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**INFLUENCE OF E-PROCUREMENT ON PERFORMANCE OF
PARASTATALS IN KENYA.**

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INFLUENCE OF E-PROCUREMENT ON PERFORMANCE OF PARASTATALS IN KENYA.

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Abstract

Purpose: The main objective of this study was to analyze the influence of e-procurement on performance of parastatals.

Methodology: This research study adopted a descriptive research design approach. The researcher preferred this method because it allows an in-depth study of the subject. For this study census was used, all the 187 heads of procurement in all parastatals were issued with questionnaires. Data was collected using self-administered questionnaires. The data collected was analyzed by use of descriptive and inferential statistics. Multiple regression model was used to show the relationship between the dependent variable and the independent variables. Data generated was be keyed in and analysed by use of Statistical Package of Social Sciences (SPSS) version 21 to generate information which was presented using tables, charts, frequencies and percentages.

Results: The findings of the study indicated that e-sourcing, e-informing, e-payments and e-tendering have a positive relationship with performance in parastatals.

Conclusion: Based on the study findings, the study concludes that performance of parastatals can be improved by e-sourcing, e-informing, e-payment and e-tendering.

Policy recommendation: Finally, the study recommended that public institutions should embrace e-procurement practices so as to improve their performance and further researches should to be carried out in other public institutions to find out if the same results can be obtained.

Keywords: *e-sourcing, e-informing, e-payment, e-tendering*

1.0 INTRODUCTION

1.1 Background of the Study

The process of e-procurement covers every stage of purchasing, from the initial identification of a requirement, through the tendering process, to the payment and potentially the contract management (Porter & Millar, 2005). The purchasing of goods and services in the public sector is central because it supports all functions of government; each governmental unit needs supplies and equipment to accomplish its mission (Oliveira & Martins, 2011). Lysons (2013) opined that one of the most important challenges in government procurement is how to best utilize information technology in an age of communications revolution. Numerous researchers have discussed this challenge under the label e-procurement. The issue has been discussed both from a technological perspective and a managerial perspective (Lavelle & Bardon, 2009).

The development and implementation of electronic commerce business models, such as a procurement portal in organizations is a challenge that goes beyond mere technological functionality (Davila, Gupta & Palmer, 2013) Top management support, organizational adaptation, and training of employees are examples of critical issues for the successful implementation of any IT-system. Although a number of public sector agencies are actively pursuing e-Procurement, evidence from business press reveals that many of the efforts are not meeting original expectations.

1.1.1 Global Perspective on E-Procurement

A study by Teo, Lin, and Lai (2009) on the adoption of e-procurement was conducted in Hong Kong. The main objective of the study was to identify the perceived critical success factors and perceived barriers regarding the implementation of e-procurement. A conceptual framework had been developed for the adoption of e-procurement, and this subsequently had been tested with data collected from companies in Hong Kong. The results indicated that educating companies in both long- and short-term benefits would encourage the application of e-procurement (Thai, 2007).

1.1.2 Regional Perspective on E-Procurement

According to (Saleemi, 2000) introduction of e-procurement system in Tanzania is part of e-government implementation. This new system which involves the use of ICT will among others enable suppliers to sell goods and services to the government through the internet. There is no doubt for government through the Public Procurement Regulatory Authority can facilitate the implementation of electronic procurement which is part of the e-commerce and e-government we cannot avoid carefully considering the current policy and legal environment.

1.1.3 Local Perspective on E-Procurement

The public procurement in the Kenyan has been undergoing reforms starting with the Public Procurement and Disposal Act 2005 that saw the creation of Public Procurement Oversight Authority. The next step was the implementation of e-procurement for the public sector. According to e-government strategy paper 2004, e-procurement was one of the medium term objectives which were to be implemented by June 2007, but the process has been very slow (Maina, 2011). The manual processes are costly, slow, inefficient and data storage and retrieval poor. This project

sought to determine e-procurement practices in public sector, find the factors for slow adoption, existing models in use, and then develop a model for the Kenyan public sector.

1.1.4 E- Procurement

While many firms adopt e-procurement in an attempt to achieve the proposed benefits of lower costs and improved efficiency, it should be noted that the use of e-procurement does not guarantee positive outcomes for buyers or suppliers. Rankin, Chen, and Christian (2006) study of reverse auction use in the wood pallet industry found that suppliers realized few, if any benefits from participation, suppliers engaged in retaliatory pricing when the opportunity presented itself, buyers encountered unanticipated costs, and less-than-optimal buyer-supplier relationships resulted (Bird, 2009). Some additional challenges associated with the effectiveness of e-procurement include information sharing within and across firms, overcoming the silo mentality within the firm, sharing proprietary information with supply chain members, and intellectual property matters.

1.2 Statement of the Problem

According to a World Bank Report (2013) parastatals play a major role in the development of the country through provision of public services and have become a strong entity in Kenya and very useful engines to promoting development. In Kenya parastatals accounted for 20% of the country's Gross Domestic Product (GDP), provided employment opportunities to about 300,000 people in the formal sector and 3.7 million persons in the informal sectors of the economy (GoK, 2004). However, parastatals in Kenya have been experiencing a myriad of problems including corruption, nepotism and mismanagement (Rotich, 2011). The Systems Audit for State Law Office (SLO), 2008/2009 Report revealed losses of Kshs.18,291,430 through irregular procurements in financial year (FY) 2008/2009. Earlier, in FY 2007/2008, SLO had lost Kshs. 8,495,968.00 due to inefficiencies. This raises questions on the level of performance of SLO's procurement system as a parastatal. The situation is one of loss, fraud, theft and gross mismanagement which are hampering improved and sustained procurement performance and service delivery (PPOA, 2009).

According to KPLC Customer satisfaction survey of 2011, 2012 and 2013, carried out by m/s Consumer Options Limited, it is notable that the percentage index has been fluctuating that is, 69%, 70% and 66% respectively (Kirungu, 2002). Kenya power faces a major challenge in controlling the overall operating cost because of the constant increase of sourcing cost; this is evident by Kenya Power posting a decrease in profit prior to tax of Sh6.42 billion compared to Sh8.5 billion noted in the previous year according to a KPLC 2013 annual report. Productivity of parastatals is quite low while at the same time they continue to absorb excessive portion of the budget, becoming a principal cause of long term procurement problems (KIPPRA, 2010). In fact the public investment committee reports that out of 187 reports examined by the Auditor General, only 23 Corporations managed a clean bill of health (CCG, 2007). Parastatals operations have become inefficient and non-profitable, partly due to multiplicity of objectives, stifled private sector initiatives and failing of joint ventures requiring the government to shoulder major procurement burdens (Bilali & Bwisa, 2015). According to Amayi (2011) 69% of parastatals rely on old records in selecting their suppliers, while only 31% search through internet catalogue in selecting suppliers (Arrowsmith & Trybus, 2008), the reason for loss, fraud, theft and gross mismanagement.

However, in Singapore, previous research by Thomson and Jackson (2007) on the survey of the role of e-procurement usage strategy shows that global parastatals' use of the internet is high, while in Kenya, previous research by Githumbi (2013) on usage, obstacles and policies on e-procurement show that only 33% of parastatals have implemented e-procurement as a strategy to improving services. None of the existing research explores further how e-procurement use affects the performance of parastatals. It is against that backdrop that this study will be done to determine the effect of e-procurement on performance of parastatals in Kenya.

1.3 Objectives of the Study

1. To assess the influence of e-sourcing on performance of parastatals in Kenya.
2. To establish the influence of e-informing on performance of parastatals in Kenya.
3. To determine the influence of e-payment on performance of parastatals in Kenya.
4. To evaluate the influence of e-tendering on performance of parastatals in Kenya.

2.0 LITERATURE REVIEW

2.1.1 E-Sourcing

According to Mose (2012), private and public sector organizations have been utilizing information technology (IT) systems to streamline and automate their purchasing and other processes over the past years. E-sourcing is not new; Thai (2007) there have been many attempts to automate the process of procurement for the buyer using electronic procurement systems (EPS), workflow systems and links with suppliers through electronic data interchange (EDI). E-sourcing refers to the electronic integration and management of all procurement activities including purchase, request, authorization, ordering, delivery and payment between a purchaser and a supplier (Lysons, 2013).

2.1.2 2E-Informing

E-informing is the gathering and distributing purchasing information both from and to internal and external parties using Internet technology (Rotich, 2011). It is using internet technology to buy goods and services from a number of known or unknown suppliers. Purchasing accounts for the majority of organizational spending. As such, the advent of web based electronic procurement has been heralded as a 'revolution' because of its potential to reduce the total cost of acquisition. The e-procurement revolution is expected to enhance the status and influence of the purchasing function within organizations (Saleemi, 2000).

2.1.3. E-Payments

Songip et al., (2013) has highlighted the enablers of e-payment. The advancement of information technology has led to globalization where many businesses have websites. The websites allow various firms to participate in different activities in various supply chains. Security mechanism plays a major role in adoption of e-Procurement. Firms that wish to adopt e-payments consider security of the systems as a necessary requirement before embarking on the system implementation. The integration of e- payments with other organizational systems is necessary. Such systems include: payment gateways, supplier's systems (Tran & Huang, 2014).

2.1.4 E-Tendering

A tender is prepared and then posted; an authorized buyer is given secure access for document retrieval. The deadline and procedures for electronic bid submission (EBS) are clearly identified for both buyers and suppliers. Prospective bidders register, are authenticated and are then given a secure access key with which to submit their bids (Lewis et al., 2009). Proposals and associated response documents are submitted through an electronic bid submission system which logs a receipt and sends the supplier confirmation. Updates to the submissions can be made up to the time of closing. All submitted documents are stored in a secure fashion with a high level of security and bids may only be opened by the authorized buyer after the closing date and time have passed. A full electronic audit trail on all activity is maintained. Electronic bid submission improves supply chain performance because of easy accessibility (Mwai, 2013). The suspicions expressed by HCWs about giving blood for analysis imply that they are aware of potential implications and associated stigma. Any vaccination strategy requiring blood samples from HCWs is unlikely to have high coverage in this setting. The true rate of exposure however, is likely to be higher as underreporting, especially among doctors, and in particular, surgeons, is well-documented (Smith et al, 1996).

2.2 Theoretical review

2.2.1 The Disruptive Innovation Theory

The disruptive innovation is probably one of the most important innovation theories of the last decade (Bird, 2009). The core concepts behind it circulated so fast that one year after the publication of the theory, people were using the term without making reference to Harvard professor Clayton Christensen or to his book *The Innovator's Dilemma* (Harvard Business School Press). The term disruptive innovation as we know it today first appeared in the best-seller *The Innovator's Dilemma* (Dai & Kauffman, 2010).

In the book Harvard Business School professor Clayton Christensen investigated why some innovations that were radical in nature reinforced the incumbent's position in a certain industry, contrary to what previous models (for instance the Henderson-Clark model) would predict (Arberdeen Group, 2005). More specifically he analyzed extensively the disk drive industry because it represented the most dynamic, technologically discontinuous and complex industry one could find in our economy. Christensen's theory of disruptive innovation has gripped the business consciousness like few other ideas. In a review of enduring business books, *The Economist* called the theory "one of the most influential modern business ideas."

2.3 CONCEPTUAL FRAMEWORK

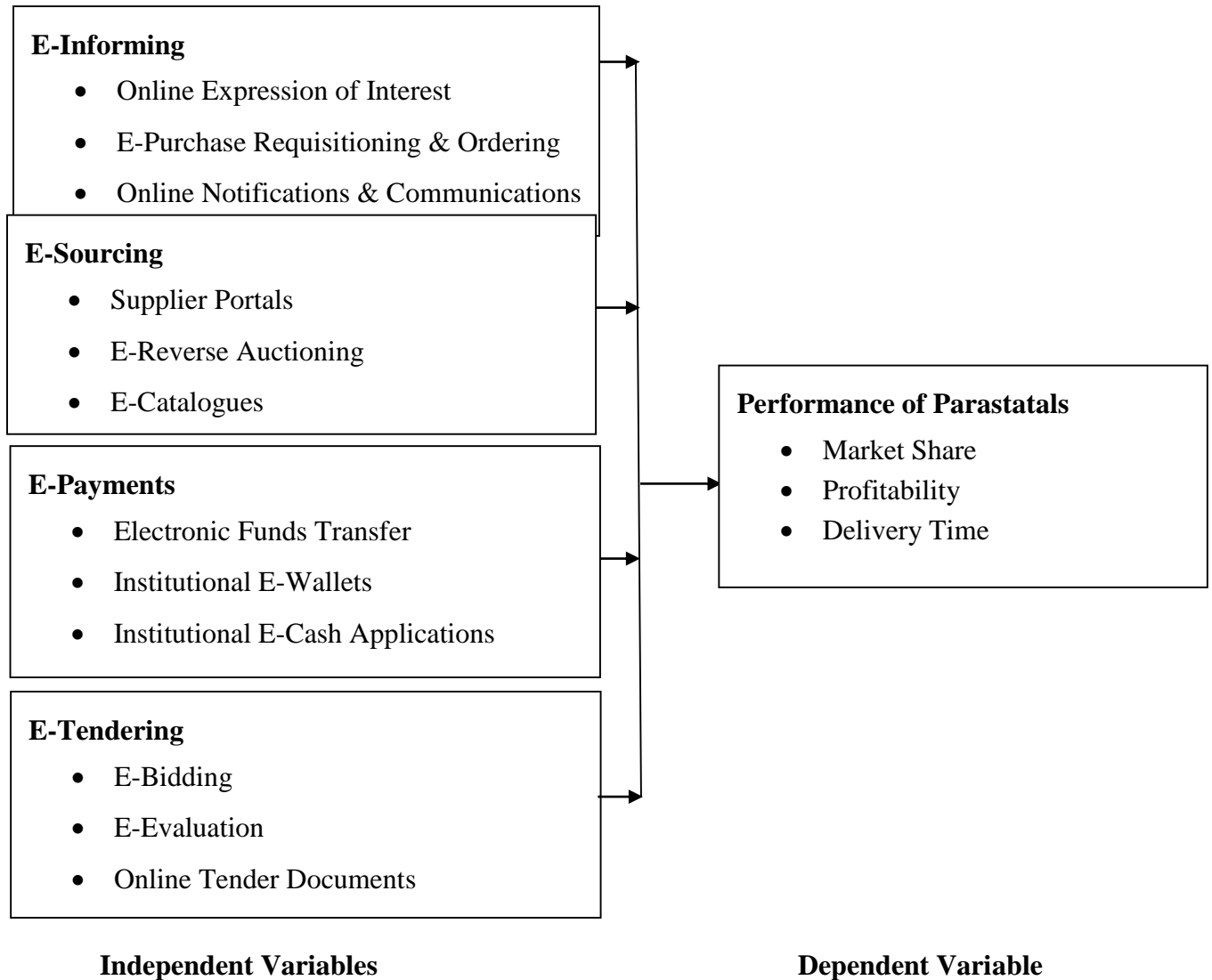


Figure 1: Conceptual Framework

3.0 METHODOLOGY

This research study adopted a descriptive research design approach. The researcher preferred this method because it allows an in-depth study of the subject. For this study census was used, all the 187 heads of procurement in all parastatals were issued with questionnaires. Data was collected using self-administered questionnaires. The data collected was analyzed by use of descriptive and inferential statistics. Multiple regression model was used to show the relationship between the dependent variable and the independent variables. Data generated was be keyed in and analysed by use of Statistical Package of Social Sciences (SPSS) version 21 to generate information which was presented using tables, charts, frequencies and percentages.

4. 0 RESULTS FINDINGS

4.1 Descriptive Statistics

4.1.1 E-Sourcing

The first objective of the study was to investigate the influence of E-Sourcing on performance of parastatals in Kenya. The respondents were asked to indicate to what extent did E-Sourcing influence performance of parastatals in Kenya. Results indicated that majority of the respondents 25 % agreed that it was to a very great extent, 27 % said that it was to a great extent, 35 % said it was moderate, while little extent and not all were at 5 and 8 % respectively.

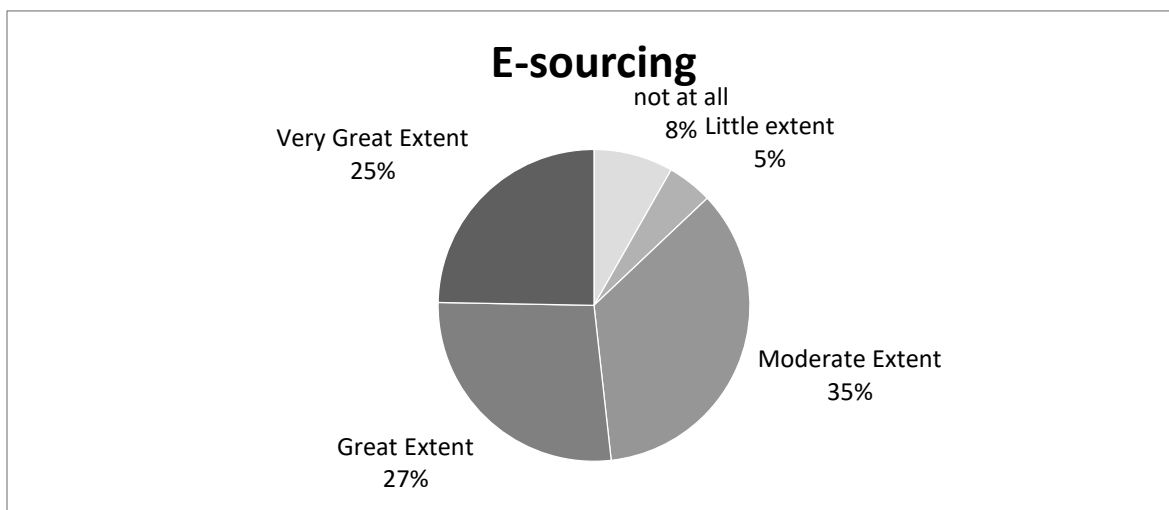


Figure 2: E-Sourcing

The respondents were also asked to comment on statements regarding E-Sourcing influence on performance of parastatals in Kenya. The responses were rated on a likert scale and the results presented in Table 1 below. It was rated on a 5 point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'neutral' has been taken to represent a statement agreed upon, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.

Results indicated that majority of the respondents 85.8 % agreed on the statement that supplier portals greatly influenced market share. Further results indicated that 88.3 % of the respondents were in agreement that E-reverse auctioning greatly influenced market share. A 100% of the respondents agreed that E-cataloguing greatly influenced market share.

88.25% of the respondents expressed agreement on the statement that e-reverse auctioning greatly influences profitability. Results indicated that majority of the respondents 85.8 % agreed on the statement that supplier portals greatly influenced market share. Results indicated that majority of the respondents 94.2 % agreed on the statement that supplier portals greatly influenced market share.

Results indicated that majority of the respondents 94.2 % agreed on the statement that supplier portals greatly influences delivery time. Results indicated that majority of the respondents 89.4 % agreed on the statement that E-reverse auctioning greatly influences delivery time. Results indicated that majority of the respondents 82.4 % agreed on the statement that E-cataloguing greatly influenced delivery time. The average mean of all the statements was 4.25 indicating that majority of the respondents agreed on e-sourcing influence on performance of parastatals in Kenya. However the variations in the responses were varied as shown by a standard deviation of 0.90. These findings imply that e-sourcing was at the heart of the organization. The findings agree with Khalil and Waly (2015) that using e-sourcing when sourcing for a new product or service can be smart but if not done well can prove to be expensive and time consuming.

Table 1: E-Sourcing influence on performance of parastatals in Kenya

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Supplier portals greatly influences market share	2.4%	5.9%	5.9%	48.2%	37.6%	4.1	0.9
E-reverse auctioning greatly influences market share	4.7%	4.7%	2.4%	45.9%	42.4%	4.2	1.0
E-cataloguing greatly influences market share	0.0%	0.0%	0.0%	56.5%	43.5%	4.4	0.5
Supplier portals greatly influences profitability	4.7%	4.7%	2.4%	49.4%	38.8%	4.1	1.0
E-reverse auctioning greatly influences profitability	1.2%	2.4%	1.2%	47.1%	48.2%	4.4	0.7
E-cataloguing greatly influences profitability	2.4%	2.4%	1.2%	42.4%	51.8%	4.4	0.8
Supplier portals greatly influences delivery time	2.4%	2.4%	1.2%	42.4%	51.8%	4.4	0.8
E-reverse auctioning greatly influences delivery time	4.7%	4.7%	1.2%	49.4%	40.0%	4.2	1.0
E-cataloguing greatly influences delivery time	7.1%	7.1%	3.5%	40.0%	42.4%	4.0	1.2
Average						4.25	0.90

4.1.2 E-Informing

The second objective of the study was to investigate the influence of E-Informing on performance of parastatals in Kenya. The respondents were asked to indicate to what extent did E-Informing influenced performance of parastatals in Kenya. Results indicated that majority of the respondents

31 % agreed that it was to a very great extent, 36 % said that it was to a great extent, 23 % said it was moderate, while little extent and not all tied at 5 %.



Figure 3: E-Informing

The respondents were also asked to comment on statements regarding E-Informing influence on performance of parastatals in Kenya. Results indicated that majority of the respondents 59 % agreed on statement that online expression of interest greatly influences market share. Further results indicated that 63 % of the respondents were in agreement that E-purchase requisitioning and ordering greatly influences market share. A 45% of the respondents agreed that online notifications and communication greatly influences market share.

59% of the respondents expressed agreement on the statement that online expression of interest greatly influences profitability. Results indicated that majority of the respondents 48 % agreed on the statement that E-purchase requisitioning and ordering greatly influences profitability. Results indicated that majority of the respondents 60% agreed on the statement that online notifications and communication greatly influences profitability.

Results indicated that majority of the respondents 78 % agreed on the statement that online expression of interest greatly influences delivery time. Results indicated that majority of the respondents 56 % agreed on the statement that E-purchase requisitioning and ordering greatly influences delivery time. Results indicated that majority of the respondents 61% agreed on the statement that online notifications and communication greatly influences delivery time.

The average mean of all the statements was 2.28 indicating that majority of the respondents agreed on e-sourcing influence on performance of parastatals in Kenya. However the variations in the responses were varied as shown by a standard deviation of 0.85. These findings indicate that through e-informing, the management could improve the communication capacity, demand additional cost reductions, faster deliveries, better quality and better performance. They agree with Githumbi (2013) that organizations must look toward their operational communication

improvements. The opportunities for cost savings and operational communication improvements can be enormous as the impact on margins and bottom line is considerable.

Table 2: E-Informing influence on performance of parastatals in Kenya

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Devi
Online expression of interest greatly influences market share	7%	6%	28%	40%	19%	3.6	1.1
E-purchase requisitioning and ordering greatly influences market share	0%	8%	29%	39%	24%	3.8	0.9
Online notifications and communication greatly influences market share	1%	0%	54%	39%	6%	3.5	0.7
Online expression of interest greatly influences profitability	2%	5%	34%	37%	22%	3.7	0.9
E-purchase requisitioning and ordering greatly influences profitability	0%	1%	51%	33%	15%	3.6	0.8
Online notifications and communication greatly influences profitability	0%	0%	40%	51%	9%	3.7	0.6
Online expression of interest greatly influences delivery time	0%	0%	21%	29%	49%	4.3	0.8
E-purchase requisitioning and ordering greatly influences delivery time	4%	0%	40%	41%	15%	3.7	0.9
Online notifications and communication greatly influences delivery time	5%	5%	29%	42%	19%	3.7	1.0
Average						2.28	0.85

4.1.3 E-payment

There was also need to establish how E-payment influenced performance of parastatals in Kenya as the third objective. The respondents were asked to comment on extent of E-payment influence performance of parastatals in Kenya. Results indicated that majority of the respondents 47 %

agreed that it was to a very great extent, 45 % said that it was to a great extent, 2 % said it was moderate; little extent was 2% and not all at 4 %.

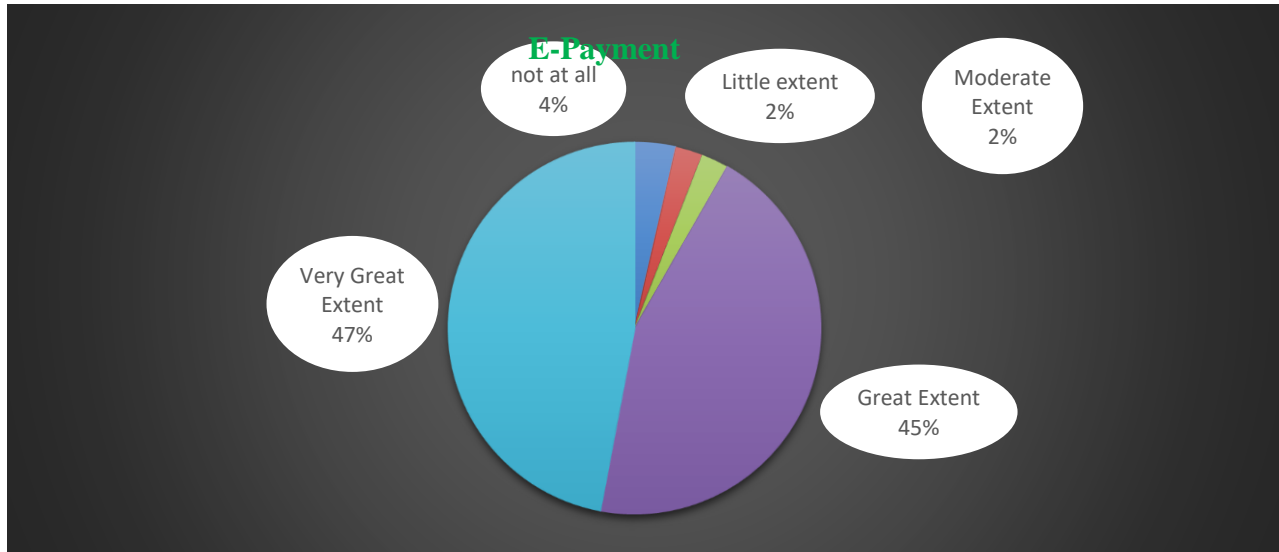


Figure 4: E-Payment

Results indicated that 70 % agreed on the statement that electronic funds transfer greatly influences market share. Majority of the respondents 91% agreed on the statement that institutional e-wallet greatly influences market share. Further results indicated that 37 % of the respondents were in agreement that institutional e-cash applications greatly influences market share.

A 57% of the respondents agreed that electronic funds transfer greatly influences profitability. 62% of the respondents expressed agreement on the statement that institutional e-wallet greatly influences profitability. Results indicated that majority of the respondents 65% agreed on the statement that institutional e-cash applications greatly influences profitability.

Results indicated that majority of the respondents 65 % agreed on the statement that electronic funds transfer greatly influences delivery time. Results indicated that majority of the respondents 66 % agreed on the statement that institutional e-wallet greatly influences delivery time. Results indicated that majority of the respondents 59 % agreed on the statement that institutional e-cash applications greatly influences delivery time.

The average mean of all the statements was 2.7 indicating that majority of the respondents agreed on insourcing influence on performance of parastatals in Kenya. However the variations in the responses were varied as shown by a standard deviation of 1.4. These findings imply that through e-payments, companies can improve competitive positioning, gain entry to new dynamic, technology driven markets, supplement critical skills and share the risk or cost of major development projects (Bryan, 2007).

Table 3: E-Payment influence on performance of parastatals in Kenya

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Devi
Electronic transfer influences market share	funds greatly market	2%	2%	26%	37%	33%	4.0	1.0
Institutional greatly market share	e-wallet influences	0%	4%	4%	42%	49%	5.0	5.5
Institutional applications influences market share	e-cash greatly market	6%	28%	29%	19%	18%	3.1	1.2
Electronic transfer influences profitability	funds greatly	0%	24%	20%	18%	39%	3.7	1.2
Institutional greatly profitability	e-wallet influences	0%	1%	37%	21%	41%	4.0	0.9
Institutional applications influences profitability	e-cash greatly	1%	0%	34%	26%	39%	4.0	0.9
Electronic transfer influences time	funds greatly delivery	2%	1%	32%	27%	38%	4.0	1.0
Institutional greatly delivery time	e-wallet influences	0%	0%	34%	31%	35%	4.0	0.8
Institutional applications influences time	e-cash greatly delivery	1%	2%	38%	34%	25%	3.8	0.9
Average							2.7	1.4

4.1.4 E-Tendering

There was also need to establish how E-Tendering influences performance of parastatals in Kenya. The respondents were also asked to comment on statements regarding E-Tendering influence influenced performance of parastatals in Kenya. Results also showed that 3% of respondents indicated to very great extent, great extent was at 12 %, moderate extent was 37 %, while little extent was at 27% and not at all was at 21%.

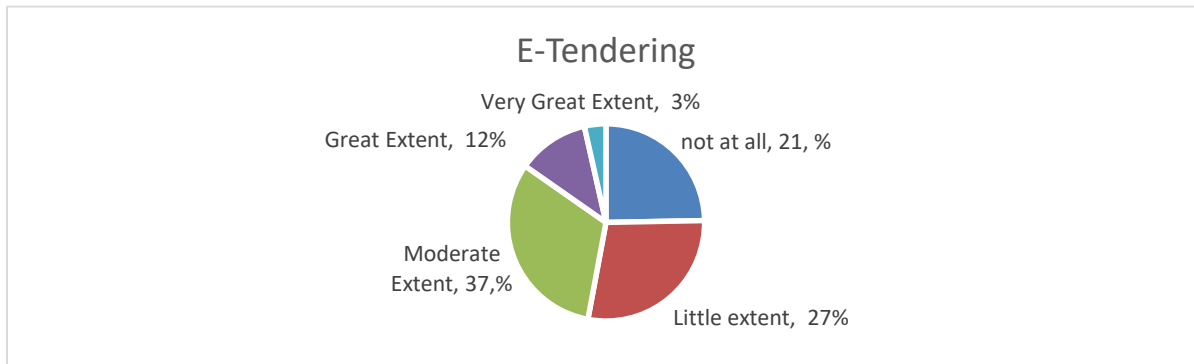


Figure 5: E-Tendering

Results indicated that majority of the respondents 100 % agreed on the statement that e-bidding greatly influences market share. Further results indicated that 69 % of the respondents were in agreement that e-evaluation greatly influences market share. A 47% of the respondents agreed that availing tender documents online greatly influences market share.

100% of the respondents expressed agreement on the statement that e-bidding greatly influences profitability. Results indicated that majority of the respondents 96 % agreed on the statement that e-evaluation greatly influences profitability. Results indicated that majority of the respondents 92 % agreed on the statement that availing tender documents online greatly influences profitability.

90% of the respondents expressed agreement on the statement that e-bidding greatly influences delivery time. Results indicated that majority of the respondents 88% agreed on the statement that e-evaluation greatly influences delivery time. Results indicated that majority of the respondents 87% agreed on the statement that availing tender documents online greatly influences delivery time.

The average mean of all the statements was 2.5 indicating that majority of the respondents agreed on insourcing influence on performance of parastatals in Kenya. However the variations in the responses were varied as shown by a standard deviation of 0.87. The results imply that an organization benefits greatly when e-tendering is embraced to reduce costs, introduce e-evaluation systems designed to address the organization's needs, and work with the organization to streamline e-tendering (Bird, 2009).

Table 4: E-Tendering influence on performance of parastatals in Kenya

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
E-bidding greatly influences market share	0.00%	0.00%	0.00%	54%	46%	4.5	0.5
E-evaluation greatly influences market share	0.00%	0.00%	30.60%	27%	42%	4.1	0.9
Availing tender documents online greatly influences market share	15.30%	15.30%	22.40%	20%	27%	3.3	1.4
E-bidding greatly influences profitability	0.00%	0.00%	0.00%	59%	41%	4.4	0.5
E-evaluation greatly influences profitability	0.00%	3.50%	0.00%	41%	55%	4.5	0.7
Availing tender documents online greatly influences profitability	4.70%	0.00%	3.50%	45%	47%	4.3	0.9
E-bidding greatly influences delivery time	0.00%	3.50%	7.10%	44%	46%	4.3	0.8
E-evaluation greatly influences delivery time	7.10%	0.00%	4.70%	39%	49%	4.2	1.1
Availing tender documents online greatly influences delivery time	7.10%	4.70%	1.20%	42%	45%	4.1	1.1
average						2.5	0.87

4.2 Correlation Analysis

Correlation analysis was used to determine both the significance and degree of association of the variables and also predict the level of variation in the dependent variable caused by the independent variables. The correlation technique is used to analyze the degree of relationship between two variables. The results of the correlation analysis are summarized in Table 5.

Table 5: Summary of Pearson's Correlations

		E-Sourcing	E-Informing	E-Payments	E-Tendering	Performance of Parastatals in Kenya
E-Sourcing	Pearson Correlation	1.00	.775**	.641**	.699**	.814**
	Sig. (2-Tailed)		0.00	0.00	0.00	0.00
E-Informing	Pearson Correlation	.775**	1.00	.570**	.688**	.769**
	Sig. (2-Tailed)	0.00		0.00	0.00	0.00
E-Payments	Pearson Correlation	.641**	.570**	1.00	.585**	.649**
	Sig. (2-Tailed)	0.00	0.00		0.00	0.00
E-Tendering	Pearson Correlation	.699**	.688**	.585**	1.00	.690**
	Sig. (2-Tailed)	0.00	0.00	0.00		0.00
Performance of Parastatals in Kenya	Pearson Correlation	.814**	.769**	.649**	.690**	1.00
	Sig. (2-Tailed)	0.00	0.00	0.00	0.00	

** Correlation is significant at the 0.05 Level (2-Tailed).

The correlation summary shown in Table 5 indicates that the associations between each of the independent variables and the dependent variable were all significant at the 95% confidence level. The correlation analysis to determine the relationship between e-sourcing and performance of parastatals, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship ($r=0.814$) between e-sourcing and performance of parastatals. In addition, the researcher found the relationship to be statistically significant at 5% level ($p=0.000, <0.05$).

The correlation analysis to determine the relationship between E-informing and performance of parastatals, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship ($r=0.769$) between e-informing and performance of parastatals. In addition, the researcher found the relationship to be statistically significant at 5% level ($p=0.000$, <0.05).

The correlation analysis to determine the relationship between e-payments and performance of parastatals, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship ($r=0.649$) e-payments and performance of parastatals. In addition, the researcher found the relationship to be statistically significant at 5% level ($p=0.000$, <0.05).

The correlation analysis to determine the relationship between e-tendering and performance of parastatals, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship ($r=0.690$) between e-tendering and performance of parastatals. In addition, the researcher found the relationship to be statistically significant at 5% level ($p=0.000$, <0.05). Hence, it is evident that all the independent variables could explain the changes in the performance of parastatals on the basis of the correlation analysis.

4.3 Regression Analysis

In this study multivariate regression analysis was used to determine the significance of the relationship between the dependent variable and all the independent variables pooled together. Regression analysis was conducted to find the proportion in the dependent variable (performance of parastatals) which can be predicted from the independent variables (E-sourcing, E-informing, E-payment and E-tendering).

Table 6 presents the regression coefficient of independent variables against dependent variable. The results of regression analysis revealed there is a significant positive relationship between dependent variable and the independent variable.

The independent variables reported R value of 0.861 indicating that there is perfect relationship between dependent variable and independent variables. R square value of 0.741 means that 74.1 % of the corresponding variation in performance of parastatals can be explained or predicted by (E-sourcing, E-informing, E-payment and E-tendering) which indicated that the model fitted the study data.

Adjusted R square in table 6 is called the coefficient of determination which indicates how performance of parastatals varied with variation in effects of factors which includes; E-sourcing, E-informing, E-payment and E-tendering. The results of regression analysis revealed that there was a significant positive relationship between dependent variable and independent variable at ($\beta = 0.741$), $p=0.000 <0.05$).

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.861 ^a	.741	.735	.5139

a) Predictors: (constant), E-sourcing, E-informing, E-payment and E-tendering

b) Dependent Variable: Performance of Parastatals.

The research used a multiple regression model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

$$Y = 8.450 + 0.344X_1 + 0.229X_2 + 0.126X_3 + 0.104X_4$$

The regression equation above has established that taking all factors into account (E-sourcing, E-informing, E-payment and E-tendering) constant at zero, performance of parastatals will be an index of 8.450. The findings presented also shows that taking all other independent variables at zero, a unit increase in e-sourcing will lead to a 0.344 increase in performance of parastatals .The P-value was 0.000 which is less 0.05 and thus the relationship was significant.

The study also found that a unit increase in e-informing will lead to a 0.229 increase in performance of parastatals. The P-value was 0.000 and thus the relationship was significant. In addition, the study found that a unit increase in e-payment will lead to a 0.126 increase in the performance of parastatals. The P-value was 0.000 and thus the relationship was significant.

Lastly, the study found that a unit increase in e-tendering will lead to a 0.104 increase in the performance of parastatals. The P-value was 0.004 and hence the relationship was significant since the p-value was lower than 0.05. The findings of the study show that, e-sourcing contributed most to the performance of parastatals.

Table 7: Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.450	.139		6.069	.000
	E-Sourcing	.344	.058	.414	5.960	.000
	E-Informing	.229	.054	.278	4.254	.000
	E-Payments	.126	.041	.162	3.050	.000
	E-Tendering	.104	.050	.123	2.077	.004

a) Predictors: (constant), E-sourcing, E-informing, E-payment and E-tendering

b) Dependent Variable: Performance of Parastatals

Table 8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	124.071	4	31.018	117.939	.000 ^b
	Residual	43.318	165	0.263		
	Total	167.389	169			

a) Predictors: (constant), E-sourcing, E-informing, E-payment and E-tendering

b) Dependent Variable: Performance of Parastatals

The significance value is 0.000 which is less than 0.05 thus the model is statistically significant in predicting how E-sourcing, E-informing, E-payment and E-tendering influence performance of parastatals. The F critical at 5% level of significance was 26.80. Since F calculated which can be noted from the ANOVA table above is 117.939 which is greater than the F critical (value = 26.80), this shows that the overall model was significant. The study therefore establishes that; E-sourcing, E-informing, E-payment and E-tendering were all important e-procurement practices influencing performance of parastatals. These results agree with Bilali and Bwisa (2015) results which indicated a positive and significant influence of e-procurement practices on performance of parastatals.

5. 0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The study sought to examine the influence of e-procurement on performance of parastatals in Kenya. The study targeted staff of parastatals, the heads of procurement in the organizations. A total of 170 employees participated. This specific study found out that majority of respondents highly agree that parastatals had embraced e-sourcing with regard to its procurement activities, a

majority of respondents were found to highly agree that parastatals had embraced e-informing with regard to its procurement activities, a majority of respondents were found to highly agree that parastatals had embraced e-payments with regard to its procurement activities and lastly this study found out that majority of respondents highly agree that parastatals had embraced e-tendering with regard to its procurement activities. The summary of the study findings presented herein followed the research objectives formulated in chapter one of the study.

5.1.1 E-Sourcing

The study sought to assess influence of e-sourcing on performance of parastatals in Kenya as the first objective of the study. A majority of respondents were found to highly agree that parastatals had embraced e-sourcing with regard to its procurement activities. Supplier portals and e-cataloguing were common among parastatals. Correlation and regression results revealed that this was the most important variable that could perhaps be explained by the observation from the findings that e-sourcing was an important factor in influencing performance of parastatals.

5.1.2 E-Informing

The influence of e-informing on performance of parastatals in Kenya was the second objective of the study. A majority of respondents were found to highly agree that parastatals had embraced e-informing with regard to its procurement activities. Online expression of interest, e-purchase requisitioning and ordering were common among parastatals. Correlation and regression results revealed that this was the second most important variable that could perhaps be explained by the observation from the findings that e-informing was an important factor in influencing performance of parastatals.

5.1.3 E-Payments

The study endeared to assess influence of e-payments on performance of parastatals in Kenya as the third objective of the study. A majority of respondents were found to highly agree that parastatals had embraced e-payments with regard to its procurement activities. Electronic funds transfer and institutional e-wallet were common among parastatals. Correlation and regression results revealed that this was the third most important variable that could perhaps be explained by the observation from the findings that e-payments was an important factor in influencing performance of parastatals.

5.1.4 E-Tendering

The influence of e-tendering on performance of parastatals in Kenya was the last objective of the study. A majority of respondents were found to highly agree that parastatals had embraced e-tendering with regard to its procurement activities. E-evaluation and e-bidding were common among parastatals. Correlation and regression results revealed that this was the most important variable that could perhaps be explained by the observation from the findings that e-tendering was an important factor in influencing performance of parastatals.

5.1.5 Performance of Parastatals

The study endeared to determine influence of e-procurement on performance with reference to parastatals in Kenya. The regression results revealed that e-procurement practices identified in the study, that is, e-sourcing, e-informing, e-payment and e-tendering combined could explain

approximately 74.1% of the variations in the performance of parastatals. The other 25.9% may be attributed to other strategies not explained by the model or the variables.

Quality of goods purchased recorded positive growth, timely purchases and stock out reduction further recorded positive growth, cost reductions due to minimal or no reworks also recorded positive growth. From inferential statistics, a positive correlation is seen between each determinant variable and performance of parastatals. The strongest correlation was established between e-sourcing and performance of parastatals. All the independent variables were found to have a statistically significant association with the dependent variable at ninety five percent level of confidence.

5.2 Conclusion of the study

Based on the study findings, the study concludes that performance of parastatals can be improved by e-sourcing, e-informing, e-payment and e-tendering.

First, in regard to e-sourcing, the regression coefficients of the study show that it has a significant influence of 0.344 on performance of parastatals. This implies that increasing levels of e-sourcing by a unit would increase the levels of performance of parastatals by 0.344. This shows that e-sourcing has a positive influence on performance of parastatals.

Second in regard to e-informing, the regression coefficients of the study show that it has a significant influence of 0.229 on performance of parastatals. This implies that increasing levels of e-informing by a unit would increase the levels of performance of parastatals by 0.229. This shows that e-informing has a positive influence on performance of parastatals.

With regard to the third objective, the regression coefficients of the study show that it has a significant influence of 0.126 on performance of parastatals. This implies that increasing levels of e-payments by a unit would increase the levels of performance of parastatals by 0.126. This shows that e-payments have a positive influence on performance of parastatals.

Lastly, in regard to the fourth objective, the regression coefficients of the study show that it has a significant influence of 0.104 on performance of parastatals. This implies that increasing levels of e-tendering by a unit would increase the levels of performance of parastatals by 0.104. This shows that e-tendering has a positive influence on performance of parastatals.

Drawing on this research, lack of e-sourcing, e-informing, e-payment and lack of e-tendering in parastatals is leading to poor performance. Though the parastatals are striving hard to improve their performance there are still issues of poor quality products, long lead time and high cost of projects/products. It was articulated that the current phenomenon of poor performance in the public sector can be reversed if the government and other stakeholders ensure e-sourcing, e-informing, e-payment and e-tendering are embraced in procurement function. Thus, it is evident that all the independent variables identified in this study were all important e-procurement practices that influenced the performance of parastatals.

5.3 Recommendations of the study

The study recommends that procurement staff should ensure that they strictly follow procurement procedures to ensure that goods supplied are of the right quality, in the right quantity, at the right time, to the right place from the right source. This will aim at satisfaction of customers in terms of cost, quality, and timeliness of the delivered product or service, minimizing administrative operating costs, conducting business with integrity, fairness and openness. This can be attained by proper strategic planning. More checks and controls should be introduced to check on the integrity of the tendering systems and ensure that it is as open as possible.

5.4 Areas for further studies

The study is a milestone for further research in the field of performance of parastatals in Africa and particularly in Kenya. The findings demonstrated the important e-procurement practices to performance in parastatals to include; e-sourcing, e-informing, e-payment and e-tendering. The current study should therefore be expanded further in future in order to include e-procurement practices that may as well have a positive significance to performance of parastatals. Existing literature indicates that as a future avenue of research, there is need to undertake similar research in other institutions and public sector organizations in Kenya and other countries in order to establish whether the explored practices herein can be generalized to affect performance in public institutions.

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