PREVALENCE OF CORRUPTION IN PUBLIC PROCUREMENT
(CASE OF KENYA AGRICULTURAL RESEARCH INSTITUTE)

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ABSTRACT

This study seeks to find a sustainable solution to the problem of corruption in public procurement. The study has been prompted by the devastating nature of corruption which starves resources from public services and projects leading to under-development of the economy and impoverishment of the general population.

The objective of this study is to establish the causes and effect of corruption in public procurement using the Kenya Agricultural Research Institute as a case study, with a view to making suggestions on how this problem can be countered and eliminated. The specific objectives of this study are; to identify the main causes of corruption in public procurement, to identify the levels and magnitude of corruption in public procurement, to identify the obstacles in fighting corruption, and to recommend ways of minimizing corruption in public procurement.

The Case Study Research Design will be used to conduct this research study. Primary data will be gathered through questionnaires and personal interviews. Secondary data will be gathered from documentary sources.

This study will be of benefit to K.A.R.I. as a procuring entity. It will be of benefit to the institutions established to increase efficiency in public procurement such as the Public Procurement Oversight Authority, the Efficiency Monitoring Unit and the Ethics and Anti-Corruption Commission. It will also be of significance to professionals in procurement departments in other procurement entities who may be interested in putting in place control measures to increase efficiency.

My assumption is that this study will be consumed by the intended recipients which will help them identify the causes, magnitude, and obstacles in fighting corruption. The study will also provide recommendations to help end and prevent corruption in those institutions.

Key Words: *Sustainable Solutions, Corruption, Public Services*

INTRODUCTION

Corruption is a vice that has entrapped many people all over the world, from the king to the pauper, from the lowly clerk or policeman on the street to leaders of the world's most leading financial institutions. All countries of the word have suffered from this scourge.

Many countries, Kenya included, have tried to fight corruption. Many forms of punishment have been meted out on people who have engaged in theft of public resources and some of these punishments have been very severe to include public executions, whipping in public, stoning, and cutting off the hands of people caught with their hand in the till but none of these punishments have managed to completely eliminate the vice. The issue of corruption has been addressed in many local and international fora, many legislations passed to fight the scourge, but this has not served to eliminate the vice. People in control of public resources and positions of power come up with new methods of unjustly converting and accumulating wealth at the expense of members of the public they are meant to safeguard the wealth for.

Corruption networks have spread their tentacles worldwide. With the assistance of high profile politicians, government bureaucrats especially those involved in public procurement and high profile lawyers, citizens of these countries are robbed with impunity, of their hard earned taxes, natural resources and the future of their children.

Kenya has been bedeviled by the scourge of corruption for a long time. The problem has passed on from one government to the next but no serious effort has been put in place to fighting the vice. This is particularly so where political protection of corruption perpetrators thrives and where anti corruption czars become the hunted rather than the hunters. Illegal conversion of public resources to personal use, embezzlement of funds through public procurement, and the proliferation of high level as well as petty bribery to facilitate escape from justice, among other vices, has correlation to dismal growth in many sectors of the economy and to under-development of the nation as a whole.

If the right controls to avert such temptations are not put in place, persons who due to their positions of authority ,who have access and control of the resources of the organization, will be predisposed to corruptly convert some of these resources to personal use to the detriment of their organization and country as a whole. Such acts have been aptly captured by the various reports published by various Commisions set up by the Government to probe into corruption allegations and they include, the plunder of Kenya's state corporations and protected Lands prepared by th Kenya National Human Rights Commision and the Kenya Land alliance, the reporty of the Commision of Inquiry into the Illegal and irregular Allocation of Public Land, popularly

known as the Ndungu report, the Truth, Justice and Reconciliation Commission chaired by BethuelKiplagat, the Kroll report, the presidential election petition filed at the supreme court by the Coalition for Reforms and Democracy, among many others.

It is against this backdrop that Kenya enacted laws to fight corruption, among them Anti-Corruption and Economic Crimes Act, 2003, which establishes the Ethics and Anti-Corruption Commission, Public Audit Act 2003, Government Financial Management Act 2004, Public Procurement and Disposal Act 2005, Privatization Act 2005, Witness Protection Act 2006, and the Political Parties Act 2007,

However, despite all these laws there is little to show in terms of prosecutions, successful convictions and restitution of public funds and property. The culture of stealing from the public coffers continues with impunity.

Statement of the problem

Corruption is an age old problem. The origin of corruption as a theoretical notion can be traced to ancient philosophers such as Thucydides, Plato and Aristotle (Heidenheimer et al 1989). Historical records ranging from biblical times to ancient civilization such as the Roman Empire have evidence of different forms and levels of corruption. Corruption is a latent crime which manifests itself when an opportune situation occurs especially through the acquisition of power and authority. Good and well educated men are not beyond corruption and wickedness when they rise to positions of power (Machiavelli 1505), hence "power corrupts, and absolute power corrupts absolutely"

In Kenya, the last four political regimes that have existed since independence; the Kenyatta, the Moi, the Kibaki and the Uhuru regime, corruption has continued in public procurement unabated. Most citizens have internalized and accepted the problem of as a fact of life, a necessary evil. Indeed many have prospered because of the networks of graft in which they participate, and would hate to see them come to an end. Costs skyrocket because of entrenched corruption. The ones who really suffer the consequences are at the bottom of the pyramid, that is, those who need basic health care, education and security. (Bindra 2007)

According to Transparency International's Corruption Perception Index (2013), Kenya scored 27 points out of a possible 100 and was number 136 out of 177 countries ranked in order of the least corrupt. In the Global Corruption Barometer (2012), a National survey by Transparency International Kenya Chapter found that the Kenya police led in corruption with a score of 4.8 out of a possible 5, The Kenyan parliament was second with 4.0, the Judiciary was third with 3.6, political parties were fourth with 3.5 and medical service institutions were fifth with a score of 3.2 out of a possible five.

Corruption is a big problem in that resources earmarked for carrying out particular activities that are meant to benefit the citizens of Kenya, as well as ensure Kenya achieves economic development are converted into private resources. The most serious cases of

corruption are perpetrated through public procurement.

Corruption is a problem to the procuring entity, the Government and the citizens. It is a problem to the procuring entity because it will not achieve its objectives of providing essential goods and services to the citizens as required. Misappropriation of resources is a problem because the Government would have to expend more resources to replace those stolen as well as seek for more resources to cater for upcoming needs, which in turn slows economic development. It is a problem to citizens because the citizens have to pay more taxes to replace what was stolen and to pay for other essential services that need to be catered for.

Research objective

The objective of this study was to establish the prevalence of corruption in public procurement with a view to coming up with recommendations on how to eradicate the vice in the Kenya Agricultural Research Institute in particular and in public procuring entities in general. **The specific objectives of the study are;**To determine the usefulness of audits in curtailing the prevalence of corruption KARI and To determine the usefulness of Information Communication Technology in reducing corruption and its impacton KARI.

Research questions

1. How will effective internal and external audits reduce incidences of corruption in KARI?

2. Will the use of information communication technology have an effect in reducing corruption in KARI?

Scope of the study.

KARI is a large public procuring entity with 23 Research Centres and 11 sub Centres all over the Kenya. In this study, it will be assumed to represent the general public procurement population as far as corruption in public procurement is concerned.

The researcher will begin his study with the review of literature. He will then select a sample group of employees in K.A.R.I to whom he will issue questionnaires and conduct personal interviews. The group will mainly compose of staff from Procurement, Accounts and Human Resource Departments as they are more likely to encounter corruption in the course of their work.

The researcher will then analyze the responses from the questionnaires and interviewees in order to determine how each of the independent variables influences corruption in public procurement.

Theoretical literature

Theory is a conceptual basis for understanding, analyzing and designing ways to investigate relationships within a social system. (Torraco, 2010). (Bull, 2011) defines theory as a set of interrelated concepts, prepositions or definitions representing a systematic view of phenomenon. Defee et al (2010) said that good research should be grounded on theory. This study will therefore be guided by the Broken

Windows Theory of International Corruption, Ethical Theory, and Systems Theory as shown below;
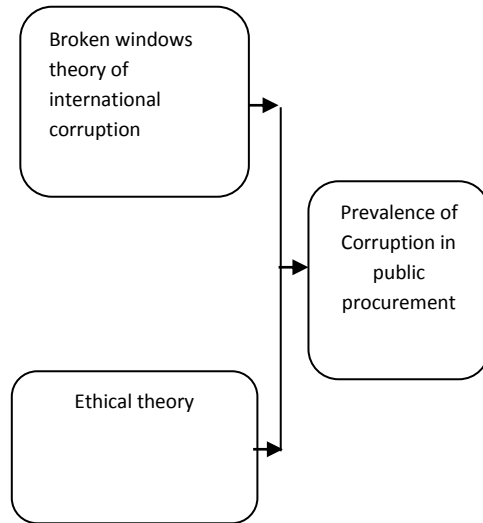
Thesis Concept

Figure 1. Theoretical framework

a) ***Broken windows theory of international corruption***

This theory conceptualizes corruption through the lens of broken windows theory of community policing, focusing on the root consequences of corruption as well as its secondary effects. The theory posits that corruption is a broken window that signals the breakdown of community controls necessary for the maintenance of social order (Roger, 2013.A government that abuses its power for private gain is a government that cannot be trusted to pursue its general welfare. Corruption negatively alters the public's perception of government and society. Corruption is inextricably linked to many other public concerns. Empirical evidence finds a positive relationship between a county's corruption ranking and its ranking on other major indices measuring public welfare. Communities that are perceived to take corruption seriously score well on their commitment to other social goods, such as, global competitiveness, productivity, increased standards of living, enhanced children's health, and the safeguarding of civil liberties. (Alford 2013)

b) ***The ethical theory***

According to Manuel Velasquez and Claire Andre Being (1996), ethics have to do with what one's feelings tell him is right or wrong, ethics have to do with one's religious beliefs, and being ethical is doing what the law requires. Ethics consists of standards of behavior a society accepts. The ethical theory places emphasis on the concept of justice, truth and fairness. Ethical theory provides that each person has a sense of what is right and wrong and therefore one should follow his conscience when faced with a compromising situation. Increased contact between buyers and sellers has been noted to lead to higher incidences of corruption. ICT reduces such contact and opportunities for corruption by automating the procurement process and facilitates the tracking of those who transact through it.
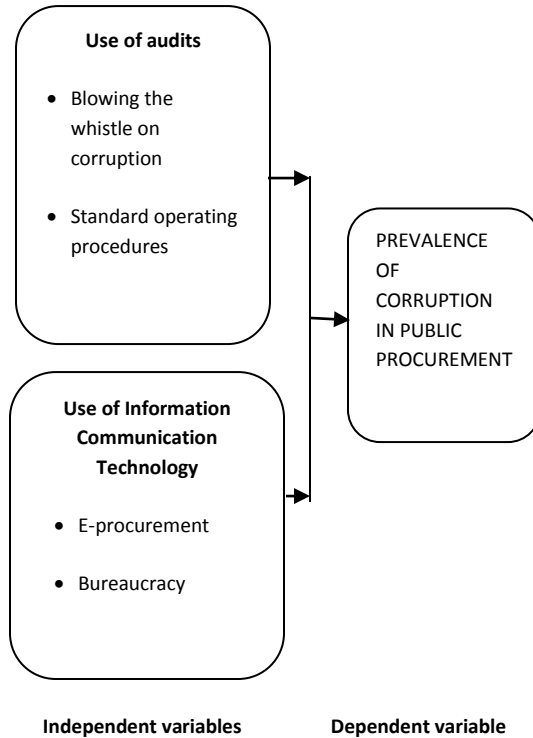
Conceptual framework

Figure 2 Conceptual framework

Use of audits

Standard Operating Procedures should be put in place to provide a step by step basis for carrying out a particular task. Any deviations should be reported for corrective action. Low pay, poor terms of service and despicable working conditions lead to low morale and motivation. These lead to misconduct and defiance which in turn lead to intentional corruption. Equity theory suggests that when workers feel underpaid and exploited, they will attempt to restore the equilibrium by stealing from the organization, undermining the employer, reducing effort and resigning. The wide salary gaps between the top management on the one hand, and the low level staff on the other hand, activate latent corruption. Such a state of disharmony is a perfect breeding ground for corruption because the lower paid cadre will try to restore the equilibrium illegally if the opportunity arises. This was highlighted in an article in the Daily Nation titled 'Why magistrates find it hard to resist being compromised" (Nation Correspondent 2007). The pressure to live a comfortable life is very high and this subjects them to high temptation especially when handling cases of high value.

Internal and external audits should be carried out on a regular basis so as to detect and prevent any fraudulent activities before they become serious. Similarly, all efforts should be made to report cases of corruption. However, reporting corruption or blowing the whistle on corruption can be a perilous affair. This was clearly illustrated when the whistle was blown on the Goldenberg scandal.

In April 1992, Mr. David Sadera Munyakei exposed Kenya's biggest ever financial scandal involving Kshs. 158 Billion payout in irregular export compensation claims to jewellery firms. But on 31st July 2006, Munyakei died a poor and frustrated man having lost his job at the Central Bank of Kenya. Mr. Munyakei died 14 yrs after exposing the Goldenberg scandal, yet it had not been solved by the time of his death .The cast claimed to be behind the scandal included a retired President, two former Vice Presidents, Head of the National Security Intelligence Service, then known

as Police Special Branch, and a host of other top Officials in the former regime. (Namunane B.2006)

Against such a galaxy of senior people all who benefited from the scheme, what chance did a junior accounts clerk stand in the fight against such mega corruption? Indeed what chances do other whistle blowers have when they are up against even less formidable forces in the organizations where they work. Who would dare expose or report corruption after witnessing how Mr. Munyakei was treated by the government? (The Editor, 2006).

The peril to the whistle blower usually comes from the Government or the employer. The harm that he or she suffers is usually loss of employment, benefits or even being exposed to personal liability (The Editor 2006). The danger to a witness is mainly from criminals and consists of fear of physical harm to oneself or family. A whistle blower therefore needs job guarantees and a witness needs a new identity and security. Only then, can whistle blowing work as a deterrent to corruption (Maina, (2007)

Use of Information Communication Technology

Information Communication Technology is an information system that helps integrate the systems of various players in the supply chain right from the supplier's supplier all the way to the customer's customer. Where information and records are maintained manually, they are prone to errors, unnecessary delays, are expensive to maintain and encourage bureaucracy

(Knudsen & Pressuti, 2010). Bureaucracy is an organizational structure characterized by long and slow decision making processes often referred to as Red Tape. It involves excess paperwork that acts as a catalyst for corruption. Bureaucrats use delaying tactics under the guise of too much paperwork to delay decisions and delivery of services. This behavior either encourages the public to initiate corruption or the public servant to take advantage and engage in outright corruption. This should be discouraged and processes should be automated as much as possible so as to reduce contact between buyers and sellers and to enable tracking of any deviations from standard.

Failure to digitize the registries in the Ministry of Lands and Commissioner for Lands assisted in the illegal and irregular allocations of public land that were a common feature of President Moi's regime. These allocations were classic cases of theft of public resources meant for research and production that would benefit the country and its development partners. Most allocations were made to politically correct individuals without justification and resulted in individuals being unjustly enriched at a great cost to the people of Kenya. Many allotees proceeded to sell the land to state corporations at colossal amounts of money far in excess of prevailing market value. Among other state corporations whose land was irregularly grabbed and allocated, was land belonging to various KARI Research Centres all totaling 3,557 acres valued at sh 1,330,654,627 (Kiai& Lumumba,2012).

ICT should be adopted widely so as to increase transparency in public transactions especially those that involve public property and resources.

Empirical Review

Chandra Mehra in his book "Corruption: Dealing with the devil" says that corruption is an all pervasive global disease. Africa is not the only region in the world which is affected by the vice. In fact the continent has acquired the problem from outsiders and is therefore a relative newcomer to "dealing with the devil". Therefore it is not yet fully equipped to handle high level corruption as well as new methods of theft of public resources.

In the new financial environment, the idea that corruption makes the business climate more attractive is fast losing favour. There is much to learn from Asia's two main success stories that have proved the theory wrong; Hong Kong and Singapore. Their method to eliminate corruption was "zero tolerance". During the twenty years that elapsed from the time they became serious about corruption until the onset of the Asian financial crisis, Hong Kong moved from a poor developing nation to a sophisticated First \World Financial Centre. In his book "Controlling Corruption"(1988) Robert Klitgaard called the Hong Kong Independent Commission Against Corruption (ICAC) "probably the largest and most famous anti-corruption agency in the developing world" George Moody Stuart, a long time consultant on African Agriculture and author of the 1994 book "Grand Corruption" argued that " Once the

possibility of personal gain becomes a factor, it rapidly becomes the only factor that matters, pushing aside cost, quality, delivery and other legitimate considerations in the awarding of contracts". The result is that undeserving suppliers and contractors are awarded contracts, long and expensive litigation results, substandard goods and services are delivered, goods and services may not be delivered at all but are paid for, and all this results in huge losses to the taxpaying public.

Critical review of existing literature

Scholars in Kenya such as Kidombu, Kibwana, Kivuto, among others have conducted studies on corruption in public procurement but no comprehensive study has been carried out on effective reform and implementation of measures to combat corruption. There have been no empirical studies that can be traced to explain why there has been non compliance in the laws and regulations that have been put in place so far. Ntayi sought to explain the unethical behavior of public procurement officers using social cohesion, group think and ethical attitudes and established that these variables considerably contribute to explain the unethical procurement behavior.

Studies are conducted regularly by organizations such as Transparency International, Kenya Chapter which publishes the Corruption Perception Index and the Global Corruption Barometer to establish the public's level of corruption in the country and in various public institutions. Other authors

have advanced theories explaining the prevalence of corruption in public procurement but none of them have been able to explain the constraints that cause resistance and slow reforms to implementation of reforms in public procurement entities

Research Gap

The benefits of an efficient public procurement system are numerous and there is therefore need to implement laws and regulations that are designed to increase efficiency. It is equally important to have professionally trained procurement personnel to carry out the procurement function. In addition to professional training, workshops and seminars to update procurement officers on the most recent developments need to be carried out on a regular basis. Newly employed procurement officers should undergo proper induction into the organization so as to reduce incidences procedural errors which can be very expensive.

A review of existing literature has established that previous researchers have not conducted comprehensive research on the prevalence and impact of corruption in the public procurement function. This study is therefore designed to fill the missing link by seeking to give recommendations on effective eradication of corruption in public procurement.

RESEARCH METHODOLOGY

Research design

Research design refers to the method used to carry out research. The researcher in this study used the descriptive research design. The method was considered suitable because it allowed for an in depth, qualitative and quantitative study, and it was economical. It also allowed for comprehensive collection of data and enabled the researcher generalize the findings to a larger population. (Cooper & Schindler, 2003).The institution under study was the Kenya Agricultural Research Institute (KARI). It was selected because it was well spread out countrywide and thus representative of the country's population.

Target population

A target population in statistics refers to the specific population on which information is desired. According to Ngechu (2004), a population is a well defined set of people, services, elements, events, or things that are being investigated. The target population in this study was KARI staff working in the Procurement, Accounts and Human Resource Departments. The institute has about 90 members of staff working in these three departments who made up the target population out of which the researcher drew the sample population.

Sampling frame

The sampling plan describes the sampling unit, sampling frame, sampling procedure and the sample size of the study. The sampling frame describes the lists of all population units from which

the sample will be selected (Cooper & Schindler, 2003). In this case study, 30 members of staff from KARI's Procurement, Accounts and Human Resource Departments were selected as the sample size. The researcher adopted stratified random sampling to select the 30 respondents. Stratified random sampling technique is used when the population of interest is not homogenous and can be divided into groups or strata to obtain a representative sample. According to Kothari (2010), a representative sample is one in which at least 10% of the population is represented, therefore the choice of 30% as the sample size is considered appropriately representative. The researcher in this case used the questionnaire in conducting the study. Each questionnaire was coded and only the researcher knew which person responded. The coding technique was used for the purpose of determining completed and returned questionnaires.

The questionnaire in this study comprised of two parts. The first part gathered demographic and operational characteristics designed to determine fundamental issues about the respondents. The second part sought to determine the prevalence of corruption in KARI.

Questionnaires were designed and distributed to KARI staff in five research centres namely; KARI National Veterinary Research Centre -Muguga North, KARI Trypanosomiasis Research Centre -Muguga, KARI Horticultural Research Centre- Thika, KARI Potato Research Centre –Tigoni, and KARI National Agricultural Research Laboratories Westlands.

Data analysis
Data that was collected was coded to enable the responses to be grouped into various categories. Data analysis was done using SPSS Version 21 and Microsoft Excel to generate quantitative reports through tabulations, percentages and measure of central tendency.

Microsoft Excel helped to group the data to facilitate comparison. Inferential statistics were used because if a sample was representative of a population, an important conclusion about the population could often be inferred from analysis of the sample (Murray, 2011). Multiple linear regression analysis was conducted to determine the relationship between dependent variable and independent variables.

The regression thus became:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + €$$

FINDINGS AND DISCUSSION

Where β_0 was the regression intercept; $\beta_1 - \beta_2$ were the regression co-efficient; Y was the dependent variable (prevalence of corruption in public procurement); X_1 was use of audits and X_2 was use of ICT.

Respondents
The questionnaire were given to the sample population of 30 respondents out of which 29 were filled and sent back representing a response rate of 96.67%. The respondents were selected as laid out

in chapter three where Top level management represented 16.67% of the sample, Middle level management 33.33%, and Low level staff 50.00%.

Reliability and constructs validity

The reliability of each construct was examined to ensure the items collectively measured their intended construct consistently as recommended in the extant literature (Sanders, Lewis, Thornhill, 2003). Internal consistency reliability was examined in the way of Cronbach's alpha (Nunnally, 1978). Generally 0.70 or higher is considered to be an acceptable value for Cronbach's alpha reliability (Serakan, 2003)

Table 1 indicates Cronbach's alpha reliability. Convergent reliability exists if a group of indicators are measuring one common factor. Convergent reliability can be assessed at the individual and construct level by examining individual item loading (squared multiple correlations). Individual item loadings which represent multiple correlations of 0.70 or greater imply that the indicator shares more variance with its construct than error variance (Kumar, 2000).

Table 1 Reliability and validity

	Number of items	Cronbach's alfa -C
Adequacy of audits	8	0.776
Use of Information Communication Technology	3	0.266

Background information of the respondents

As illustrated in table 4.1, 62% of the respondents were male and 38% female. Most of the respondents had a level of education of Diploma and above with 6.8% having a PHD, 17.2 with a Masters Degree, 17.2 being undergraduates, 31% having Diplomas and 27.5 having high school education.72.4% of the respondents had formal training while 27.6 had informal training. All the respondents had worked for more than 5 years.

Prevalence of corruption

Under this section, various critical issues were highlighted on different topics. The research assessed the use of audits and use of information Communication Technology. The topics were aimed at addressing the research objectives of this study.

Assessing the use of audits in preventing corruption

Table 2 and 3 illustrates the outcomes of the questions posed under a variety of topics. 13.8% of the respondents had an internal auditor in their Centre while 82.8 % did not. 75.9% of the respondents said that external auditors visited their Centres only once a year, 17.2% said the auditors visited twice a year, and 3.4% said auditors came more than twice a year. On the use of serialized documents to help in tracking and tracing of documents, 82.8% said they used such documents, 10.3% said such documents were not used, and 6.9% did not respond to this question. 69% of the respondents had undergone awareness training on anti-corruption but 27.6% had not. Respondents were asked whether seminars on corruption prevention had an impact on reducing corruption in their Centres and KARI in general and 51.7% said the seminars served to reduce corruption, 41.4% said the seminars did not help reduce corruption and 6.9% did not respond to this question. Respondents were asked whether they had an anti-corruption committee in their Centre and 79.3% said they had one, 3.4% said they did not and 17.2% said they did not know whether they had one or not. 75.9% of the

respondents had never used the anti-corruption boxes provided in their Centres while 20.7% had used it between one and five times. The respondents were asked if they had confidence in the KARI administration in maintaining confidentiality and protecting their jobs and identity if they reported corruption and only 17.2% had confidence in the administration, 37.9% had no confidence and 44.8% were not sure whether confidentiality would be maintained and their identities and jobs protected. The researcher sought to know whether the respondents would bribe auditors to write an unqualified report and 13.8% said they would while 86.21% said they would not. The researcher also sought to know what the respondents thought on the application of the law relating to corruption. 31.0% thought the law was applied equally to all, 65.5% felt the law was applied in a manner favouring the rich, while 3.4% did not respond to this question.

Variable	Frequency	Percentage
No response		
Effect of seminars in reducing corruption	15	51.7
Yes	12	41.4
No	2	6.9
No response		
Centre having Anti Corruption Committee	23	79.3
Yes	1	3.4
No	5	17.2
Don't know		
Use of Anti Corruption box		
More than five times	1	3.4
Between one and five times	6	20.7
Never	22	75.9
Confidence in KARI Administration to maintain confidentiality and protect person reporting corruption	5	17.2
Yes	11	37.9
No	13	44.8
Not sure		
Would respondent bribe auditor?	4	13.8
Yes	25	86.2
No		
Law relating to corruption applied	9	31.0
Equally to all	0	0.0
Favours poor	19	65.5
Favours rich	1	3.4
No response		

Table 2 Assessing use of audits in preventing corruption (n=29)

Variable	Frequency	Percentage
Have Centre Internal auditor		
Yes	4	13.8
No	24	82.8
No response	1	3.4
Visit by external auditors		
Once	22	75.9
Twice	5	17.2
More than twice	1	3.4
No response	1	3.4
Use of serialized documents		
Yes	24	82.8
No	3	10.3
No response	2	6.9
Awareness training on anti corruption	20	69.0
Yes	8	27.6
No	1	3.4

Table 3 Mean scores for questions on use of audits in preventing corruption(n=29)

Variable	Mean	Standard deviation	Interpretation Yes/No
Have Centre Internal auditor Yes No	0.14	0.36	No
Visit by external auditors Once Twice More than twice No response	0.25	0.52	Once
Use of serialized documents Yes No	0.89	0.32	Yes

Assessing the use of ICT in preventing corruption

No response			
Awareness training on anti corruption Yes No	0.71	0.46	Yes
Effect of seminars in reducing corruption Yes No No response	0.56	0.51	Yes
Centre having Anti Corruption Committee Yes No Don't know	1.14	0.44	Yes
Use of Anti Corruption box More than five times Between one and five times Never	0.28	0.53	Never
Confidence in KARI Administration to maintain confidentiality and protect person reporting corruption Yes No Not sure	1.07	0.92	Yes
Would respondent bribe auditor? Yes No	0.14	0.35	No
Law relating to corruption applied Equally to all Favours poor Favours rich No response	1.36	0.95	Favours poor

Assessing the use of ICT in preventing corruption

The respondents were questioned on their computer literacy levels and it was found that 37.9% were very competent, 51.7% were moderately competent and 10.3% were not computer literate. 34.4% of the respondents use some form of ICT in procurement while 65.5% did not. 31% of the respondents were of the opinion that ICT increases speed and reduces cost of procurement to a great extent, 31% thought ICT helped to a moderate extent, 13.8% thought ICT would help only to a little extent and 17.2% thought it would not help at all. On whether ICT would serve to reduce corruption, 20.7% were of the opinion that it would reduce corruption to a very great extent, 24.1% to a great extent, 41.4% to a moderate extent, 10.3% to a little extent, and 3.4% were of the opinion that ICT would not help reduce corruption at all.

Table 4 Assessing use of ICT in preventing corruption (n=29)

Variable	Frequency	Percentage
Computer literacy Very competent Moderately competent Not competent	11 15 3	37.9 51.7 10.3
Use of ICT in procurement Yes No	10 19	34.4 65.5
ICT improving speed of procurement and reducing cost To a great extent To a moderate extent To little extent not at all No response	9 9 4 5 2	31.0 31.0 13.8 17.2 6.9
ICT would reduce corruption Very great extent Great extent Moderate extent Little extent Not at all	6 7 12 3 1	20.7 24.1 41.4 10.3 3.4

Table 5 Mean scores for questions on usefulness of ICT in preventing corruption (n=29)

Variable	Mean	Standard deviation	Interpretation Yes/No
Computer literacy Very competent Moderately competent Not competent	1.28	0.65	Moderately competent
Use of ICT in procurement Yes No	0.34	0.48	No
ICT improving speed of procurement and reducing cost To a great extent To a moderate extent To little extent not at all No response	1.44	0.97	To little extent
ICT would reduce corruption Very great extent Great extent Moderate extent Little extent Not at all	2.52	1.06	Great extent

Correlation analysis

In this section, the researcher intended to establish the relation between various underlying elements of prevalence and impact of corruption based on the responses of the respondents. The researcher came up with three key elements deemed useful in measuring prevalence and impact of corruption. These elements include assessing the adequacy of audits, and use of ICT. The most effective way to establish a relationship is to come up with a correlation analysis and measure linear association between the two scale variables

Correlation between use of audit and prevention of corruption

The objective of this subsection was to assess if existing audit capacity has an effect on eradication of corruption. The researcher used 10 key variables and the results are as indicated in table 4.8 below. The correlation analysis shows there is a positive correlation between eradication of corruption and having an internal auditor (0.00), external auditor visiting (0.00) , use of serialized documents (0.00),awareness training on corruption (0.023), effect of seminars on corruption (0.564), having an anticorruption committee (0.00), use of anti corruption boxes (0.00), confidentiality and protection of people reporting corruption to KARI administration (0.166), bribery of auditors (0.00), and application of law on corruption(0.059).

Table 6 Correlation between use of audit and prevention of corruption (n=29)

Variable	Chi-Square	df	Sig
1) Do you have an internal auditor in your Centre?	14.286	1	0.000
2) How often do external auditors visit your centre to audit records and systems in procurement and related departments?	26.643	2	0.000
3) Do you use serialized documents to help in tracking and tracing of documents in your Centre?	16.333	1	0.000
4) Have you undergone any awareness training on anti-corruption in your Centre?	5.143	1	0.023
5) Do you think that seminars on corruption prevention have had an impact in reducing corruption in your Centre and KARI in general?	0.333	1	0.564
6) Do you have an anti corruption committee in your Centre	28.414	2	0.000
7) How often have you used the anti corruption box, if any, in your Centre	24.897	2	0.000
8) Do you feel confident that if you gave information on corruption to the KARI administration, it would be handled confidentially and your identity and job protected?	3.586	2	0.166
9) If auditors came to your centre and found a lot of discrepancies, would you bribe them to write an unqualified report?	15.207	1	0.000
10) In your opinion, the law relating to corruption is applied	3.571	1	0.059

Based on some of the factors above, the researcher sought to find out how various aspects affect the effort to eradicate corruption. It was noted that all three elements under investigation had a significant influence on the success or failure of the fight against corruption. This was based on the responses from the respondents. The researcher had specific objectives which will be examined by the research.

between use of ICT and prevention of corruption

The objective of this subsection was to assess if use of ICT has an effect on eradication of corruption. The researcher used 4 key variables and the results are as indicated in table 4.9 below. The correlation analysis shows there is a positive correlation between eradication of corruption and computer literacy (0.021), availability of ICT (0.095), use of ICT to reduce costs and speed up transactions (0.380), use of ICT to reduce corruption (0.016).

Table 7 Correlation between use of ICT and prevention of corruption (n=29)

Variable	Chi-Square	df	p-value
11) Are you computer literate?	7.724	2	0.021
12) Does your centre use an Information Communication Technology to transact procurement and other business?	2.793	1	0.095
13) On the assumption that your Centre uses ICT to transact procurement transactions, this affects the speed and cost of procurement	3.074	3	0.380
14) In your opinion, to what extent would ICT serve to reduce corruption in procurement in your centre?	12.207	4	0.016

Discussion of findings

The purpose of the study was to establish the prevalence and impact of corruption in public procurement with a view to coming up with recommendations on how to eradicate the vice in the Kenya Agricultural Research Institute in particular and in public procuring entities in general.

Based on some of the factors above, the researcher sought to find out how various aspects affect the effort to eradicate corruption. It was noted that all three elements under investigation had a significant influence on the success or failure of the fight against corruption. This was based on the responses from the respondents. The researcher had specific objectives which will be examined by the research.

To determine capacity of audits to prevent corruption in KARI

The results of the study under this objective are as shown in table 4.2. Majority of the respondents (82.8%) said they do not have internal auditors in their Centres and that external auditors visit only once a year (75.9%). There is widespread use of serialized documents which help in tracking and tracing of transactions according to 82.8% of the respondents. 69% of the respondents have undergone awareness training on corruption but 27.6% had not. More than half of the respondents' 51.7% said that seminars on corruption had an impact in reducing corruption while 41.4% thought the seminars had no impact. While 79.3% of the respondents said they had anti-corruption committees in their Centres, 75.9% of the respondents had never used anticorruption boxes set up in their Centres. When asked whether they had confidence that information on corruption passed to KARI Administration would be handled confidentially and their jobs and identities protected, 17.2% said they were confident, 37.9% said they had no confidence, and 44.8% said they were not sure. Most of the respondents 86.2% said they would not bribe auditors to write an unqualified report. 65.5% said that the law relating to corruption was applied in

a manner to favour the rich, while 31% were of the opinion that the law was applied equally to all. The researcher sought to establish if there was a relationship among the variables and the extent to which the respondents thought that the war on corruption had been effectively carried out. The correlation showed that there was a positive correlation between corruption prevention and awareness training on corruption (0.023), and with seminars on anti corruption (0.564). This means that those variables with a positive correlation had an effect on the fight against corruption.

The Results showed that there was some statistical significance in the opinions of the respondents given that the correlation was significant at the 0.05 level and some of the variables had a P value (sig) of greater than 0.05

Regression Analysis

The researcher conducted a multiple regression analysis. This was done to test the relationship among the independent variables. The Statistical Package of Social Sciences (SPSS) was applied to code, enter and compute the measurements of the multiple regressions of the study

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.537	.288	.203	.313

Coefficient of determination explains the extent to which changes in the dependant variable can be explained by the change in the independent variables or percentage variation in the dependent variable, which is, prevalence of corruption in public procurement, that is explained by all the two independent variables, adequacy of audit and use of ICT

The three independent variables that were studied explain only 28.8% of the challenge facing the fight against corruption in KARI as represented by R^2. This therefore means that the other challenges not stated in the research contribute to 71.2% of the challenges facing the fight against corruption in KARI. Therefore further research should be conducted to investigate the other challenges (71.2%) in KARI.

ANOVAª

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.994	2	.331	3.376	.034
	Residual	2.454	26	.098		
	Total	3.448	28			

Predictors: (Constant) Adequacy of audits and Use of ICT.

Dependant variable: Prevalence of corruption in public procurement.

The significance value is 0.034 which is less than 0.05 thus the model is statistically significant in predicting how adequacy of audits, use of ICT and efficient use of resources can be used to eradicate corruption. The F critical at 5% level of significance was 3.376. Since F calculated is greater than F Critical, this shows that the overall model was significant.

Table 9 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.625	.363		-1.723	.097
Adequacy of audits	.006	.038	.027	.155	.878
Use of ICT	.111	.038	.492	2.888	.008

Dependant variable : Prevalence of corruption in public procurement

The researcher conducted a multiple regression analysis so as to explain the relationship between dependent and independent variables. The regression equation of the model was

$(Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + €)$ which resulted to

$Y = -0.625 + 0.006 X_1 + 0.111 X_2$

Where Y is the dependent variable (Corruption in public procurement), X_1 is the use of audits and X_2 is the use of ICT. According to the regression equation established, at 5% level of significance and 95% level of confidence, use of ICT had 0.008 level of significance and use of audits had 0.878 level of significance, hence the most significant factor is ICT Taking all other independent variables at zero, a unit increase in use of ICT will lead to a 0.008 increase of corruption eradication and a unit increase in use of audits will lead to a 0.878 increase in corruption eradication. This infers that use of ICT contributes more to corruption eradication in KARI.

SUMMARY OF THE FINDINGS

The study has revealed certain weaknesses that help propagate corruption in KARI and will be highlighted in this sub section.
It has been observed that majority of the Centres do not have internal auditors. This is a serious omission on the part of the KARI administration. Auditors help to curb corruption before it becomes serious. It was also noted that external auditors mostly visit KARI Centres once a year. This also increases the period within which errors, omissions and fraud may be detected. It was worthwhile to note that most Centres use serialized documents to assist in tracking and tracing of documents. Most of the respondents said they had undergone awareness training on corruption. However 79.3% of the respondents said that seminars on anticorruption had not served to reduce corruption in KARI. 75.9% of the respondents had never used the anticorruption box provided in their Centres. As gleaned from the study, only 17.2% of those interviewed said they had any confidence in the KARI administration to confidentially handle information given to it on corruption. This could be due to fear that the information may be passed on to the perpetrators of corruption who would end up threatening or even killing those who report them. It is even worse when it is the authorities to whom the crime is reported, who end up victimizing the whistle blower. Most of the respondents (65.5%) in their opinion thought that the law on corruption is applied in a manner to favour the rich.

Most of the respondents were computer literate but only a few of the Centres use ICT to transact procurement business. However, most of the respondents thought that the use of ICT would speed up transactions and reduce corruption.

CONCLUSION

In the study, some of the major causes of corruption in KARI and by extension, public procurement have been highlighted. Knowing the cause of a problem is a big step in beginning to solve the problem. Corruption has been a major drain on the resources of this country, Kenya. The people who are used to perpetrate these criminal activities are usually those in the public procurement departments. Procurement officers have at their disposal approximately 80% of organizations resources, and therefore most of the activities in any organization must involve them. They are involved in soliciting for tenders, award of contracts, receipt and issue of goods, custody of organizations' assets, and they also take part in the disposal of such assets.

RECOMMENDATIONS

KARI should take urgent measures to deal with all those causes of corruption as raised by the members of staff who were interviewed for this research study. These causes include; Lack of proper policy on promotions, unequal training opportunities and lack of funds for training, low remuneration increase in use of ICT and increase in audit staff and frequency of audits.

Staff members of procurement departments need to have a change of attitude whereby they should stop expecting to get rich without having to work for the wealth. People should not vilify those upright procurement officers who do not steal, or those who do not enrich themselves corruptly.

The K.A.C.C. and other organizations should step up their education campaign and also be seen to be effective in their work, given the fact that majority of respondents felt that the seminars on anti-corruption have not been effective in influencing behavior change. It should also be noted that 61.51% of the respondents felt that the law on corruption was not applied fairly but tended to favor the rich. This perception needs to change through fair prosecutions.

The KARI administration needs to create awareness about the existence of anti-corruption committees given that 13.79% of its employees are not even aware that these committees exist in the centers they work in. It also needs to encourage the 75.86% of staff who know that there are anti-corruption committees and anti-corruption boxes where reports on corruption can be deposited, but do not use these boxes or report cases to the committees. It is apparent from this study that 65.51% of the staff is aware that there are cases of corruption in KARI. Steps must be taken to curb the vice within the Institute.

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