CRITICAL SUCCESS FACTORS IN THE IMPLEMENTATION OF E-PROCUREMENT IN THE PUBLIC SECTOR: A CASE OF RURAL ELECTRIFICATION AUTHORITY (REA)

Chigadi, E. K. A., & Gekara, M.

CRITICAL SUCCESS FACTORS IN THE IMPLEMENTATION OF E-PROCUREMENT IN THE PUBLIC SECTOR: A CASE OF RURAL ELECTRIFICATION AUTHORITY (REA)

Chigadi, E. K. A.,[*1] & Gekara, M.[2]

[*1] EMBA. Candidate, Jomo Kenyatta University of Agriculture & Technology [JKUAT], Nairobi, Kenya
[2] Ph.D, Lecturer, Jomo Kenyatta University of Agriculture & Technology [JKUAT], Nairobi, Kenya

ABSTRACT

E-procurement is the technology-enabled acquisition of goods and services required by an organization at the best value obtainable. The goal is the right product or service, at the right place, at the right time, at the right price in the most efficient manner possible. This study was aimed at identifying the Critical Success Factors, CSFs, in E-procurement in the public sector which had helped to improve the performance of procurement department at Rural Electrification Authority, R.E.A. The research design chosen for this study was a case study. The target population was all the employees at REA. The sample size was about five employees from each department and about 60% of employees in the procurement department as it was the main beneficiary of the study. The sample size was selected using random sampling technique. The instrument used for data collection was a semi-structured questionnaire, which consisted of two parts: Part A contained general information about the respondents, while part B gathered information needed to answer the research questions. The data was analyzed using descriptive statistics. The findings were presented in form of tables and graphs accompanied by detailed discussions. From the findings the researcher established that Stakeholder Participation, Government Policy, Monitoring and Evaluation as well as Capacity Building all had significant influence on the implementation of E-procurement in the public sector, as the correlation analysis revealed with all having a p-value (Sig. = .000) below the threshold of .05.

Key Words: Stakeholder Participation, Government Policy, Monitoring and Evaluation, Capacity Building, E-procurement

INTRODUCTION

E-procurement is an element of e-commerce which began around 1965 in America when consumers were able to withdraw money from Automatic Teller Machine (ATM) and make purchases with a credit card where vender electronically verified payment and big corporate managed procurement and controlled inventory (USCIB, 1998). Since 1995 the development has been overwhelming. It is estimated to be growing at a rate of 10% per month reaching 40 million people in 160 countries around the globe (Sawel, 1999).

E-procurement is the technology-enabled acquisition of goods and services required by an organization at the best value obtainable. The goal is the right product or service, at the right place, at the right time, at the right price in the most efficient manner possible. The e-commerce relates to commercial transaction of goods and services conducted electronically between parties mainly through the open international networks system. That is, parties interact electronically rather than by physical exchange or physical contact (Beda & Kajiba, 2000).

Confusion exists in defining the term e-Procurement (Vaidya *et al.*, 2003). While the terms "e-Procurement" and "e-Purchasing" have been used synonymously in many jurisdictions in an attempt to prove their involvement in the e-Commerce revolution (MacManus, 2002), the term "purchasing" has a narrower scope. e-Procurement refers to the use of Internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Croom & Brandon-Jones, 2004). 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 (Thai, 2009) and e-Procurement implementations generally involve a mixture of different models (Vaidya, Sajeev & Callender, 2006).

Mlinga (2007) defines procurement as the activity of assessing, buying of works, goods and service. Procurement includes some activities that start with the identification of need and ends with the delivery of the material, works or service required in public wherever this process is performed by any one public organization or wherever it is performed on their behalf or funded by public organization.

The REA was established in 2006 under section 66 of the energy ACT as a body corporate. It was created in order to accelerate the pace of rural electrification in Kenya. The vision of the Authority is to be the provider of quality and affordable electricity to all rural areas. Its mission is to efficiently provide high quality and affordable electricity connectivity in rural areas and to achieve high standards of customer service through advancing community participation to ensue long term sustainability and social economic development. The authority's motto is to light up rural Kenya. The authority has been instrumental in ensuring remote places access electricity. Over 80% of primary schools in Kenya have access to electricity highlighting the achievements of REA (REA Strategic Plan).

Problem statement

The government of Kenya in collaboration with the World Bank commissioned a study to assess the country's procurement processes and systems (Government of Kenya, 2001) through the procurement and capacity project. The study identified the need for a comprehensive review and an implementation of a reform process in the

Page: - 728 -

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

procurement system. The study recommended E-procurement system to save resources otherwise lost. It was noted that improvement in the procurement system had a direct impact on the overall economic conditions. The study outlined the need for E-procurement systems but fell short of providing the factors that will be critical in the implementation of these systems.

Maleba (2010) carried out a study on E-procurement model for the public sector. The study established the following factors as being responsible for the slow adoption of E-procurement in Kenya. They include: poor infrastructure, lack of technical standards, limited legislation, lack of awareness and top management support, lack of cooperation on part of suppliers and the associated costs of the system. The study focused on adoption of E-procurement in the general public sector hence a need to study the impact of these systems on a particular segment of the public.

Mose *et al*. (2013) did a study on the critical success factors and challenges in E-procurement adoption among large scale manufacturing firms in Nairobi. He also analyzed the critical success factors that influence the success of E-procurement in those firms. He identified the factors as; reliability of IT and supplier performance, employee and manage commitment, use acceptance, top management support and performance of E-procurement system. Just like most of the other past studies, the study centered on the adoption of the system. This study deviates from the trend and instead centers on the implementation part.

Past studies have clearly outlined the factors that influence adoption of E-procurement systems. However they have done less as far as E-procurement implementation is concerned. It was therefore felt that there exists a knowledge gap in determining factors critical in the implementation of E-procurement system in Kenya. This study sought to close the gap by determining these factors and specifically at REA.

Research objectives

The main objective of the study was to establish the critical success factors in the implementation of E-procurement in the public sector. The specific objectives were:-

- To determine how Stakeholder Participation affects E-procurement Implementation in Public Sector
- To examine how Government Policy Framework influences E-procurement Implementation in the Public Sector
- To establish the effect that Monitoring and Evaluation has on E-procurement implementation in the Public Sector
- To find out the influence of Capacity Building on the implementation of E-Procurement in the Public Sector

LITERATURE REVIEW

Theoretical Literature

Value Creation Theory

Amit and Zott (2001) identify four interrelated value drivers of e-business*: novelty, lockin, complementarities,* and *efficiency*. It is observed that value creation in e-business goes beyond the value that can be realized through the configuration of the value chain, the formation of strategic networks among firms, or the exploitation of firm-specific core competencies. A business model is proposed as a unifying unit of analysis that captures the value creation arising from multiple sources. It states that no single entrepreneurship or strategic management theory can fully explain the value creation potential of e-business; however each of the theories offers an important insight into one aspect of value creation in e-business, therefore the unification of the important aspects of each one of them.

Page: - 729 -

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

Value creation opportunities in virtual markets may result from new combinations of information, physical products and services, innovative configurations of transactions, and reconfiguration and integration of resources, capabilities, roles and relationships among suppliers, partners and customers. Virtual markets broaden the notion of innovation since they influence firm and industry boundaries, involve new exchange mechanisms and unique transaction methods (rather than merely new products, or production processes), and bring new forms of collaborations among firms (Mishra & Zachary, 2014).

Resource Based View

The resource-based view of the firm, views the firm as a bundle of resources and capabilities (Kraaijenbrink, Spender & Groen, 2010). It states that uniquely combining a set of complementary and specialized resources and capabilities may lead to value creation. According to Bridoux (2004), a firm's resources and capabilities are valuable if they reduce the firm's costs or increase its revenues compared to what would have been the case if the firm did not possess those resources. Examples of such value-creation processes are product development, strategic decision-making, alliance formation, knowledge creation, and capabilities transfer. The virtual markets clearly opens up new sources of value creation since relational capabilities and new complementarities among a firm's resources and capabilities can be exploited (between online and offline capabilities). The prospect of value preservation or sustainability is an important incentive for value creation (Freiling & Baron, 2017).
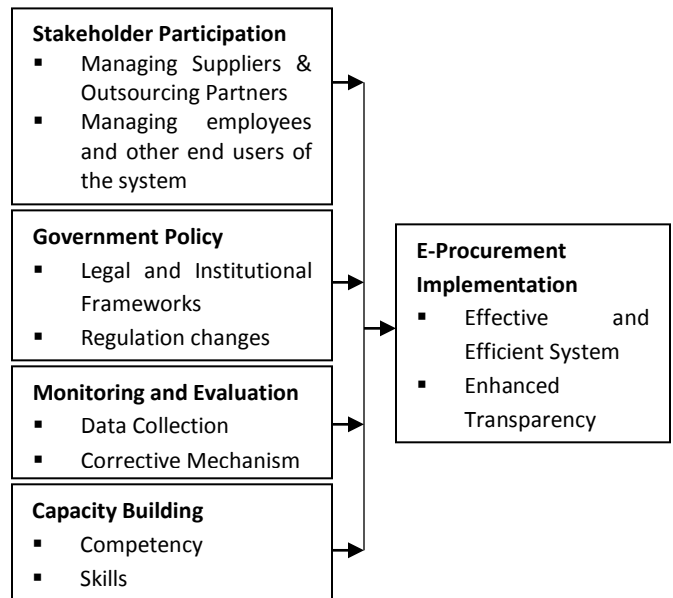
Independent Variables   Dependent Variables

Figure 1: Conceptual Framework

Empirical Review

Stakeholder Participation

Stakeholders for e-procurement can include any person or functional area that "touches" the systems, tools or information being held. This may include people at all levels of the organisation and external contacts such as suppliers and outsourcing partners. An agency can have multiple procurement processes. It may be necessary to look across the entire agency for the appropriate stakeholders and to understand the different business rules as they apply to e-procurement. With so many people and areas affected by e-procurement it is necessary to identify at what level each stakeholder can or should be involved. It may also be helpful to limit involvement to one representative from each functional area (Gunasekaran & Ngai, 2008).

According to Vaidya, Sajeev and Callender (2006), when managing suppliers, it is important to demonstrate the benefits of e-procurement as their engagement is critical to success. Communicate what e-procurement can and cannot do followed up with regular progress reporting and quantifiable metrics.

Page: - 730 -

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

These messages, form part of a strong Communications Plan and will help to keep key stakeholders informed and manage their expectations. Getting stakeholders to participate can be difficult, especially if they do not understand the value of the implementation to themselves and their functional area. A successful model includes a cross–functional team with members from each functional area. The team can support testing, development and training activities along with acting as product champions (Angeles & Nath, 2007).

Government Policy

In 1986, a study was conducted by SGS Consultants to evaluate the public procurement system in Kenya. The key finding of the study was that Kenya's public procurement system was extremely inefficient leading to loss of large sums of money and resources. Another study commissioned by the Kenya government and the World Bank in 1997 reached the same conclusion as the SGS study. Both studies called for a comprehensive review of the public procurement system in Kenya. The World Bank study confirmed what had always been known about the lack of governance in the procurement system but specifically called for reform in terms of fairness and creation of a level playing field in the system, transparency, training of staff, and professionalization of the system, and better management of information (Bilali, 2015; Lewa, & Lewa, 2010).

The World Bank, the African Development Bank (ADB) and ITC, in conjunction with the Government of Kenya, initiated the public procurement reform process in the late 1990s. This reform process was meant to create a system that allowed, among other things, a proper delegation of authority, incentives, procurement thresholds, planning, and the development of supplies manuals. The reform process focused on addressing the issue of procurement laws, establishing appropriate procurement institutions and entities, as well as creating adequate and timely evaluation and

monitoring mechanisms. The reforms would also increase transparency in procurement systems and create reputable agencies. The public procurement reforms also aimed at ensuring that the procurement laws were streamlined to conform to international procurement laws and standards.

Monitoring and Evaluation

Vaidyanathan and Devaraj (2008) noted that controlling the performance of the procurement function and ensuring its efficiency and effectiveness is essential to the management of the procurement process. It is vital to evaluate how well the procurement process has gone, identify any weaknesses or problems and agree actions to prevent similar problems in the future. Evaluation may include a formal procurement audit. Procurement monitoring is an essential part of procurement management and control linked to compliance and performance outcomes such as value for money, professionalism and code of conduct in procurement. Governments may also use the data emanating from the performance assessment for the purpose of monitoring and evaluating public procurement operations and with a view to drawing conclusions on the impacts of the legal and institutional frameworks. The results of a performance assessment system at the contracting authority level may provide valuable input into national aggregate achievements, such as budget savings and general quality improvements in the delivery of public services (Asare, 2009).

An e-procurement scorecard can be used to track and report the performance of the e-procurement implementation. All scorecards should be clear on what is being measured and why; link KPIs to the major benefits expected from e-procurement; be simple and tightly defined; and measured easily. Fields on the scorecard may include: e-procurement transactions to date, savings recorded to date, costs to date, suppliers adopted to date, number of end users, improvement in payment terms with key suppliers, improvement in accounting processes over

time, and e-tool usage (for electronic auctions and tenders). A supplier scorecard may also be used to reflect the performance of an organization's key suppliers. Fields may include: financial spending details with each supplier, e-transactions to date, supplier performance (quality of goods, service, logistics ability, etc.), and payment terms (Vaidya *et al.*, 2004).

Capacity Building

Capacity building and training entails equipping the relevant personnel with the required skills to operate the system. This involves enabling the employees have sufficient knowledge to not only be able to use the system but to also to maximize the output and efficiency of the information systems (Mutui, 2014). The system is very different from the manual methods of information systems thus capacity building is a very crucial aspect in effective implementation of the e-procurement. Skilled employees have been evidenced to adapt to the change in information systems faster as compared to the less skilled ones. The human resource describes the skill power of the implementation of the e-procurement system personnel. It entails how staff are knowledgeable about e-procurement system; how it's operated, shortcomings that may arise and how to fully maximize the output of the system. The human resource comprises of the entire organizational staff from the management to the employees. For effective integration of e-procurement systems, the staff ought to be skilled in IT and how the systems operations are conducted. This may be enhanced through hiring and training of the relevant personnel (Hendriks, 2012).

The capacity building process should be scoped during the early implementation stages covering the recruiting needs, the training criteria and the targeted key audience (Balogun, 2003). The training also ought to target both the junior and senior employees so as to level the effectiveness of the strategies. As supported by Mutui (2014) capacity building and

training will highly enhance the effectiveness of e-procurement system especially in the developing world where not everyone is conversant with IT.

E-procurement implementation

Traditionally, procurement has involved a number of communication mediums to facilitate procurement process between the various parties. These have included the use of mail, phone and fax, EDI and more recently, email and the internet. Basically, E-procurement means that electronic communications are used to support all the transactions that facilitate the procurement process (NECCC, 2002). E-procurement is a new phenomenon, but what it wants to achieve is not new. As long as companies have been around, they have sought to improve efficiency and effectiveness. E-procurement is an umbrella concept that backs up the same tree, improving efficiency and effectiveness. A typical E-procurement workflow involves: requisition, order submission, order tracking, receipt processing, payment processing and ERP update (McKie, 2001). An additional theory is put forward by Knudsen (2003), which defines E-procurement applications as: E-sourcing; finding potential new suppliers using the internet in general or a business-to-business marketplace for information gathering, E-tendering; process of sending request for information (RFI), request for price (RFP), etc to suppliers and receiving the responses using internet technology and takes place in the supplier contact step of the procurement process, E-informing; handling information about the supplier regarding quality certification, financial status or other unique capabilities and E-reverse auctions; buying goods and services that have the lowest price or combination of lowest price and other conditions via internet technology.

According to Neef (2001), E-procurement systems continue the trend of reducing transaction costs by automating processes, replacing human labor with information technology. In addition E-procurement not only helps to reduce costs, but also helps to

facilitate increased integration. There are some fundamental issues the procurement company wants to achieve when it comes to procurement. These include reducing the time employees spend looking for a product, service or suitable supplier, reducing the time and cost of administering purchases, reducing cycle times, increasing volume with a few preferred suppliers to get better pricing and other conditions, as well as limiting choices to only a number of pre-qualified suppliers to ensure quality (Marcin, 2002). The effective implementation of E-procurement is dependent of the following factors:- (1)Availability of financial resources; (2) human resource capacity; (3) support from all stakeholders; (4) availability of supporting infrastructure and facilities such as computers, connectivity and servers; and (5) technology adoption.

METHODOLOGY

According to Kothari (2004), research design is the arrangement of the conditions for collection and analysis of data in a manner that aims to combine relevance of the research purpose with the economy in procedure. In order to achieve the general and specific objectives of the research assignment, the researcher adopted descriptive research design. The target population was all the employees at the Rural Electrification Authority Headquarters. This study adopted stratified sampling because the population

of interest was heterogeneous in nature. This study used 30% of the target population as advised by Mugenda & Mugenda (2003). Therefore, the researcher calculated 30% from each department at REA, which came to approximately 70 respondents. Statistical Package for Social Sciences (SPSS) was used to aid in the analysis.

FINDINGS

Stakeholder Participation

The study generated a descriptive statistics table for stakeholder participation. The results were submitted in Table 1. From the table, 42.9% agreed that with so many people and areas affected by e-procurement our organization identifies at what level each stakeholder can or should be involved, 36.5% agreed that their organization limits stakeholder involvement to one representative from each functional area, 38.1% agreed that employees and other end users preferred a fast and easy procurement process, 39.7% agreed that the roles and responsibilities of employees and other end users often changed as a result of e–procurement, while 47.6% agreed that changes in roles and responsibilities of employees and other end users were identified and communicated in a way that allowed them to absorb the information and incorporate it into their work processes.

Table 1: Descriptive Statistics for Stakeholder Participation

Questions/Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
With so many people and areas affected by e-procurement our organization identifies at what level each stakeholder can or should be involved	0.0%	3.2%	25.4%	42.9%	28.6%
Our organization limits stakeholder involvement to one representative from each functional area	1.6%	4.8%	22.2%	36.5%	34.9%
Employees and other end users prefer a fast and easy procurement process.	3.2%	4.8%	28.6%	38.1%	25.4%
The roles and responsibilities of employees and other end users often change as a result of e–procurement	4.8%	4.8%	31.7%	39.7%	19.0%
Changes in roles and responsibilities of employees and other end users are identified and communicated	1.6%	4.8%	23.8%	47.6%	22.2%

in a way that allows them to absorb the information and incorporate it into their work processes

From the findings in this study it was clear that stakeholder participation is key to a successful implementation of e-procurement in any organization and particularly in the public sector. This finding was in line with those of Vaidya, Sajeev and Callender (2006) who pointed out that, as the management of e-Procurement projects includes the involvement of a significant number of internal and external stakeholders (i.e., buyers, end-users, suppliers, service providers, consultants, an individual seller, and sponsors), the importance of stakeholder involvement cannot be under-estimated. Also, Croom and Brandon-Jones (2007) adds that in the project board protocol, inclusion of major functions such as finance, audit and HR ensure that key stakeholders of elements of the procurement process are 'on-side' and participate in process improvements.

Government Policy

The study sought to find the descriptive of Government Policy. From the findings summarized in Table 2, 47.6% said to a high extent the Kenyan government in general understands the role played by e-procurement implementation and was keen in ensuring smooth and successful of its implementation

in general, 42.9% said that to a high extent the government ensured the necessary legal and institutional frameworks were installed for a successful e-procurement implementation, 46.0% said to a high extent the PPOA understands their mandate and was fully responsible for sound policies that facilitate the smooth e-procurement implementation in Kenya, 30.2% said that to a high extent the necessary regulation changes had been put in place to ensure smooth implementation of e-procurement, 54.0% said to a high extent the PPOA played its role effectively and efficiently providing a level playing ground for all stakeholders, 46.0% said to a high extent the Kenyan government was committed to putting in place modern infrastructure that would support the full e-procurement implementation, and 31.7% said to a high extent the Kenyan government in general appreciated the benefits that came with a successful implementation of e-procurement in the public sector and was putting in place robust policies that would efficiently and effectively govern exploitation of its key resources upon successful implementation.

Table 2: Descriptive Statistics for Government Policy

Questions/Statements	Very low Extent	Low Extent	Average Extent	High Extent	Very High Extent
The Kenyan government in general understands the role played by e-procurement implementation and is keen in ensuring smooth and successful of its implementation in general	1.6%	6.3%	15.9%	47.6%	28.6%
The government ensures the necessary legal and institutional frameworks are installed for a successful e-procurement implementation	3.2%	6.3%	27.0%	42.9%	20.6%
The PPOA understands their mandate and is fully responsible for sound policies that facilitate the smooth e-procurement implementation in Kenya	1.6%	6.3%	11.1%	46.0%	34.9%
The necessary regulation changes have been put in place to ensure smooth implementation of e-procurement	4.8%	12.7%	25.4%	30.2%	27.0%

The PPOA plays its role effectively and efficiently providing a level playing ground for all stakeholders	0.0%	1.6%	15.9%	54.0%	28.6%
The Kenyan government is committed to putting in place modern infrastructure that will support the full e-procurement implementation	3.2%	1.6%	17.5%	46.0%	31.7%
The Kenyan government in general appreciates the benefits that come with a successful implementation of e-procurement in the public sector and is putting in place robust policies that will efficiently and effectively govern exploitation of its key resources upon successful implementation	6.3%	14.3%	23.8%	31.7%	23.8%

The findings indicated that the government of Kenya had the necessary policies in place for a successful implementation of e-procurement. This was especially as a majority of the respondents said to a high extent the necessary regulation changes had been put in place to ensure smooth implementation of e-procurement. In a similar, study Machoka, Were and Letting (2015) found that government policies significantly affected the performance of e-payments in parastatals. Kumaga (2010) argued that national, regional or international set of laws, rules and other regulations are important requirements for the successful implementation of e-payment schemes. Similarly, Alshehri and Drew (2010) identified lack of policy and regulation for e-usage as one of the major challenges of implementing e-payment systems in Saudia Arabia.

Monitoring and Evaluation
The researcher generated descriptive statistics using SPSS software and presented the findings in Table 3.

From the table 34.9% remained neutral on there was an identified institution in charge of the development/management/monitoring of the e-procurement system, 73.0% either agreed or strongly agreed that the organization ensured that the collected information was published in a timely manner and accessible to vendors and other stakeholders (while protecting sensitive data), 36.5% agreed that they monitored the contribution of e-procurement systems to transparency, access to public tenders, competition, simplification of processes, efficiency and integration between public procurement and public finance systems, 44.4% agreed that the use of e-procurement systems and its functionalities were constantly monitored, 41.3% agreed that e-procurement systems allowed for efficient data collection, consolidation, extraction and transfer, while 38.1% agreed that the organization measures the efficiencies/savings generated by the use of e-procurement systems.

Table 3: Descriptive Statistics for Monitoring and Evaluation

Questions/Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is an identified institution in charge of the development/management/monitoring of the e-procurement system	0.0%	9.5%	34.9%	23.8%	31.7%
We ensure that the collected information is published in a timely manner and accessible to vendors and other stakeholders (while protecting sensitive data)	0.0%	4.8%	22.2%	36.5%	36.5%
We monitor the contribution of e-procurement systems to transparency, access to public tenders, competition,	0.0%	7.9%	25.4%	36.5%	30.2%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
simplification of processes, efficiency and integration between public procurement and public finance systems					
The use of e-procurement systems and its functionalities are constantly monitored	1.6%	4.8%	25.4%	44.4%	23.8%
E-procurement systems allow for efficient data collection, consolidation, extraction and transfer	3.2%	3.2%	33.3%	41.3%	19.0%
Our organization measures the efficiencies/savings generated by the use of e-procurement systems	1.6%	4.8%	31.7%	38.1%	23.8%

The findings showed that monitoring and evaluation was an important part to a successful implementation of e-procurement in the public sector as it informs the implementers of milestones covered as well as identification of the weakness that can be strengthened. This findings were in line with the arguments of Acevedo *et al.* (2010) that effective policy making requires information on whether governments were doing things right and whether they achieved the results intended. Strong monitoring and evaluation (M&E) systems provided the means to compile and integrate this valuable information into the policy cycle, thus providing the basis for sound governance and accountable public policies. PPOA report (2007) added that e-procurement systems contribute to the assessment of the results of the procurement process by collecting consistent, up-to-date and reliable information and use data on prior procurements.

Capacity Building

The research sought to find descriptive statistics for Capacity Building. The results were summarized in Table 4. From the findings, 33.3% agreed that the organization had the capacity and technical knowhow requisite for a successful implementation of e-procurement, 42.9% agreed that the staff were not only knowledgeable of the systems but also have adequate experience, 44.4% agreed that they had competent personnel to execute the implementation of public e-procurement, 30.2% agreed that the organization has sufficient measures in place for capacity building and training so as to enhance proficiency of the staff in e-procurement operations, 52.4% agreed that the organization undertakes employee training to increase the rate of e-procurement implementation, while 61.9% agreed that people know the basic level of knowledge needed to perform their duties.

Table 4: Descriptive Statistics for Capacity Building

Questions/Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
We have the capacity and technical knowhow requisite for a successful implementation of e-procurement	11.1%	14.3%	25.4%	33.3%	15.9%
Our staff are not only knowledgeable of the systems but also have adequate experience	3.2%	6.3%	31.7%	42.9%	15.9%
We have competent personnel to execute the implementation of public e-procurement	0.0%	3.2%	17.5%	44.4%	34.9%
We have sufficient measures in place for capacity building and training so as to	11.1%	14.3%	27.0%	30.2%	17.5%

enhance proficiency of the staff in e-procurement operations					
The organization undertakes employee training to increase the rate of e-procurement implementation	0.0%	3.2%	27.0%	52.4%	17.5%
People know the basic level of knowledge needed to perform their duties	0.0%	3.2%	19.0%	61.9%	15.9%

The study found that capacity building was very important for a successful implementation of e-procurement. This was especially because with necessary resources such as human power and the necessary training to run the e-procurement operations, then the implementation was bound for failure. In a similar study, Machoka, Were and Letting (2015) sought to find the effects of government policies on e-payment. Their study showed that enhancing staff capabilities through training and attitudinal changes can be used as strategy for enhancing adoption of electronic payment systems. The authors recommended that since electronic payments are emerging and constantly evolving, the parastatals in Kenya needs to continuously review their staff training practices, promotional activities, technologies and strategies on e-payments as this would lead to efficiency of their systems and eliminate the unnecessary documentation that transactions cumbersome.

E-Procurement Implementation

The researcher generated a descriptive table for E-Procurement Implementation using SPSS Software. The respondents were requested to rate various indicators of the level of E-Procurement Implementation in the organization. From the findings summarized in Table 5, 36.5% rated transparency, integrity, ethics honesty, decency, and trustworthiness at very good level, 49.2% rated reduction of errors in order transmission as good, 49.2% rated reductions in inventory as good, 42.9% rated assured supply as good, 42.9% rated

transaction cost reduction as good, 41.3% rated significant reductions in the time taken to complete the procurement process as good, 46.0% rated improved procurement resource utilization as good, 50.8% rated delivery of best-value contracted goods and service as good, while 39.7% of the respondents rated stronger vendor-buyer relationship as good.

The findings revealed that most of the respondents rated various indicators of the level of E-Procurement Implementation as good implying that they were happy with what they had observed of the e-procurement implemented in their organization. This finding was in line with that of Alor *et al.* (2011) who proposes that e-procurement's main objective is to remove costs, inefficiencies or delays so as to enhance sound processes that had been condensed into the following applications; e-informing, e-sourcing, e-MRO, e-tendering, and Enterprise resource planning. Rotich and Okello (2015), argued that the driving force behind the implementation of e-procurement by most organizations has been to enhance transparency where all transactions can be traced, prevent fraud and corruption, as well as providing clear audit trail. Chaffey (2009) additionally, points out value for money principle as the other factor that organizations have considered and which has been realized through enhanced competition as a result of improved accessibility as well as reduced procurement and transaction costs. E-procurement also improves work efficiency through reduced procurement time together with standardization and rationalization of procurement process (Hardy & Williams, 2008).

Table 5: Descriptive Statistics for E-Procurement Implementation

Questions/Statements	Poor	Fair	Average	Good	Very Good
Transparency, integrity, ethics honesty, decency, and trustworthiness	0.0%	1.6%	28.6%	33.3%	36.5%
Reduction of errors in order transmission	0.0%	4.8%	19.0%	49.2%	27.0%
Reductions in inventory	0.0%	1.6%	12.7%	49.2%	36.5%
Assured supply	3.2%	9.5%	27.0%	42.9%	17.5%
Transaction Cost reduction	0.0%	3.2%	17.5%	42.9%	36.5%
Significant reductions in the time taken to complete the procurement process	1.6%	7.9%	22.2%	41.3%	27.0%
Improved procurement resource utilization	0.0%	6.3%	27.0%	46.0%	20.6%
Delivery of best-value contracted goods and service	0.0%	6.3%	27.0%	50.8%	15.9%
Stronger Vendor-Buyer Relationship	3.2%	9.5%	36.5%	39.7%	11.1%

Correlation between the variables

The researcher generated a correlation matrix between the variables. The findings were presented in Table 6. The table showed that all the variables had an above average positive and statistically significant correlation with E-Procurement Implementation.

Table 6: Correlation between the variables

	E-Procurement Implementation	Stakeholder Participation	Government Policy	Monitoring and Evaluation	Capacity Building
E-Procurement Implementation	1	.699**	.663**	.670**	.648**
Stakeholder Participation	.699**	1	.755**	.720**	.726**
Government Policy	.663**	.755**	1	.792**	.757**
Monitoring and Evaluation	.670**	.720**	.792**	1	.745**
Capacity Building	.648**	.726**	.757**	.745**	1
Pearson Correlation Sig. (2-tailed) = .000					
N = 63					

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

CONCLUSIONS AND RECOMMENDATIONS

In the first objective, the researcher sought to determine how Stakeholder Participation affects E-procurement Implementation in Public Sector. From the findings the researcher concluded that stakeholder participation had a significant influence on implementation of e-procurement in the public sector. The findings therefore confirmed those of Vaidya, Sajeev and Callender (2006) who pointed out that, as the management of e-Procurement projects includes the involvement of a significant number of internal and external stakeholders (i.e., buyers, end-users, suppliers, service providers, consultants, an individual seller, and sponsors), the importance of stakeholder involvement cannot be under-estimated. Also, Croom and Brandon-Jones (2007) adds that in the project board protocol, inclusion of major functions such as finance, audit and HR ensure that key stakeholders of elements of the procurement process are 'on-side' and participate in process improvements.

In the second objective, the study sought to examine how Government Policy Framework influences E-

procurement Implementation in the Public Sector. The findings led the researcher to conclude that the government of Kenya had the necessary policies in place for a successful implementation of e-procurement in the public sector. This was especially as a majority of the respondents said to a high extent the necessary regulation changes had been put in place to ensure smooth implementation of e-procurement. In a similar, study Machoka, Were and Letting (2015) found that government policies significantly affect the performance of e-payments in parastatals. Further, Kumaga (2010) argued that national, regional or international set of laws, rules and other regulations are important requirements for the successful implementation of e-payment schemes. Similarly, Alshehri and Drew (2010) identified lack of policy and regulation for e-usage as one of the major challenges of implementing e-payment systems in Saudia Arabia.

In the third objective, the researcher sought to establish the effect that Monitoring and Evaluation has on E-procurement implementation in the Public Sector. From the findings the researcher concluded that monitoring and evaluation was an important component for a successful implementation of e-procurement in the public sector. This was in line with the arguments of Acevedo *et al.* (2010) that effective policy making requires information on whether governments are doing things right and whether they achieve the results intended. Strong monitoring and evaluation (M&E) systems provide the means to compile and integrate this valuable information into the policy cycle, thus providing the basis for sound governance and accountable public policies. PPOA report (2007) added that e-procurement systems contribute to the assessment of the results of the procurement process by collecting consistent, up-to-date and reliable information and use data on prior procurements.

In the fourth objective, the researcher sought to find out the influence of Capacity Building on the implementation of E-Procurement in the Public Sector. The findings led the researcher to conclude that capacity building had a significant influence on the implementation of e-procurement. In a similar study, Machoka, Were and Letting (2015) sought to find the effects of government policies on e-payment. Their study showed that enhancing staff capabilities through training and attitudinal changes can be used as strategy for enhancing adoption of electronic payment systems. The authors recommended that since electronic payments were emerging and constantly evolving, the parastatals in Kenya needs to continuously review their staff training practices, promotional activities, technologies and strategies on e-payments as this would lead to efficiency of their systems and eliminate the unnecessary documentation that transactions cumbersome.

Generally, the main objective of the study was to establish the critical success factors in the implementation of E-procurement in the public sector. The study investigated four critical success factors that included Stakeholder Participation, Government Policy, Monitoring and Evaluation as well as Capacity Building. From the findings therefore, the study concluded that they all had significant influence on the implementation of E-procurement in the public sector.

The study findings revealed that the roles and responsibilities of employees and other end users often change as a result of e-procurement. Therefore, the study recommended that changes in roles and responsibilities of employees and other end users should be identified and communicated in a way that allows them to absorb the information and incorporate it into their work processes. In addition, as the technology keeps updating, the staff need to undergo continuous training and seminars so as to keep up with the latest technology.

Recommendations for future Studies

This study focused on the critical success factors in the implementation of E-procurement in the public sector. A study can be carried out on a specific factor that affects E-procurement in the public sector. Moreover, this study focused only on four critical factors namely; Stakeholder Participation, Government Policy, Monitoring and Evaluation as well as Capacity Building. Therefore, similar studies can be carried on other factors that affect the implementation of E-procurement in the public sector.

REFERENCES

Aberdeen Group (2005). Best Practices in E-procurement. Aberdeen Group, Boston, 11-15.

Acevedo, G. L., Rivera, K., Lima, L., & Hwang, H. (2010, June). Challenges in monitoring and evaluation: an opportunity to institutionalize M&E systems. In *Fifth Conference of The Latin American and The Caribbean Monitoring and Evaluation Network*.

Alala, O. B., & Deya, F. O. (2013). Effectiveness and efficiency of public procurement and disposal Act in shaping competitive purchasing and disposal in the civil service in Kenya. *International Journal of Innovative Research and Development|| ISSN 2278–0211*, *2*(6).

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

Angeles, R., & Nath, R. (2007). Business-to-business e-procurement: success factors and challenges to implementation. *Supply Chain Management: An International Journal*, *12*(2), 104-115.

Asare, T. (2009). Internal auditing in the public sector: Promoting good governance and performance improvement. *International Journal on Governmental Financial Management*, *9*(1), 15-28.

Authority, P. P. O. (2007). Assessment of the procurement system in Kenya. *Nairobi: PPOA*.

Balchin, J (2001). Strategic Enlightenment. Logistics Europe, Issue: September, pp 16-19. LULEA: University of Technology Division of Industrial Marketing & E-commerce, 154.

Bilali, J. (2015). Factors influencing the Adoption of e-Procurement: A case of Garissa County Government. Strategic Journal of Business & Change Management, 2(1).

Bridoux, F. (2004). *A resource-based approach to performance and competition: an overview of the connections between resources and competition* (No. IAG Working Papers (2004/110)). UCL.

Buy IT Best Practice Network Report (2002). Building the Business Case for E-procurement/ ROI, Issued by the BuyIT Best Practice Network.

Callender, G., & Schapper, P. (2003). Public procurement reform in Australia: A federal-state evaluation. *International Research Study of Public Procurement, University of Bath, Bath*, 48-61.

Carayannis, E. G., & Popescu, D. (2005). Profiling a methodology for economic growth and convergence: learning from the EU e-procurement experience for central and eastern European countries. *Technovation*, 25(1), 1-14.

Chan, C., & Swatman, P. M. (1998, June). EDI implementation: a broader perspective. In *Bled'98"-11th International Conference on Electronic Commerce* (pp. 8-10).

Page: - 740 -

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

Cooper, R. B., & Zmud, R. W. (1990). Information technology implementation research: a technological diffusion approach. *Management science*, *36*(2), 123-139.

Corsi, M. and Gumina, A. (2006). How E-government May Enhance Public Procurement. Retrieved from United Nations Procurement Capacity Development Centre website.

Croom, S., & Brandon-Jones, A. (2004). E-procurement: Key issues in inventory control implementation and operation in the public sector.

Croom, S., & Brandon-Jones, A. (2007). Impact of e-procurement: experiences from implementation in the UK public sector. *Journal of Purchasing and Supply Management*, *13*(4), 294-303.

Croom, S.R (2001). "The Impact of Web-Based Procurement on Management of Operating Resources Supply," The Journal of Supply Chain Mnagement (Winter 2000): 4-13.

Croom, S.R (2005). "The Impact of E-business on Supply Chain Management, An empirical study of key developments, International Journal of Operations & Production Management",Vol. 25 No. 1, 55-73.

Dai, Q. and Kauffman, R.J (2002). Busiess Models for Internet-Based B2B Electronic Markets. *International Journal of Electronic Commerce*, 6(4), 41-72.

Dai, Q. and Kauffman, R.J (2005). "To Be or Not to B2B: Evaluating Managerial Choices for E-procurement Channel Adoption",Info. Tech. Mngmt., 155

Dai, Q., & Kauffman, R. J. (2001, January). Business models for Internet-based e-procurement systems and B2B electronic markets: an exploratory assessment. In *System Sciences, 2001. Proceedings of the 34th Annual Hawaii International Conference on* (pp. 10-pp). IEEE.

Day, G.S., Fein, A.J. and Ruppersberger, G. (2003), "Shakeouts in digital markets lessons from B2B exchanges", *California Management Review*, Vol. 45 No. 2, pp. 131-150.

Eakin, D. (2003). Measuring E-procurement Benefits. Government procurement, 16(8), 6-12. *Emergmed* 2003, 20, 54-60.

Freiling, J., & Baron, T. (2017). A Resource-based View of Entrepreneurial Ecosystems. In *Technologie, Strategie und Organisation* (pp. 65-84). Springer Fachmedien Wiesbaden.

Gadde, L.E. and Hakansson, H (2001). Supply Chain Network Strategies, Chichester: John Wiley & Sons.

Ginzberg, M. J. (1980). An organizational contingencies view of accounting and information systems implementation. *Accounting, Organizations and Society*, *5*(4), 369-382.

Giunipero, L. C. and Sawchuk, C (2000). E-procurement Plus: Changing the Way Corporations Buy, Goshen (NY): JGC Enterprises.

Greenberg, S. (2004). *Beyond the Bid: an Evaluation of State and Local Government Procurement Practices; PRP 146*. LBJ School of Public Affairs.

Gunasekaran, A., & Ngai, E. W. (2008). Adoption of e-procurement in Hong Kong: an empirical research. *International Journal of Production Economics*, 113(1), 159-175.

Hardy, C. A., & Williams, S. P. (2008). E-government policy and practice: A theoretical and empirical exploration of public e-procurement. *Government Information Quarterly*, *25*(2), 155-180.

Hendriks, C. J. (2013). Integrated Financial Management Information Systems: guidelines for effective implementation by the public sector of South Africa: original research. *South African Journal of Information Management*, 15(1), 1-9.

Knudsen, D. (2003). Improving Procurement Performance with E-business Mechanisms, Lund University, Lund, Sweden.

Koorn, R., Smith, D., & Müller, C. (2001). e-Procurement and Online Marketplaces. *The Netherlands: Compact*.

Kothari, C.R. (2004). Research methodology: methods and Techniques, 2nd Ed, New Age International Publishers.

Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: a review and assessment of its critiques. *Journal of management*,*36*(1), 349-372.

Lewa, P. M., & Lewa, S. K. (2010). Public Procurement Reform in Emerging Economies: A Case Study of Kenya. *Handbook of Business Practices and Growth in Emerging Markets*, 275.

Machoka, P., Were, S. & Letting, N. (2015). The effects of government policies on e-payment. *International Journal of Current Business and Social Sciences, 1(4)*

MacManus, S. A. (2002). Understanding the incremental nature of e-procurement implementation at the state and local levels. *Journal of Public Procurement*, *2*(1), 5.

Maniatopoulos, J. L. G., & Leukel, J. (2005). A comparative analysis of product classification in public vs. private e-procurement. *Electronic Journal of e-Government*, *3*(4), 201-212.

Mann, C.J. (2008). Observational Research methods: Cohort, cross-sectional, and case studies.

Marcin, B. (2002). C-commerce. Would mixing ERP, CRM, E-procurement and SCM be an efficient strategy for the future? (*Business Solution Management*, 2002)

Marshall, C and Rossman G (2000). Designing qualitative research 3rd Ed.,Thousands Oaks-CA: Sage.

Mbae, L. N. (2014). *Public procurement law and procurement performance of county governments in Kenya: Case of Machakos county government* (Doctoral dissertation, University Of Nairobi).

McKie, Stewart (2001). E-business best practices: leveraging technology for business advantage, Wiley, New York.

Mgidlana, L. M. (2013). Factors affecting the adoption of e-procurement technologies from the supplier perspective.

Mishra, C. S., & Zachary, R. K. (2014). The Entrepreneurial Value Creation Theory. In *The Theory of Entrepreneurship* (pp. 253-292). Palgrave Macmillan US.

Muyoyo, J. L. (2004). Factors influencing the adoption and implementation of e-business technologies in companies quoted at the Nairobi Stocks Exchange. *Unpublished MBA thesis, University of Nairobi*.

NECCC E-procurement Work Group (2002). E-procurement Failure to Implement, Not an Option!

Page: - 742 -

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

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

Neef, D. (2001). E-Procurement: From strategy to implementation. FT press.

Nkonge, M. K., & Ngugi, K. (2014). Constraints of effective implementation of public procurement reforms in Kenya: A case of Nairobi City County'. *European Journal of Business Management*, *2*(1).

Obiero, M. (2008). The challenges in the implementation of the 2005 procurement act in the Kenyan Ministry of Higher Education, Science and Technology (Doctoral dissertation, University of Nairobi,).

Panda, P., Sahu, G. P., & Gupta, P. (2010). Promoting transparency and efficiency in public procurement: E-procurement initiatives by government of India.

Rajkumar, T. M. (2001). E-procurement: business and technical issues. Information Systems Management, 18(4), 52-60.

Rajkumar, T.M (2001). "E-procurement: Business and technical issues", *Information Systems Management*, 18 (4), 52-62.

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.

Saeed, K.A. and Leith, R.A. (2003), "Controlling sourcing risks in electronic marketplaces", Electronic Markets, Vol. 13 No. 2, pp. 163-172.

Smith, A. D. (2009). The impact of e-procurement systems on customer relationship management: a multiple case study. *International Journal of Procurement Management*, 2(3), 314-338.

Srinivasan, R., Lilien, G. L., & Rangaswamy, A. (2002). Technological opportunism and radical technology adoption: An application to e-business. *Journal of Marketing*, *66*(3), 47-60.

Subramaniam, C., & Shaw, M. J. (2004). The effects of process characteristics on the value of B2B e-procurement. *Information Technology and Management*, *5*(1-2), 161-180.

Thai, K. V. (2009). *International handbook of public procurement*. Boca Raton, FL: CRC Press.

Vaidya, K., Callender, G., Sajeev, A. S. M., & Gao, J. (2004, April). Towards a model for measuring the performance of e-procurement initiatives in the Australian public sector: a balanced scorecard approach. In *Australian e-Governance Conference, April* (pp. 14-15).

Vaidya, K., Sajeev, A. S. M., & Callender, G. (2006). Critical factors that influence e-procurement implementation success in the public sector. *Journal of public procurement*, *6*(1/2), 70.

Vaidya, K., Sajeev, A. S. M., & Callender, G. (2006). Critical factors that influence e-procurement implementation success in the public sector. Journal of public procurement, 6(1/2), 70.

Vaidya, K., Sajeev, A. S. M., & Callender, G. (2006). Critical factors that influence e-procurement implementation success in the public sector. *Journal of public procurement*, *6*(1/2), 70.

Vaidya, K., Sajeev, S.M and Callender, G (2006). "Critical Factors that Influence E-procurement Implementation Success in the Public Sector," *Journal of E-procurement* 6(1/2), 70-99

Vaidya, K., Yu, P., Soar, J., & Turner, T. (2003). Measuring the performance of e-procurement implementations in the Australian Public Sector. *Building Society through e-Commerce: e-Government, e-Business and e-Learning*, 47-61.

Vaidyanathan, G., & Devaraj, S. (2008). The role of quality in e-procurement performance: An empirical analysis. *Journal of Operations Management*, 26(3), 407-425.

Weele,A.J (2001). Purchasing and Supply Chain Management: Analysis, Planning and Practice 3rd revised edition, London, England: Thomson International.

Wittig, W. A. (2003). Public procurement and the development agenda. *International Trade Centre, Geneva*.

World Bank (2001). Standard Bidding Documents: Procurement of Works: New York, World Bank, 14-18.

Wyld, D.C (2002). The Electric Company: How the Supply Chain is being Reinvented Through the Rapid Application of E-procurement Processes in the Business-to-Business Arena, Management Research News, Vol. 25, pp. 22-53.

Yen, B.P.C and Ng, E.O.S. (2002), "Migrating procurement onto the internet", Electronic Commerce Research, Vol. 2 pp. 113-134.

Page: - 744 -

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