 158, 77-90.

United Nations (2011). E-Procurement: Towards Transparency and Efficiency in Public Service Delivery. Report of the Expert Group Meeting 4-5 October, United Nations Headquarters, New York

USAID. Van Weele, A. (2002). Purchasing and Supply Chain Management, Analysis, Planning and Practice, London: (2), 185-204.

Venkatesh, V. (2010). Determinants of perceived ease of use: integrating control, intrinsic motivation Thomson Learning. Van Weele, A.J. (2010). *Purchasing and Supply Chain Management*: Analysis, Strategy, Planning and Practice, (5th ed). London: Thomson Learning.

Wachiuri, E. W., Waiganjo, E., & Oballah, D. (2015). Role of supplier development on organizational performance of manufacturing industry in Kenya; a case of East Africa Breweries Limited, *Int. J. Educ. Res*, 3(3), 683-694

Wagner, C. M. & Sweeney, E. (2010). E-Business in Supply Chain: National Institute for Transport and Logistics Management. *Modeling and implementation* (24-42). IGI Global.

Waithaka, H. K., & Ngugi, K. (2014). Factors influencing Acquisition of Stressed Assets and Asset Securitization into the Financial Market in Kenya, *International Journal of Social Sciences and Entrepreneurship*, 1(2), 529-539.