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Public Procurement price variance in Kenya: extent, Drivers, and Proposed Mitigation

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ABSTRACT*: Developing economies, often dependent on donor funding and debt, such as Kenya could benefit from sealing budget leakages. Public procurement price variance is deemed a key inefficiency in public expenditure contributing to the loss of colossal amounts of Money. Mechanisms to achieve realistic public procurement prices are stipulated in the existing public procurement regulatory regime; However, Price variances, manifesting in inflated tenders, are abound. The extent and drivers are yet to be empirically examined. This study adopted an exploratory approach to examine the extent of public procurement price variance; by conducting variance analysis of market prices and prices of goods contained in procurement contracts of 336 public procuring entities (Ministries, Departments, and Agencies) in Kenya in the 2022/2023 Financial Year. Analysis of data drawn from a random sample of 40 MDAs, indicates that all items acquired by MDAs were overpriced: at between 20% and 220% of the market price. Analysis of drivers of overpricing ranked: "budgeted kickbacks/bribes"; "Response to Late Payments by MDAs"; "Collusive Bidding"; and "Over-use of non-competitive methods"; as key drivers. The study reviewed the price oversight mechanism of the public procurement system in Kenya and recommends the adoption of a live internal public procurement audit model to monitor and oversight pricing. This will require a review of the regulatory regime to entrench the internal procurement audit model into the public procurement process. The study also recommends a public procurement study to examine the extent and magnitude of procurement price variance across Kenya and its fiscal effect on the Economy.*

KEY WORDS: public procurement overpricing, procurement price variance, drivers of public procurement overpricing; internal procurement audit**.**

INTRODUCTION

Public procurement, also known as government procurement (OECD 2019) and often defined as the acquisition of goods, services, works, including livestock by public entities (ROK, 2021); is the largest single consumer in any economy due to their sheer size of expenditure (Hafsa, Darnall, & Bretscheneider, 2021) In OECD countries it is estimated that public procurement amounts to 12% of the GDP. This figure is even higher (up to 32%) in developing economies (OECD 2018). According to Bosio and Djankov (2020), public procurement globally was estimated to amount to USD 11 Trillion in 2018. In Kenya, public procurement is estimated to amount to 26% of the country's GDP. This makes public procurement a key economic activity in the global and local economy. Thus public procurement, dues to its sheer size, provides a perfect opportunity to pursue saving in public expenditure.

The role of public procurement has been described severally. Choi (2008) succinctly examines the roles of public procurement on various fronts including its contribution to national economy, promotion of social responsibility, promotion of industry innovation, and promotion of sustainability. Arrowsmith (2020) portends that governments use public procurement to offer public services (defense, infrastructure, public health, education), as well as indirect services (such as social protection) to its people. The role of public procurement in developing countries such as Kenya is more pronounced. In developing countries public infrastructure, particularly transport and water infrastructure has faced years of neglect. This coupled with a fast growing population, leads to heightened demand for basic infrastructure such as water and roads. Public procurement is seen as a facilitator of these kinds of works (TI 2014). In recession and pandemics such as the Covid 19 pandemic of 2019, governments has used procurement to spur economic growth and mitigate negative effects of pandemics (Sanchez, 2020).

Given the sheer size of public procurement, most nations of the world, including Kenya, have anchored procurement in a legislative framework. According to Bosio and Djankov (2019), this was informed by the model procurement regulations provided by the United Nations in 1994. In Kenya, the Public Procurement and Asset Disposal act, 2015, and related legislation, provide procedure for efficient public procurement and asset disposal on the principles of fairness, equity, transparency, competitiveness, and cost effectiveness as dictated by the constitution of Kenya 2010. However, Procurement price variance, the difference between the standard price of a purchased item and its actual price, continues to manifests in overpricing of public contract across the globe (Ochrana & Stehlik 2015; Placek et al 2019; Darby & Wright 2020, KLR 2018) which has led governments to institute legislative and institutional measures aimed at improving procurement efficiency. Procurement price variance leads to wastage of public resources and hampers service delivery; and is often an indicator of underlying inefficiencies in the public procurement process such as fraud and corruption (Esaamlg 2019)

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Statement of the Problem

In Kenya, various measures have been put in place to achieve realistic public procurement prices. The Public Procurement Regulatory Authority (PPRA) informed by periodic scientific survey of prices of commonly procured items, specifications and unit of purchase, prepares and publishes a price list to inform public procuring entities of prevailing market prices (PPRA, 2020) Additionally, various measures have been put in place including: promoting use of E-procurement, public contract information on public tender portal, and promoting competition in the public procurement process by enforcing adherence of the Public Procurement and Asset Disposal act 2015, and related regulation (Korir & Moronge 2017). Cases of procurement overpricing in the public procurement process are none- the-less abound.

For instance, the Kenya Medical Supplies Agency (KEMSA) was involved in a KES 7.8Billion procurement scandal that largely involved overpricing estimated at have led to loss of KES 39 Million by office of the Auditor general OAG (2020). The Ethics and Anti-Corruption Commission, in a civil proceeding against suppliers of the National Youth Service, established up-to 550% price inflation of items in the tenders that led to loss of approximately KES 37Million (KLR, 2018). Other prominent cases of tender price inflation include: the KES 2 Billion Smart plate tender (PPARB), and the Police choppers tender inflated by KES 1Billion (Mutai, 2017). It is generally viewed that price variance, manifested in price inflation is fraudulently planned for during procurement planning; which ultimately leads to loss of colossal amounts of public money. Empirically, the extent and drivers, to inform policy to manage this phenomenon especially in bundled contracts; has not been examined using Kenya’s public procurement data. This study thus sought to examine the concept of Public procurement price variance in Kenya with a view of proposing mitigations to the price variance.

Research Objectives

The objectives of this study will be:

1. To examine the extent of public procurement price variance of commonly procured items in Kenya.
2. To rank the drivers of public procurement price variance of commonly procured items in Kenya.
3. To propose mitigation that could remedy the phenomenon of public procurement price variance.

Research Questions

1. What is the extent of public procurement price variance of commonly procured items in Kenya?
2. What is the rank of the drivers of public procurement price variance of commonly procured items in Kenya?
3. How can public procurement price variance of commonly procured items in Kenya be mitigated?

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LITERATURE REVIEW

Theoretical and Empirical Review: Price Theory and Public Procurement Price Variance

This study draws interest in public procurement price variance from the basics of the price theory, as described by Weber (2012). The micro-economic theory explains the mechanisms of setting market price at which economic agents exchange goods and services. The theory places premium on the interaction of the forces of demand and supply in the setting of market prices. As postulated by Weyl (2019) the price theory dictates that a market price for goods and services is achieved when "the amount of goods supply meets the demand of consumers and when the price offered by consumers meet the marginal cost of production". In essence the theory explains the relationship between production, allocation, consumption and pricing of goods and services. The theory further avers that the market price is subject to changes in demand and supply and as such is dynamic (Weber 2012); Nevertheless, at any given time, consumers are assumed to be price takers of available goods and services as given. This theory thus arouses interest into the variance between the market price (as set by the interplay between demand and supply forces) and the price at which procuring entities (consumers and firms who are assumed to be market price takers) acquire goods and services.

Empirical investigation into public procurement price variance is almost nonexistent. However, related empirical analysis has been done on pricing in procurement contracts. For instance Ochrana and Stehlik (2015) investigates the purpose for overpricing of public procurement for construction works in the Czech Republic. The study examines two factors influencing final contract price: level of competition and level of transparency. According to the study additional bids leads to decrease in final contract price. Thus a lower contract price results from enhanced supplier participation in bidding. Similar findings are espoused by Nemek, Kubak, Krapek and Horejova (2020) in the Czech and Slovak health care systems. Placek et al (2019) analyzes the issue of overpricing of public procurement in 11 low-performing central and Eastern European countries. A hierarchical regression reveals that institutional factors have greater impact on overpricing than individual decisions by contracting authorities. Similar findings are espoused by Nemek, Kubak, Krapek and Horejova (2020) in the Czech and Slovak health care systems

These studies offer plausible solution onto one aspect of this study; that increasing competition contributes to reduction in final contract price. Extant empirical investigation however neglects to provide explanation on the issue of public procurement variances, in-terms of extent and causes; particularly in the Kenyan context, where there is indication of massive, seemingly generally accepted overpricing of public procurement contracts. In light of this observation, it is necessary to investigate the magnitude of public procurement price variance, and the causes of price variance in public procurement sector; and examine probable mitigations for public procurement price variance to contribute towards sealing leakages of public finances.

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RESEARCH METHODOLOGY

The study adopted a descriptive research design using and exploratory approach to describe the extent and drivers of procurement price variance in Kenya; a concept that is yet to be empirically tested using data from public procuring entities in Kenya. The study derived a population from the list of Government Ministries, Departments and Agencies (MDAs) that consists of 336 institutions. The list is derived from performance contract reports of the National Government. The link to the report is provided in Appendix 1. For this exploratory study, a sample of 50 MDAs was randomly selected; representing 15% of the population as recommended by Ward (2020) for exploratory studies. Through phone interviews, emails, and use of questionnaires, prices of 12 commonly purchased items were sought from the public procuring entities. The unit of observation was procurement officers in the procuring entities. The year of reference was the 2022/2023 financial year.

Concurrently, a market price list for these items was sought through a market survey in various towns such as Nairobi, Mombasa, Nakuru, Eldoret, Kisii, and Nyeri- this was used to generate a list of average prices of the commodities in the year 2022/2023. Comparison of the public procurement prices with the prices of the market prices of the items constituted the Procurement Price Variance analysis. The study also asked respondents to rank four proposed drivers of Public Procurement Price Variance.

Analysis and Discussion

Response Rate

The study sought data from 50 public procuring entities. However, public procurement prices were only received from 36 procuring entities. This represents a response rate of 72% which is deemed sufficient in Holtom et al (2022) for statistical analysis. Most of the non-response are deemed to have resulted from fear of scrutiny the procurement processes among many of the respondents

Results of Analysis of Variance between Public Procurement Prices and Market Prices

The study applied the formula for calculating Procurement Price Variance:

PPV=<u>Set Price-Actual Price/Set Price*100:</u>

Where: Set Price= Market Price (Set by Market forces); Actual Price= Prices of items acquired by Public procuring entities.

The study established that all the items had a positive variance of between 20% and 220% as shown in the Figure 1. This means that public procuring entities in the study, purchased at prices substantially above market prices. This seems to support the thesis that the public procuring entities in Kenya purchase overpriced commodities. Analysis of the variance shows that low cost items (such as Biro, Envelopes, and Blank Compact Disks) seem to have the highest level of variance as compared to more expensive items (such as toners, and cement).

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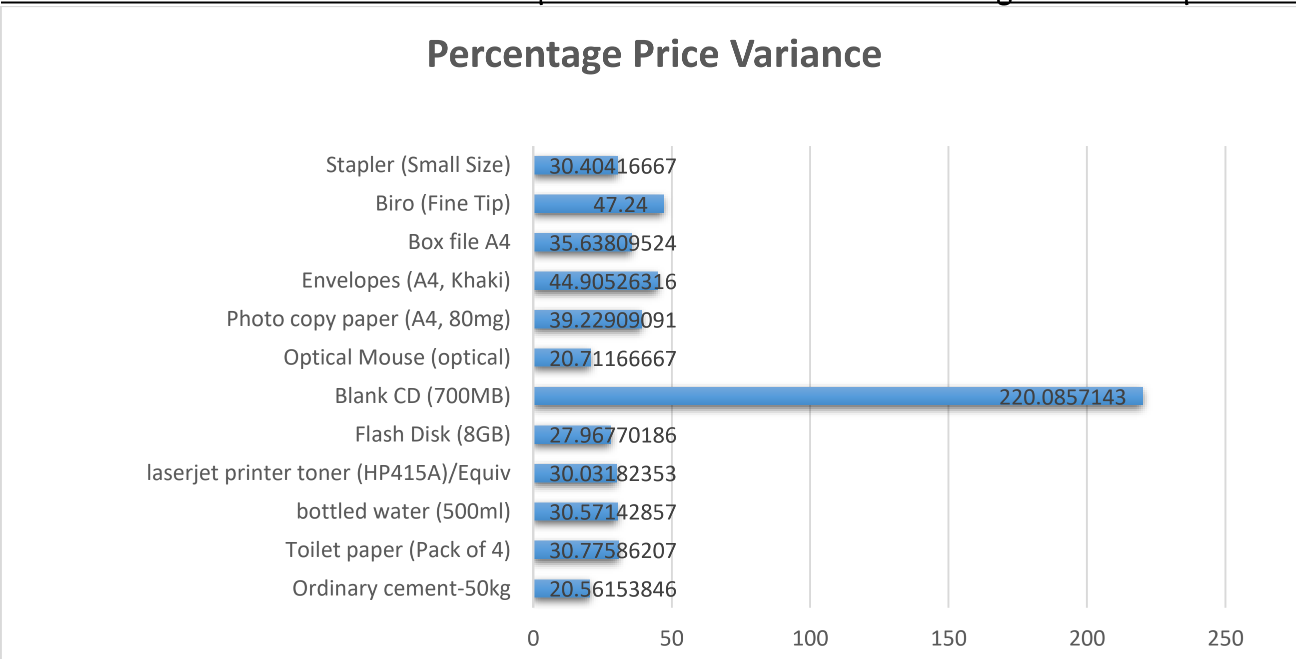

Figure 1: Percentage Variance of Public Procurement Price.

These findings agree with findings of Ligeti (2019) who established up-to 25% overpricing in public procurement contracts. There is also consensus in public procurement literature (OECD, 2016; & World Bank, 2013) that up-to 30% of procurement expenditure is lost in procurement irregularities such as overpricing such as is being depicted in the analysis above. These findings imply a general deviation by public procuring entities in Kenya, from the principles of Public Procurement and Public Financial Management as set out in the Constitution of Kenya, 2010 (Article 227), Public Procurement and Asset Disposal act, 2015, and related legislation, that provide procedure for efficient public procurement and asset disposal on the principles of fairness, equity, transparency, competitiveness, and cost effectiveness. Therefore, based on the findings of this exploratory study, there is indication that public procurement price variance is widespread and is inhibiting the achievement of the objective of "Value for Money" in the public Procurement processes in Kenya. The overpriced amount could have economic impact if allocated appropriately.

Rank Analysis of Causes of Public Procurement Price Variance

To investigate the causes of procurement price variance, the study asked respondents-procurement officers in the public procurement process-to rank probable causes of procurement price variance including: budgeted kickbacks, Collusive bidding (cover bidding, bid suppression, bid rotation, market allocation), poor procurement planning leading to over budgeting, influence by external actors in decision making, conflict of interest of in the approval process, response to delayed payment of invoices by procuring entities as identified in various literature (OECD, 2013, OECD, 2015; OECD, 2014 & Wells

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2014). The study relied on the Friedman's Test to examine how the 36 procurement officers rate the four different drivers of procurement price variance (overpricing); to answer the Question whether any of the causes are consistently ranked higher than the others. The results of the analysis are shown in the Table 1.

Item	Mean Rank
Late payment by PPEs	1.54
Cover for kickbacks	1.51
Collusive Bidding	2.94
Overused none competitive procurement methods	4.00

Chi-Square:93.969, df: 3, Asymp. Sig: .000

Table 1: Friedman's Rank Analysis

The results show that: kickback embedded in the prices, and Response to late payment by public procuring entities; are highly ranked drivers of public procurement overpricing (Public procurement price variance). Collusive biddings and over-use of non-competitive methods rank 3rd and 4th respectively. According to the analysis, all are valid drivers of public procurement price variance. These findings support Knack et al (2017) study in 88 developing countries that found that bribery and kickbacks, common forms of procurement irregularity, often manifests in overpriced procurement contracts. The findings imply that bribes and kickbacks in the procurement process could be embedded in the procurement planning stage; and that the market prices index mechanism to control the price by the Public Procurement Regulatory Authority is not functioning as intended (PPRA, 2022).

On collusive bidding and non-competitive methods, The World Bank (2017) similarly noted that these are common forms of malpractice that results in loss of public funds. The findings of this study indicate that in the public procurement of any item, the loss of public funds amounts to between 20% and 220% of the value of that item. This means thus that the driver of public funds in the Kenyan procurement system are: in many procurement systems: Kickbacks/bribes embedded into the procurement process; overpricing of goods sold to public procuring entities as a response to late payment; collusive bidding and use of non-competitive methods.

Proposed Mitigation-Internal Procurement Audit

The study, based on prevalent overpricing in the public procurement process; and informed by analysis of the drivers of overpricing in public procurement; proposes adoption of procurement audit in key areas, as outlined in the sections below, as a measure for improving the procurement system; that could reduce instances and magnitude of price variance.

Internal Procurement Audit.

The study recommends embedding of procurement audit within the procurement process; as a measure to enhance transparency of the procurement process; monitor prices, and improve oversight and control. The occurrence of the overpricing in Public procurement has been linked to Kickbacks/bribes embedded

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into the procurement process; overpricing of goods sold to public procuring entities as a response to late payment; collusive bidding and use of non-competitive methods. As postulated in Okoth (2024) procurement audit is a management tool designed to evaluate functional performance of procurement against set procurement objectives. Procurement audit assesses procurement process against set policies and procedures to identify gaps, and weaknesses of the system that could lead to inefficiencies such as errors, fraud, and other gaps. Therefore Procurement Audit embedded into the public procurement process could alleviate the instances and magnitude of procurement price variance through the following mechanisms:

a) Audit of the Procurement plan (Before Approval)

This would help uncover overpriced estimates that are used as inputs into the budgetary process of public procuring entities. Often, audit of budgets have unearthed fraud and corruption, such as reported in Abuso (2023) where audit determined public officers payroll budget to be over three times the salaries of some state officers. This study avers that Pre-Approval Audit of Procurement plan could unearth overpricing; motivate preparation of realistic procurement plans (guided by Market prices); which will in-turn contribute to a realistic budget for public procuring entities.

b) Audit of Procurement Prices- (Pre-Contracting)

In Kenya, the Public Procurement and Asset Disposal Act no. 33 of 2015, in part 43 provides that “the Authority (Public Procurement Regulatory Authority) shall conduct procurement audits during the tender preparation, contract audit in the course of execution of an awarded tender; and performance audit after the completion of the contract in respect of any procurement or asset disposal as may be required” (PPRA, 2024). This however does not empower internal and ongoing audit of live procurement processes which hold better chance of stopping overpricing- driven by kickbacks/ or intentional overpricing by suppliers as a response to late payment-: than post procurement award audits envisaged by the act. The instances of overpricing could be arrested real-time by subjecting Local Purchase Orders, Contracts, and similar documents to internal procurement audit to ascertain that overpricing is not manifesting in the contracts. Notably, part 54 of the PPADA no 33 of 2015 provides stipulations on purchasing at prevailing Market prices; empowers head of the procurement function to carry out market surveys to inform decision making; preparation of cost book; and release of a quarterly market price index by the Public Procurement Regulatory Authority {PPADA 2015 (Revised 2022) }. The Act does not however provide a mechanism to enforce price conformance-even if a market price index is provided; or even if a survey is made of prevailing market prices. Evidence adduced by this study shows consistent overpricing indicating a lapse in the mechanism to oversight and control pricing. Therefore this study proposes the adoption of live internal procurement audit to monitor prices being contracted by procuring authorities. Further, and worryingly, a notable lapse in price monitoring exists within the public procurement regulatory authority- The Authority, as per information posted on their website: https://ppra.go.ke/market-price-index/, has not released any Market price index since July 2021.

c) Procurement Process Audit

Gatari et al (2023) asserts that the law is very assertive on conditions for use of various procurement methods. Whilst preference is the use of open tendering; the procurement regulatory framework provides

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conditions for use of other methods subject to fulfillment of certain conditions. None the less, the findings of this study seem to suggest that overuse of non-competitive Methods occurs. Further, keen review of the public procurement regulatory framework has also not established a framework for ascertaining that the conditions for use of the methods are satisfied. Therefore this study recommends a mandatory pre contract award audit; to ascertain application and conformance to the procurement laws of the country; as well as detect other anomalies in the procurement process. This will act as deterrence to over-use of non-competitive methods of procurement as well as other anomalies such as collusive bidding and other irregularities that drive overpricing; and hence loss of public funds.

Procurement Audit Model

The procurement audit proposed above could be summarized as an Internal Procurement Audit Model (IPAM) that entails: Procurement Plan Audit; Procurement Price Audit; and Procurement Process Audit; aimed at improving the procurement system so as to reduce instances and magnitude of price variance. The model could be depicted as shown in figure 2.

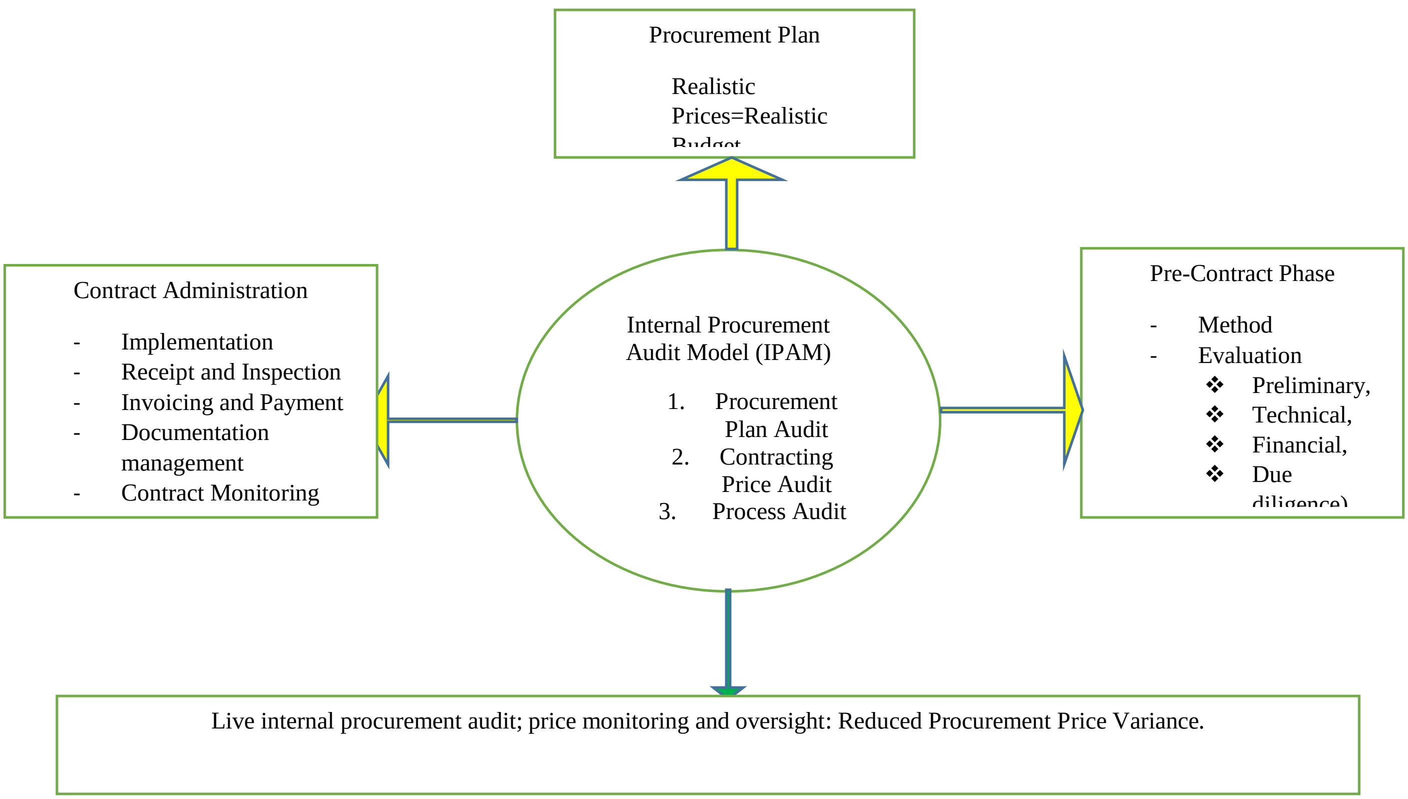

Figure 2: The Proposed Live Internal Procurement Audit Model

The Model shows key aspects of internal audit necessary for public procurement processes to attain value for money; through reduction of instances of budgeted kickbacks/bribes; Deliberate overpricing by suppliers, Collusive Bidding and Overuse of non-Competitive Methods of Procurement.

Implication to Practice and Research.

The study proposes application of internal procurement audit at key points in the procurement process: 1. at the procurement planning stage; 2. before formalization of supply contracts/LPOs/LSOs 3. Internal ongoing audit of each procurement proceeding. This is based on the realization that the public procurement regulatory framework stipulates the pricing mechanism; but fails to specify a monitoring and compliance mechanism to achieve proper pricing. The regulatory framework also provides for audit; especially after completion of proceedings; but fails to apply audit as a monitoring and compliance mechanism of live procurement proceedings. This study therefore recommends the adoption of the Internal Procurement Audit Model in the Public Procurement process to monitor, and oversight prices at which procuring entities acquired goods. It's envisaged, the use of this model will result in achievement of value for money through reduced overpricing; and better allocation of public resources.

The study further recommends to the National Treasury, and the Public Procurement Regulatory Authority in Kenya (the two bodies central to the designing and implementation of the public procurement system) to review the regulatory framework; to introduce and entrench the internal procurement audit mechanism; as a management tool to enhance compliance at entity level; and thus contribute towards the achievement of the objectives of the public procurement system in Kenya. Additionally, this study provides evidence, from empirical analysis, of the existence and prevalence of procurement price variance; manifesting in overpriced acquisition of items by procuring entities in Kenya. This could be a foundation into exploration and analysis of this concept within the Kenyan Context and other jurisdictions.

CONCLUSION

This study set out to examine the extent of procurement price variance in the Kenyan public procurement system; the drivers of public procurement price variance; and to propose mitigation to minimize instance and magnitude of public procurement price variance. The study established a significant price variance of 12 commonly procured items in all public procuring entities; of 20% to 220% above the market price. This could imply that a significant portion of public funds is lost through overpricing. This resource could have economic impact if these resources were allocated in a better manner. This places premium on the measures that could reduce the magnitude and instance of the procurement overpricing in public entities. Understanding the drivers of public procurement overpricing is paramount towards this end. The study established that: "Kickbacks/bribes embedded in prices and overpricing as a response to late payment" are highly ranked as key drivers of procurement overpricing. Other drivers of overpricing include collusive bidding and use of non-competitive methods of procurement. This study places the oversight and control of contracted prices at a central point in the control of over pricing in procurement.

Future Research

The study established a generalized and substantial overpricing of 12 items commonly procured by public procuring entities, and ranked 4 drivers of the over-pricing derived from literature. The study invites researchers to conducted a wider study including more procuring entities and deeper in scope to include more items; specifically: bundled contracts; construction items; and other less common procurement items to establish the prevalence of procurement price variance and its fiscal and economic effect. Further, this study invites researchers and academicians to examine other drivers of procurement price overpricing. Additionally, this study invites researchers to implement and review the mitigation proposed in this study; and propose other mitigations that could alleviate the public procurement overpricing.

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