INFLUENCE OF E-PROCUREMENT PRACTICES ON PROCUREMENT EFFICIENCY IN COUNTY GOVERNMENT OF BUSIA

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ABSTRACT

This research looked into the influence of e-procurement practices on procurement efficiency in County Government of Busia. Recent findings had shown a low efficiency in the procurement process in County Government of Busia. So far, no study had been conducted to investigate the influence of e-procurement practices on procurement efficiency. Hence, there was need to examine e-sourcing influence on procurement efficiency in County Government of Busia; to determine e–supplier selection influence on procurement efficiency in County Government of Busia; to find out e-ordering influence on procurement efficiency in County Government of Busia and to establish e-payment influence on procurement efficiency in County Government of Busia. The study employed data collection and analysis from sampled staff of County Government of Busia. Both inferential and descriptive statistical analyses were employed. SPSS software 23 was useful in the analysis. The results revealed that there is significant positive influence of E-sourcing, e-ordering, e-supplier selection and e-payment on procurement efficiency in county government of Busia. The study recommended that for County Governments in Kenya to enhance e-sourcing, they should have online request for quotation reducing lead time. This would reduce cost and improve efficiency in procurement process in the County Governments. The study recommended that there was need for County governments in Kenya to adopt the least practiced e-ordering practices such as e-requisition and e-receipting in order to reduce the transaction costs and speed up the procurement process.

Key Words: *e-sourcing, e–supplier selection, e-ordering, e-payment, Procurement Efficiency*

INTRODUCTION

E-procurement is the use of information technology to develop a procurement process that is responsive to changes in the environment (Roma & McCue 2012). The concept of e-procurement is adopted by literally all industries and all kinds of organizations. Specifically, in the public sector, e-procurement is driven by social, cultural and political factors. Implementation of e-procurement in public procurement requires resources and specialized skills. In addition, the process requires a well-coordinated change management systems and training program (Garran, 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 is 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 2011). Kaliannan (2017) pointed out that Malaysian public sector are going through a rapid change especially as far as adoption of technology is concerned. Adoption of e-government and particularly e-procurement is inevitable for the government.

In Kenya, the government actively got involved in adoption of e-procurement when the Jubilee government came into power. Since then there has been a lot of pressure and reforms to ensure all public procurement functions are conducted online. The Kenyan government made it mandatory for procurement of all public goods, works and services to be procured through online platforms (Quesada 2011).

For County governments in particular, there is a directive for all procurement and finance operations to be conducted online. For instance, the government introduced integrated financial management information system (IFMIS) that is mandatory for all the 47 counties. IFMIS was introduced to improve governance by providing real time financial information and effectively programs, formulate budget budgets. It also enhances transparency and accountability and acts as a deterrent to corruption and fraud (USIAD, 2008).

According to Quesada (2010) he emphasizes on importance of e-procurement studies since its more critical functions of supply chain. To support the studies he identified that organizations spend at least one third of their overall budget on procurement of products and services. Hence it is imperative for any organization to ensure that efficiencies are built within the procurement process to ensure competitive advantage and profitability.

Costs hamper public participation in county resource management and that county government, particularly in Western Kenya, require increased vigilance on county resources given the population associated with them (Rotich & Okello 2015). Given that resource management is a bigger challenge in western Kenya and Busia county is one of them, there is need to establish the contribution of public procurement process to this and particularly what role e procurement may play since there has never been an attempt to attribute the same to the county government's procurement process.

E-procurement is associated with reduced transaction cost, improved process efficiency, increased contract compliance, reduced cycle times and reduced inventory costs (Aberdeen 2015) and improved operational and cost efficiency (Roma and Mccue, 2012) according to Mose, Njihia and Magutu, (2013) e-procurement leads to improved procurement performance. It facilitates electronic documentation of the bidding process enhancing accountability and transparency thereby improving procurement performance. Similarly, abarden (2011) points out that e-procurement leads to improved satisfaction of customer demands,

improved contract compliance, enhanced supply chain capacity, reduced inventory costs and improved inventory management. Adoption of e-procurement may lead to improved supplier and customer relations thus enhance achievement of strategic procurement goals leading to enhanced procurement performance (Martinez, 2017). In this study, the researcher is interested in investigating the influence of e-procurement practices on procurement efficiency in County Government of Busia.

Statement of the Problem

In today's world, e- Business has become part and parcel of everyday life in many business circles. The emphasis is on the use of technology to substitute or enhance transactional activities in order to gain operating efficiencies (Omanyi, Njeri & Mungai 2013). According to Geoffrey (2015) e-Procurement is one of the reforms that have been adopted by the government of Kenya to enhance public procurement operations which is expected to bring sanity in the procurement operations, reduce costs and enhance efficiency. For many organizations the objectives of adoption of e-procurement is to enhance efficiency and reduce costs. However, many organizations adopt e-procurement strategies without clear understanding on what to expect. To understand the concept of e-procurement and the associated benefits, a number of studies had been done. For instance, studies have been done on implementation of e-procurement, challenges of implementation of e-procurement and benefits of e procurement. The procurement function in Kenya has been characterized by massive scandals and indignity which have been attributed to poor handling of procurement information thus leading to excessive corruption (Thai, 2017). There is need to have a robust automated procurement system which is interlinked and this will lead to enhanced competitiveness and lowered costs (Ogot, 2017). This study was undertaken to find out influence of e-procurement practices on procurement efficiency.

Objective of the Study

The general objective of this study was to establish the influence of e-procurement practices on procurement efficiency, A case of County Government of Busia. The specific objectives were;

- To examine E-sourcing influence on procurement efficiency in County Government of Busia
- To determine E–supplier selection influence on procurement efficiency in County Government of Busia
- To find out E-ordering influence on procurement efficiency in County Government of Busia
- To establish E-payment influence on procurement efficiency in County Government of Busia

The research was guided hypotheses

- H_{O1}: E-sourcing does not significantly influence procurement efficiency in County Government Busia
- H_{o2}: E-supplier does not significantly influence procurement efficiency in County Government of Busia
- H_{o3}: E-ordering does not significantly influence procurement efficiency in County Government of Busia
- H_{o4}: E-payment does not significantly influence procurement efficiency in County Government of Busia

LITERATURE REVIEW

Transaction Cost Theory (TCT)

Xinyu &Patricia (2007) defines a transaction as a process by which a good or service is transferred across a technologically separable interface. In classical economic theory, it is assumed that information is symmetric in the market. Since both buyers and sellers are assumed to have the same amount of information, the transaction can be executed without cost. In reality, however, markets are often inefficient. In order to proceed with a transaction, consumers must conduct activities such

as searching for information, negotiating terms, and monitoring the on-going process to ensure a favourable deal. This theory is relevant in the context of e-procurement on performance because it helps a company to be efficient and effective in their performance in terms of value for money.
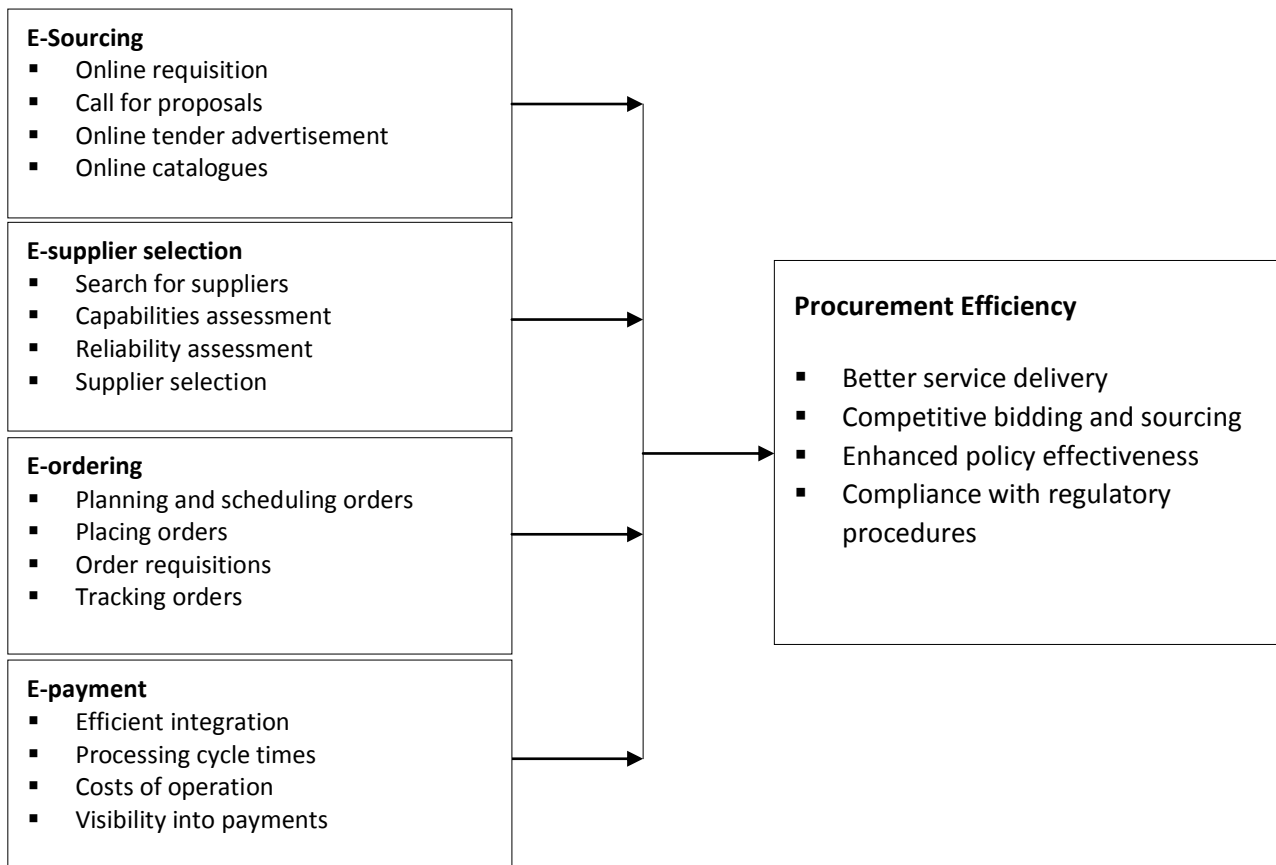
Innovation Diffusion Theory (IDT)

Additionally, this study was underpinned by Innovation Diffusion Theory (IDT). This theory discusses in terms of traditional purchasing, e-procurement is an innovative application of information technology by organizations. Therefore, IDT can be applied to explore consumers' e-procurement behavior. The rate of adoption is mainly dependent on five attributes of an innovation: relative advantage (the extent to which an innovation is perceived to be better than the one it substitutes for or competes with), compatibility (the extent to which an innovation is perceived to be consistent with the experiences and requirements of potential adopters), complexity (the extent to which an innovation is perceived to be difficult to use), trialability (the extent to which an innovation can be experimented with on a limited basis) and observability (the extent to which the utility of an innovation is visible to the public). Relative advantage, compatibility, trialability, and observability of an innovation are found to be positively related to its rate of adoption, while complexity is negatively associated with its rate of adoption (Xinyu & Patricia. 2007). This theory is very important in the context of this research especially in procurement function performance. Reason for this is that activities taken by procurement functions need to ensure organizations continue to improve their s performance. In Kenyan public procurement

functions are aiming to offer services that are good to the public.

Technology Acceptance Theory

This theory argues that Technology acceptance model was introduced by Devis (1986). According to this theory, emerging technologies cannot improve organizational effectiveness and performance if the change has not been accepted by the users (Davis, 1986). The theory of technology acceptance is one of the most popular theories in understanding adoption of computer technologies. Adoption of any innovation or especially information technology based requires investment in computer-based tools to support decision making, planning communication. However, these systems may be risky. It is therefore very critical that the systems are specified on organizational preference and logic. It is also necessary to understand that people may resist technological changes. There must be an effort to understand why people resist changes and the possible ways through which such issues can be resolved. Appropriate organizational culture must be inculcated; the change must be adopted in an incremental way accompanied by communication. Everyone involved must be informed on their roles and empowered to perform the respective roles (Kamel, 2014).

Theory of technology is based on two assumptions; perceived usefulness of the system such us; improved performance, enhanced productivity, effectiveness and efficiency in operations etc. and the perceived ease of use of the new systems such as ease to learn, ease to use, ease to control and ease to remember. This theory brings an understanding that acceptance and use of new technology is a function of the users" feelings about the system and its perceived benefits.

Page: - 672 -

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| Independent Variable | Dependent Variable |

Figure 1: Conceptual Framework

Empirical Review

It is the process of identifying new supplier to deliver goods or services in a specified category through electronic means. It is an internet-based application which enables a collaborative technology in the full life-cycle of the procurement process between the buyer and supplier. The e-sourcing is one of the best e-purchasing practices that organizations are employing to reduce costs (Kock, 2005). Presently, e-sourcing applications offers two main functions which are; online request for quotations (RFQ), this whereby of identifying the needs, the buyer ask possible suppliers to send their quotation of the product or service which is then evaluated through the application. The second one is online auctions; this is whereby buyers are invited to bid for the contracts being offered. The lowest bidder is usually the one given the contract to supply needed goods or services.

With today business environment which focus mostly on efficiency and customer satisfaction, e-sourcing has played a major role in business achieving its objective. The use of e-sourcing benefits in the following ways: Cost saving; sourcing enhances visibility on expenditures and economies of scale through bulk buying (Evans and Wurster, 2001; De Boer, 2002). The organization can save money through the implementation of E-sourcings in the procurement department. Reduce sourcing cycle time; e- sourcing has tremendously reduces the time take from identifying the supplier, negotiation and contract signing. As survey by SAP found out that organization that has adopted use of e-sourcing applications their cycle time reduced between 30% and 75%.

Supplier pre-qualification is one of the principle pillars of e-supplier selection, which has a direct

influence in the decisions taken to affect the operational performance of an organization. The effects of poor supplier selection become apparent as an entity grows because it also comes to rely on outsourcing services for its core activities. (Chan, et al, 2007). A number of enhancements in practices of selecting suppliers can bring about a downstream effect in the supply chain. (Scott et al., 2014). This is also because of the increase in the number of suppliers eligible for selection including the international and regional ones due to the market globalization effect through web-based practices of procurement where customer's tastes and preferences keep changing and more transparency is a requirement.

The success of e-procurement is depend on the depth and timing of customer involvement in the process, where proposed solutions are offered to them and a number of issues are resolved as timely as possible. Various options are also available where the enterprise can access a wide catalogue of suppliers to select from as they wish (Birks et al., 2001). The willingness of e-suppliers and the appropriateness of information flow are some of the factors that determine the success of the e-procurement initiative (Kaliannan et al., 2009). This is because there are a number of fears towards the implementing of e-commerce practices by the supplier coming from their non-involvement in the process.

Yen and Ng (2013) also conducted study on the impacts of e-procurement in the procurement process on the supply chain by analyzing the project of Hong Kong Textile. They used SWOT analysis to describe impacts in each stage of procurement process. Strengths and weaknesses were used as internal performance measurement in the procurement process, for example, efficiency, and effectiveness.

Matunga, Nyanamba and Okibo (2013) assessed the effect of e-procurement on efficient procurement in public hospitals. The objectives of the study were to assess the extent to which e-procurement has improved the quality of goods in public hospitals, to determine the extent to which e-procurement has reduced price charged for goods purchased in public hospitals and to identify the extent to which e-procurement has ensured best value for money in public hospitals procurement. The study established that Kisii Level 5 hospital uses e-tendering, e - quotations and e- sourcing as the main e-procurement applications and that the greatest challenges faced when using e-market provider was inadequate funding, organization's inability to handle change management and lack of training of employees on how to use the system. The study concluded that public hospitals have adopted some of the e-procurement applications regardless of the challenges that accompany the adoption.

Rotich and Okello (2015) analysed use of e-procurement on procurement efficiency of county governments in Kenya. This study aimed at examining the relationship between e-procurement and procurement performance of County Governments in Kenya. The results revealed that e-procurement is positively related with performance of supply chain function of County Governments in Kenya. The study therefore recommended that the Government come up with policies on adoption of e-procurement practices and provide critical resources and leadership in adoption of e-procurement.

A study done by Basheka, Oluka and Mugurusi (2012) the adopting new approaches for public procurement efficiency: critical success factors (CSFs) for the implementation of e-procurement in Uganda's public sector confirm that in Uganda's context, the major CSFs for e-procurement include: careful involvement of suppliers; systematic risk management approaches; systematic redesign of organizational processes; use of experienced consultants; careful selection of software providers.

Gupta and Palmer (2003), using a survey of 168 US public and private sector organizations, indicate that e-Procurement technologies will become an important part of supply chain management and that the rate of adoption will accelerate as the adopters share their experiences of success factors and perceptions of low risk. Similarly, Barua, Konana, Whinston and Yin (2001) identified e-Procurement as the element of e-business most contributory towards the e-Business operational excellence of large corporations.

Electronic Payment System encompasses the total payment processes, which include all the mechanisms, technological systems, institutions, procedures, rules, laws etc. that come into play from the moment a payment instruction is issued by an end-user. Different kinds of rules, regulations, mechanisms, technology and arrangements have therefore been put in place by trading partners, markets and governments (stakeholders involved in EPS development) in all countries and throughout time to develop effective infrastructure of monetary exchange, commonly referred to as payments systems (Bossone and Massimo, 2001).

Electronic payment system is an online business process used for fund transfer using electronic means like personal computer, mobile phones etc. They are widely used in bank whenever transactions are made in terms of payment and other means. The various modes of e-payment are Debit Card Payment System, Credit Card Payment System, Online Electronic Cash System, Electronic Cheque System and Smart Cards based Electronic Payment System. (Manav, 2014

A study by Veronica et al ,(2011) defines an electronic payment as a payment services that utilize ICT, including cryptography and telecommunications networks which includes is classified into cash-like systems (e-cash), check-like systems (credit card and credit-debit based systems), and hybrid systems (stored- value card

based systems) . For successful electronic payment implementation, users' awareness must be increased, encouraged to use it, and be assured that the system is secure and comprehensive with a high quality telecommunication infrastructure facilities must also be provided. He further suggests that to increase customer interest, they should be able to choose the payment instrument with the lowest cost. Customers must also be able to keep track on the balance. Based on his findings he suggested that in designing electronic payment system, the most important issues that must be addressed are efficiency, security, convenience, cost, flexibility or universality, privacy, reliability, customer interest, and infrastructures.

Procurement efficiency covers broader area of procurement, which include: internal users, the suppliers, qualification of procurement employees, purchasing function, market forces, government policy, and management decisions (Engström ,2009).Since objectives, targets and metrics are generally not established; procurement efficiency becomes very difficult to evaluate (Kakwezi & Nyeko, 2010). Studies reveal that it is difficult to realize value for money in the manual procurement system due to a myriad of reasons, including: slow transaction processing; increased handling errors; large volume of paper generated; difficulties in expediting deliveries; complicated procedures; excessive state intervention; bureaucratic processes; lack of centralized control; too many suppliers; lack of product standardization and lack of buyer influence (McConnell, 2009).However, e-procurement solution came as a revolution to address the mentioned challenges in order to enhance procurement efficiency.

Among the state corporations globally that have already adopted e-procurement, the initiative has been heralded for the achievement of value for money because of its ability to actualize e-procurement promises identified by Hsiao & Teo (2005).These promises include: procurement cost

reduction, enhanced customer service level, improved policy compliance and reduced procurement lead-time. As a result, procurement efficiency of such state corporations were greatly enhanced (Amayi & Ngugi, 2013; Doherty 2013). A major breakthrough in e-procurement amongst public entities is the emergence of standard e-procurement procedures that replaced the manual procurement processes in the government open tendering; making them more efficient.

METHODOLOGY

A descriptive research design was adopted in this study. The study included the employees in key departments in the County Government of Busia. The target populations were 102 respondents from procurement department, ICT department, Audit Department, Account and finance department. The study adopted simple random sampling technique since the target population involved all employees in all departments Busia county.

A structured questionnaire was employed in data collection from the sampled respondents self-administered and structured in a way that facilitates collection of categorical data in relation to study constructs. Primary data was collected using questionnaires.

A pilot study was carried out in County Government of Vihiga to test the tools. The data processing and analysis was facilitated by the use of the Statistical Package for Social Sciences (SPSS) version 26. The data analysis consisted of both descriptive and inferential statistics. Descriptive statistics comprised of measures of distribution (frequencies and percentages), central tendencies (means), and variation (standard deviations). On the other hand,

inferential statistics constituted of Spearman rank correlation and regression analyses.

$$YPE = \alpha + \beta_{1ESp} + \beta_2 ESSp + \beta_3 EOp + \beta_4 EPp + \varepsilon$$

Where

ESP= E-sourcing

ESSP= E-Supplier Selection Practice

EOP= E-ordering

EPP= E-Payment Practice

YPE =Procurement Efficiency

α = the constant

$\beta 1, \beta 1, \beta 2, \beta 2, \quad \beta 3 \beta 3, \beta 4 \beta 4 = \beta 3 =$ Regression constants

$\varepsilon\varepsilon$ =Error term

FINDINGS AND DISCUSSIONS

Analysis of Descriptive Data

These are descriptive statistics based on summarized responses on the structured questions about the influence of e-procurement practices on procurement efficiency a case of Busia County. The responses are based on Likert scale with values ranging from 5 to 1; that is; 5=Strongly Agree, 4=Agree, 3= Uncertain, 2=Disagree and 1= Strongly Disagree. The results were presented in the table form showing frequencies of responses as per each statement and its corresponding percentage score in brackets, means and standard deviations.

E-sourcing and Procurement Efficiency

These were descriptive statistics on the influence of E-sourcing on procurement efficiency in the county government of Busia as summarized in table 1.

Table 1: Descriptive statistics: E-sourcing

Statement	5	4	3	2	1	Mean	Std. Dev
There is e-sourcing platform to improve search of prospective suppliers to the county government.	5 (6.6)	53 (69.7)	13 (17.1)	2 (2.6)	3 (3.9)	3.72	0.79
There competitive bidding on the e-sourcing platform	8 (10.5)	48 (63.2)	13 (17.1)	4 (5.3)	3 (3.9)	3.71	0.88
The county government uses e-sourcing to reduce the costs associated sourcing of materials, goods and services	12 (15.8)	42 (55.3)	12 (15.8)	6 (7.9)	4 (5.3)	3.68	1.01
There is online requisitions/purchasing in the e-procurement system	4 (5.3)	52 (68.4)	10 (13.2)	7 (9.2)	3 (3.9)	3.62	0.88
The county uses e-sourcing to improve negotiation speed and value for all purchases by the county government	9 (11.8)	41 (53.9)	15 (19.7)	10 (13.2)	1 (1.3)	3.62	0.91
There are online specifications for procured items on the e-sourcing platform	10 (13.2)	36 (47.4)	11 (14.5)	12 (15.8)	7 (9.2)	3.39	1.18

Valid listwise 76

Grand mean = 3.63

From table 1, most respondents agreed (69.7%) and strongly agreed (6.6%) that there is e-sourcing platform to improve search of prospective suppliers to the county government. A mean of 3.72 postulated e-sourcing platforms has improved search of prospective suppliers to the county government to moderate extent. More so, 63.2% and 10.5% of respondents agreed and strongly agreed respectively that there competitive bidding on the e-sourcing platform.

Further, slight majority respondents agreed (55.3%) that county government uses e-sourcing to reduce the costs associated sourcing of materials, goods and services and additional 15.8% strongly agreed on the same. A mean of 3.68 revealed that, to a moderate extent, county government uses e-sourcing to reduce the costs associated sourcing of materials, goods and services. The study also revealed 68.4% agreed that there is online requisitions/purchasing in the e-procurement system while 5.3% agreed on the same. A mean of 3.62 indicated that there is online requisitions/purchasing in the e-procurement system. Similarly, 53.9% and 11.8% of the sampled respondents agreed and strongly that the county uses e-sourcing to improve negotiation speed and value for all purchases by the county government. Lastly, slight majority of the respondents agreed (47.4%) that there are online specifications for procured items and further supported by 13.2% of the respondents who strongly agreed.

(Monczka et al. 2015) asserted that E-Sourcing tools are used to manage the flow of different types of documents for example by either automating the document creation process or electronically transmitting documents to the suppliers. According to Lewis (2014) found out that implementation of e-sourcing starts with selection of an e-tool (E-auction, e-tracking, e-bidding, e-RFX)to complement an organizational strengths, followed by change management and training of the staff and other stakeholders where possible.

E –supplier selection on Procurement efficiency

These are descriptive statistics on the influence of E–supplier selection on procurement efficiency in the county government of Busia as summarized in table 2.

Table 2: Descriptive statistics: E –supplier selection

Statement	5	4	3	2	1	Mean	Std.dev
The county government uses e-platforms to search for suppliers.	11 (14.5)	50 (65.8)	9 (11.8)	5 (6.6)	1 (1.3)	3.86	0.80
The county government uses e-platforms to check suppliers finances to assess capability	10 (13.2)	45 (59.2)	8 (10.5)	11 (14.5)	2 (2.6)	3.66	0.97
The county government uses e-platforms to assess the cost/quotation of suppliers for selection	9 (11.8)	46 (60.5)	12 (15.8)	8 (10.5)	1 (1.3)	3.71	0.86
The county government uses e-platforms to collaborate with suppliers on product design issues	14 (18.4)	45 (59.2)	11 (14.5)	5 (6.6)	1 (1.3)	3.87	0.84
The county government uses e-platforms to assess the quality of products of suppliers for selection.	24 (31.6)	32 (42.1)	5 (6.6)	13 (17.1)	2 (2.6)	3.83	1.14
The county government uses e-platforms to assess the service quality of services of supplies for selection	11 (14.5)	39 (51.3)	8 (10.5)	11 (14.5)	7 (9.2)	3.47	1.18
Valid listwise 76							
Grand mean = 3.73							

From table, 2, 65.8.0% and 14.5% of respondents agreed and strongly agreed respectively the county government uses e-platforms to search for suppliers. On the other hand, 11.8% of the respondents were undecided. A mean of 3.86 suggested that the county government uses e-platforms to search for suppliers. Further 59.2% of the sampled respondents agreed that the county government uses e-platforms to check suppliers' finances to assess capability and 13.2% agreed on the same.

More so, 60.5% of respondents agreed that the county government uses e-platforms to assess the cost/quotation of suppliers for selection, while 11.8% of the respondents agreed on the same. On the other hand, 10.5% and 1.3% disagreed and strongly disagreed respectively on the same. The results also revealed that most of the respondents

(59.2%) agreed that the county government uses e-platforms to collaborate with suppliers on product design issues and 18.4% strongly agreed on the same. A mean of 3.71 implied that the county government uses e-platforms to collaborate with suppliers on product design issues.

The study further revealed that 42.1% of the respondents agreed and further 31.6% of the respondents strongly agreed that the county government uses e-platforms to assess the quality of products of suppliers for selection. Lastly, 51.3% of respondents agreed that the county government uses e-platforms to assess the service quality of services of supplies for selection while 14.5% agreed on the same. A mean of 3.47 postulated that the county government uses e-platforms to assess the service quality of services of supplies for selection.

E-ordering on Procurement efficiency

These are descriptive statistics on the influence of E-ordering on procurement efficiency in the county government of Busia as summarized in table 3.

Table 3: Descriptive statistics: E-ordering

Statement	5	4	3	2	1	Mean	Std. Dev
The e-procurement system allows placing orders online	8 (10.5)	43 (56.6)	10 (13.2)	11 (14.5)	4 (5.3)	3.53	1.04
There is defining of order specifications online	8 (10.5)	41 (53.9)	15 (19.7)	10 (13.2)	2 (2.6)	3.57	0.94
There is placing of procured items online	21 (27.6)	43 (56.6)	9 (11.8)	2 (2.6)	1 (1.3)	4.07	0.79
There is online order specifications confirmation	13 (17.1)	36 (47.4)	13 (17.1)	8 (10.5)	6 (7.9)	3.55	1.14
The e-ordering system enhances buyer/supplier collaboration	9 (11.8)	37 (48.7)	19 (25)	7 (9.2)	4 (5.3)	3.53	1.00
Generally, e-ordering enhances performance of the procurement function in the county government	14 (18.4)	36 (47.4)	14 (18.4)	11 (14.5)	1 (1.3)	3.67	0.99

Valid listwise 76

Grand mean =3.65

From table 3, majority of the respondents strongly agreed (10.5%) and agreed (56.6%) that e-procurement system allows placing orders online. On the other hand, 14.5% of the respondents strongly disagreed on the same. A mean of 3.53 revealed e-procurement systems allows placing orders online. The results also revealed that 53.9% of the respondents agreed that there is defining of order specifications online while 19.7% were neutral on the same assertion.

Further, most of the respondents (56.6%) of respondents agreed that there is placing of procured items online and additional 27.6% strongly agreed on the same. A mean of 4.07 postulated that there is placing of procured items online. The results also revealed that 47.4% and 17.1% of the respondents agreed and strongly agreed that there is online order specifications confirmation although 17.1% of the respondents were neutral.

The results also revealed that 48.7% of the respondents agreed that e-ordering system enhances buyer/supplier collaboration while 11.8% strongly agreed. However, 25.0% of the respondents were neutral. Lastly, 47.4% of the respondents agreed that e-ordering enhances performance of the procurement function in the county government and further 18.4% strongly agreed on the same. A mean of 3.67 indicated that e-ordering enhances performance of the procurement function in the county government.

Hawking et al., (2014) asserted that E-ordering has evolved into the use of electronic technologies to streamline and enable the ordering activities of an organization. The benefit of e-ordering has contributed great saving in bottom line procurement costs of many companies worldwide and hence technology use is a significant tactic inmost companies' e-business strategies. It is claimed that a company engaging in e-ordering can cut procurement cost by 8 to 15 % (Ghazaly, 2010).

Page: - 679 -

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E-payment on Procurement efficiency

There are descriptive statistics on the influence of E-payment on procurement efficiency in the county government of Busia as summarized in table 4.

Table 4: Descriptive statistics: E-payment

Statement	1	2	3	4	5	Mean	Std.dev
Payment to suppliers is done electronically	33 (43.4)	33 (43.4)	6 (7.9)	2 (2.6)	2 (2.6)	4.22	0.90
E-payment has saved on time	12 (15.8)	41 (53.9)	7 (9.2)	13 (17.1)	3 (3.9)	3.61	1.07
E-payment has reduced costs of operation from reduced personnel, lower administrative expenses, and decrease in printing and mailing costs	14 (18.4)	31 (40.8)	6 (7.9)	14 (18.4)	11 (14.5)	3.30	1.36
E-payment has improved visibility into payments and overall spending, translating into better cash flow forecasting and risk management abilities	34 (44.7)	28 (36.8)	9 (11.8)	2 (2.6)	3 (3.9)	4.16	1.01
E-payment has reduced losses incurred resulting from cheque fraud, theft of pre-printed cheques and data entry errors.	10 (13.2)	37 (48.7)	15 (19.7)	10 (13.2)	4 (5.3)	3.51	1.05
E-payment has positively impacted on the environment from going "green" as a result of migrating from cheques to electronic payments.	16 (21.1)	39 (51.3)	15 (19.7)	5 (6.6)	1 (1.3)	3.84	0.88
Valid listwise 76							
Grand mean =3.77							

From table 4, slight majority respondents strongly agreed (43.4%) that payment to suppliers is done electronically and 43.4% of the respondents agreed. A mean of 4.22 implied that payment to suppliers is done electronically. Further, 53.9% and 15.8% agreed and strongly agreed respectively that E-payment has saved on time. A mean of 3.61 indicted that E-payment has saved on time.

The results also revealed that most of the respondents agreed (40.8%) that E-payment has reduced costs of operation from reduced personnel, lower administrative expenses, and decrease in printing and mailing costs while 18.4% strongly agreed on the same. However, 18.4% disagreed on the same. The results further revealed that 44.7% of the respondents strongly agreed that E-payment has improved visibility into payments and overall spending, translating into better cash flow forecasting and risk management abilities. A mean of 4.16 indicated that E-payment has improved visibility into payments and overall spending, translating into better cash flow forecasting and risk management abilities.

The results further indicated 48.7% agreed that E-payment has reduced losses incurred resulting from cheque fraud, theft of pre-printed cheques and data entry errors although 19.7% were undecided.

Lastly, most of the respondents agreed that E-payment has positively impacted on the environment from going "green" as a result of migrating from cheques to electronic payments as

shown by 51.3% and further 21.1% strongly agreed on the same.

A mean of 3.84 indicated that E-payment has positively impacted on the environment from going "green" as a result of migrating from cheques to electronic payments.

Odi and Richard (2013) indicated that the introduction of e-payment system, the world payment system turned out to align with the current trend of cashless transactions among individuals, businesses and governments. E-Payments component of e-procurement, from an economic stand point, enhances efficiency through transaction cost savings and reduced direct procurement costs (Davila and Gupta, 2012; Henriksen & Mahnke, 2015).

Inferential statistics

Table 5: Correlations

		E-S	E –SS	E-O	E-P	PE
E-S: E-sourcing	Pearson Correlation	1	.447[**]	.247[*]	.490[**]	.515[**]
	Sig. (2-tailed)		.000	.031	.000	.000
	N	76	76	76	76	76
E-SS: E – supplier selection	Pearson Correlation	.447[**]	1	.453[**]	.473[**]	.613[**]
	Sig. (2-tailed)	.000		.000	.000	.000
	N	76	76	76	76	76
E-O: E-ordering	Pearson Correlation	.247[*]	.453[**]	1	.527[**]	.558[**]
	Sig. (2-tailed)	.031	.000		.000	.000
	N	76	76	76	76	76
E-P: E-payment	Pearson Correlation	.490[**]	.473[**]	.527[**]	1	.644[**]
	Sig. (2-tailed)	.000	.000	.000		.000
	N	76	76	76	76	76
PE: Procurement Efficiency	Pearson Correlation	.515[**]	.613[**]	.558[**]	.644[**]	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	76	76	76	76	76

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Multiple regression analysis

Multiple regression analysis was computed to assess the multivariate influence of the study's independent variables (E-sourcing, E –supplier selection, E-ordering, and E-payment) on the dependent variable (procurement efficiency). This was after the compulsory assumptions of multiple regression analyses were checked and met. The multiple regression results were shown in table 6.

Page: - 681 -

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

Table 6: Multiple regression results

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.767[a]	.589	.566	.469776	.589	25.432	4	71	.000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.450	4	5.613	25.432	.000[b]
	Residual	15.669	71	.221		
	Total	38.119	75			

a. Predictors: (Constant), E-payment, E-ordering, E –supplier selection, E-sourcing

b. Dependent Variable: Procurement efficiency

Multiple regression analysis in table 6 showed the multiple regression results of the combined influence of the study's independent variables (E-sourcing, E –supplier selection, and E-ordering and E-payment). The model's R squared (R^2) is 0.589 which shows that the study explains 58.9% of variation in procurement efficiency in the county government of Busia, while other factors not in the conceptualized study model accounts for 41.1%, hence, it is a good study model.

Furthermore, (ANOVA) showed the mean squares and F statistics significant (F=25.432; significant at $p<.001$), thus confirming the fitness of the model and also implies that the study's independent variables (E-sourcing, E –supplier selection, E-ordering, E-payment) have significant variations in their contributions to procurement efficiency in the county government of Busia.

Finally, the values of unstandardized regression coefficients with standard errors in parenthesis indicated that all the study's independent variables (E-sourcing;β = 0.203 (0.100) at $p<0.05$, E –supplier selection; β = 0.345 (0.1113) at $p<0.01$;E-ordering; β = 0.204 (0.085) at $p<0.01$, E-payment; β = 0.355 (0.120) at $p<0.01$ significantly influenced procurement efficiency in the county government of Busia (dependent variable). In this regard, the study's final multiple regression equation is;

Y =-0.527 +0.203X₁+0.345X₂+ 0.204X₃ + 0.355X₄

Where;

y= procurement efficiency in the county government of Busia.

X_1= E-sourcing

X_2= E –supplier selection

X_3= E-ordering

X_4= E-payment

Table 7: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.527	.401		-1.314	.193
E-sourcing	.203	.100	.185	2.029	.046
1 E –supplier selection	.345	.113	.287	3.051	.003
E-ordering	.204	.085	.225	2.411	.018
E-payment	.355	.120	.298	2.954	.004

a. Dependent Variable: procurement efficiency

Page: - 682 -

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

Hypothesis testing

First, **study hypothesis one (H$_{01}$)** stated that sourcing does not significantly influence procurement efficiency in County Government of Busia. Multiple regression results indicated that E-sourcing has significant influence on procurement efficiency in the county government of Busia (β = 0.203 at *p<0.05*). **Hypothesis one was therefore rejected**. The results indicated that a single improvement in E-sourcing will lead to 0.203 unit improvement in procurement efficiency in the county government of Busia.

The results were supported by the work of Faheem and Siddiqui (2019) who found out that electronic sourcing shoed significant impact on supply chain performance. E-sourcing has been presented as requisition of purchase and approval of requisition. This sourcing and automatic requisition approval system greatly influences the efficiency of supply chain management.

Secondly, **study hypothesis two (H$_{02}$)** stated that E-supplier does not significantly influence procurement efficiency in County Government of Busia, Kenya. Multiple regression results indicated that E –supplier selection practice has significant influence on procurement efficiency in the county government of Busia (β = 0.345at *p<0.01*). **Hypothesis two was therefore rejected**. The results indicated that a single improvement in E –supplier selection practice will lead to 0.345 unit improvement in procurement efficiency in the county government of Busia. These findings compared favourably with Kiprotich and Okello (2015) who established the e-supplier selection has significant effect on Procurement Performance of Public Universities in Kenya.

Thirdly, **study hypothesis three (H$_{03}$)** stated that E-ordering does not significantly influence procurement efficiency in County Government of Busia. Multiple regression results indicated that E-ordering has significant influence on procurement efficiency in the county government of Busia (β =

0.204at *p<0.05*). **Hypothesis three was therefore rejected**. The results indicated that a single improvement in E-ordering will lead to 0.204 unit improvement in procurement efficiency in the county government of Busia. The results were supported by Yen and Ng (2013) who found that e-ordering has significant impact on procurement process on the supply chain by analyzing the project of Hong Kong Textile.

Fourthly, **study hypothesis four (H$_{04}$)** stated that E-payment does not significantly influence procurement efficiency in County Government of Busia, Kenya. Multiple regression results indicated that E-payment has significant influence on procurement efficiency in the county government of Busia (β = 0.355at *p<0.01*). **Hypothesis four was therefore rejected**. The results indicated that a single improvement in E-payment will lead to 0.355 unit improvement in procurement efficiency in the county government of Busia.

The results were supported Koiko (2017) indicated that e-payments have a positive relationship with procurement performance. It was revealed that e-payment has been adopted to a moderate extent among public universities in Kenya.

CONCLUSIONS AND RECOMMENDATIONS

In regard to E-sourcing, the study concluded that there is significant positive influence of E-sourcing on procurement efficiency in county government of Busia. The county government of Busia was found to undertake competitive bidding on the e-sourcing platform. The county also has online requisitions/purchasing in the e-procurement system. This has resulted to better service delivery in the county.

The study concluded that E–supplier selection has significant positive influence on procurement efficiency in county government of Busia. To achieve this, the county government of Busia have used e-platforms to search for suppliers and to collaborate with suppliers on product design issues.

This has increase procurement efficiency in the county government of Busia.

The study also concluded that E-ordering has significant positive influence on procurement efficiency in county government of Busia. Specifically, there is placing of procured items online. This has enhanced performance of the procurement function in the county government of Busia.

Lastly, the study concluded that E-payment has significant positive influence on procurement efficiency in County government of Busia. Payment to suppliers is done electronically. In this regard, e-payment has improved visibility into payments and overall spending, translating into better cash flow forecasting and risk management abilities hence procurement efficiency in the county government of Busia.

The study recommended that there is a need for the county government to adopt the least practiced e-sourcing practices such as e-RFX and e-contracting to a great extent in order to reduce the transaction costs and speed up the procurement process. The study also recommended that for county governments in Kenya to enhance e-sourcing, they should have online request for quotation reducing lead time. This would reduce cost and improve efficiency in procurement process in the county governments.

The study recommended that there is a need for County governments in Kenya to adopt the least practiced e-ordering practices such as e-requisition and e-receipting in order to reduce the transaction costs and speed up the procurement process. The study also recommended that there is need for county government to implement the use of e-ordering in procurement so as to reduce on paper work and also save on cost. This would provide an avenue for improved customer service and increased productivity hence the procurement efficiency.

The study recommended that County governments in Kenya should use e-supplier selection where supplier responds once when bidding. Further, online platform should have a pool of qualified supplier for real time requests which improve procurement efficiency.

The study recommended that there is need to adopt those e-payments practices to a great extent and see their effect on procurement efficiency so as to enhance flexibility in payment options.

Areas for further research
The study focused on the influence of e-procurement practices on procurement efficiency a case of Busia County. Some factors such as e-tendering and inventory management system were not considered. Therefore, further studies should consider other factors not captured in this study.

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Page: - 684 -

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