

# Aspects of Procurement Reforms that Influence Expenditure Management in Public Secondary Schools in Kenya: A Focus on Emergency Procurement

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## Abstract

The Kenyan public procurement sector has gone through colossal reforms, which were ignited by findings of country procurement assessment reports of 1986 and 1997; and hallmarked by formulation of the Procurement Regulations in 2001. This study aimed at establishing the extent to which public secondary schools in Nairobi City County had complied with relevant legislative provisions guiding procurement reforms, as well as the effect of selected aspects of reforms on expenditure management. The article focuses on one aspect of reforms, namely, frequency of emergency procurement. The evaluation research model III guided the research process and primary data were sourced in 2015 from 35 public secondary schools. Quantitative analysis included cross-tabulation with analysis of variance, chi-square statistic, correlation coefficient, as well as multiple regression. About two-thirds of the schools had developed procurement plans, as required by the legislative and policy provisions; while another two-thirds 'occasionally' practised emergency procurement. Besides, the frequency of emergency procurement significantly correlated with variation in procurement expenditure; and further caused a significant increment in procurement expenditure (beta weight = 0.457, t-statistic = 3.240 & p-value = 0.003), which signifies a negative influence on expenditure management. Limiting the frequency of emergency procurement is an important step towards effective expenditure management in public secondary schools.

**Keywords:** public procurement, reforms, expenditure management, emergency procurement, secondary school

## 1. Introduction

Public procurement is the acquisition by purchase, rental, lease, hire, license, tenancy, franchise or by any other contractual means of any type of goods, services, and works, by public institutions using public resources, as well as disposal of public assets (Kenya Anti-Corruption Commission [KACC] & Public Procurement Oversight Authority [PPOA], 2009). Public procurement is the main process through which government spends public money; thus, making it central to expenditure management and national development. Through public procurement, circa 60% of government revenue is injected into the economy, which in turn, creates employment opportunities and improves per capita income (Organisation for Economic Cooperation and Development [OECD], 2001).

Notably, public procurement plays a greater role in developing countries, where the value of procurement expenditure ranges between 9% and 13% of national Gross Domestic Products (GDP), than it does in developed nations, where the value varies between 5% and 8% of the national GDP. In Kenya, the value of public procurement accounts for about 10% of the GDP, making it a large market for suppliers and contractors, albeit with high opportunities for corruption (Kavula, Kalai & Migosi, 2014; KACC & PPOA, 2009). In addition, public procurement is categorised into contestable and non-contestable. Whereas, contestable procurement is subject to competitive bidding, non-contestable procurement is often single-sourced (Kenya Institute of Public Policy and Research [KIPPRA], 2006; Trionfetti, 2000). In Kenya, contestable public procurement forms about 35% of the total public expenditure, making it the single biggest item of public spending, ahead of salaries and

wages (Kavula et al., 2014; KIPPRA, 2006).

The Kenyan public procurement sector has developed over the years since the time of independence in 1963. In the first decade of independence, public procurement was predominantly undertaken by external agencies due to inadequacy of supplies and competent suppliers in the local market. But as the economy expanded, procurement responsibilities passed down to ministries, leading to the establishment of supplies offices in each ministry in 1974. However, the system was faulted for not addressing the needs of decentralised government units, particularly at the then provincial and district levels; and for lacking an effective legislative framework, which made it vulnerable to irregularities, such as designing tender documents to favour particular bidders, fixing and inflating prices, leading to wastage of public resources (KIPPRA, 2006; Basheka, 2006; Aketch, 2005; OECD, 2001).

In view of the stated challenges, procurement reforms process were initiated in Kenya in response to pressure from local and international stakeholders, including the World Bank, the International Monetary Fund (IMF), African Development Bank (ADB) and the International Trade Centre (ITC), among others (Aketch, 2005; Odhiambo & Kamau, 2003). Even though peace-meal reforms started way back in 1980s through to the 1990s, following findings of country procurement assessment reports of 1986 and 1997, formulation of the Exchequer and Audit Regulations (Procurement Regulations) in 2001, remains the most crucial turning point of procurement reforms in Kenya. Before the Procurement Regulations were formulated in 2001, public procurement in Kenya was carried out under unclear legislative frameworks, which in turn, failed to curb irregularities and regulate public expenditure.

The Procurement Regulations requires public institutions to: use standard tender documents, operate within set thresholds, ensure that technical specifications meet international standards and that all bidders are treated equally irrespective of race, religion or nationality (Government of Kenya, 2001). Additional hallmarks of the Procurement Regulations include the need for all tenders to be advertised widely in the print media, professional qualifications of bidders, effective record keeping, transparency in opening tenders, tender evaluation reporting, confidentiality of tender evaluation processes, as well as procurement planning and regulation of emergency procurement, among others.

Regarding institutional structures, the Procurement Regulations established the Directorate of Public Procurement (DPP) within Treasury to primarily streamline procurement activities through policy formulation, implementation, and capacity development; Public Procurement Complaints Review and Appeals Board (PPCRAB), which has since been renamed as PPOA, to oversee procurement activities and adjudicate over complaints; as well as institutional tender committees to manage procurement of goods, services and works within public institutions, including secondary schools (Kavula et al., 2014; KIPPRA, 2006; Aketch, 2005; Government of Kenya, 2001).

Section 10 (1) of the Procurement Act requires all procuring entities to establish tender committees, in a manner that is set out in the Second Schedule. Tender committees are obligated to perform the functions listed under sub-section 2 (a) to (o), which include reviewing, verifying and ascertaining that all procurement and disposal activities are in line with provisions of the Act, Procurement Regulations, and tender documents (Government of Kenya, 2010; 2006). With the context of public schools, Part 7 of the Second Schedule (the Procurement Regulations) requires school tender to have a membership of at least six heads of departments or members of the teaching staff, including the Matron or officer-in-charge of the boarding facilities, where applicable appointed by the Principal, who in this study is referred to as the accounting officer (Government of Kenya, 2006).

The Ministry of Education embarked on measures to entrench provisions of the Procurement Regulations in academic institutions in 2002 to improve efficiency of procurement practices; thus, enable schools manage expenditure and utilise public resources judiciously (Embeli Iravo, Biraori & Wamalwa, 2014). In this regard, circulars were sent to all public secondary schools, directing them to follow the new regulations to improve procurement practices and procedures. The new measures included establishment of school tender committees, training members of such committees, as well as principals, deputy principals, and staff directly involved in procurement activities. In 2002, initial training workshops targeting principals and deputy principals of national and the then provincial schools were organised by the DPP, with support from the Treasury (Kavula et al., 2014).

Between 2002 and 2008, the Procurement Regulations went through various amendments, which were considered necessary to initiate and sustain the reform agenda in all public sectors. For instance, in 2002, the Procurement Regulations were amended to align with the needs of various public sectors (Kavula et al., 2014). In 2003, the Public Procurement and Disposal Bill was drafted, debated, and enacted in 2005 to provide the requisite legislative framework. In 2006, the Procurement Regulations was revised further and operated in 2007

in tandem with the Public Procurement Act, through the Legislative Notice No.174 of January 2007 (Kavula et al., 2014). In the education sector, the Procurement Regulations and the Procurement Act are domiciled by the Public Procurement Manual for Schools and Colleges 2010 (Procurement Manual). The three instruments provide the primary legislative and policy frameworks for reforming procurement practices and managing procurement expenditure in public secondary schools. One aspect of procurement practices that the legislative and policy frameworks seek to reform in order to improve expenditure management is the aspect of emergency procurement.

Emergency procurement is provided for in the legislative and policy frameworks under exceptional circumstances within the context of “urgent need” as defined in Part I, Section 3 (1) of the Procurement Act. In this regard, “urgent need” refers to a circumstance of imminent or actual threat to public health, welfare, safety, or damage to property, such that engaging in tendering procedures or other procurement methods would not be practicable (Government of Kenya, 2010). The Procurement Manual prescribes various measures that should be instituted to manage the application of emergency procurement provisions, including using business continuity planning, as a criterion for registration or pre-qualification of potential suppliers; and formulating procurement plans, which should include contingency planning for real emergency situations, as defined in Part I, Section 3 (1) of the Procurement Act (PPOA, 2009).

Furthermore, Section 26 (3) of the Procurement Act, as read together with Sections 20 and 21 of the Procurement Regulations, as well as Sections 6.1 and 6.2 of the Procurement Manual, make procurement planning mandatory for procuring entities to facilitate identification of each requirement, user(s), budget, procurement method and schedule of various activities in the procurement process and timeliness. Procurement plans must be integrated in the procuring entity’s budget and approved by institutional decision-making organs before being operationalised (KACC & PPOA, 2009).

Even though the Government of Kenya has provided necessary legislative and policy frameworks to guide procurement reforms in all public institutions, only a few studies have explored the extent to which public secondary schools across the country have complied with provisions of the Procurement Act, Procurement Regulations and Procurement Manual. For instance, a study commissioned by the Ministry of Education in 2006 revealed that more than half of secondary schools did not adhere to provisions of legislative and policy frameworks in their tendering processes. As a result, there was rampant corruption particularly at the administration and board levels with regard to procurement of school equipment, learning materials, supplies, and hiring of both teaching and non-teaching staff (Institute of Policy Analysis and Research [IPAR], 2007). The study underscored the inadequacy of literature on governance and expenditure management in public secondary schools; as well as documentation of success stories regarding implementation of procurement reforms in the same institutions.

Kavula et al. (2014) identified factors determining implementation of public Procurement Regulations in selected secondary schools of Kitui County, including lack of relevant procurement structures such as tender committees and sub-committees; lack of induction courses to enhance awareness and knowledge of Procurement Regulations; as well as lack of in-service training for some school principals and their deputies. Other determinants included school financial standing, based on the level of indebtedness; and budgetary constraints, which affected school-supplier relationship.

In their study, Embeli et al. (2014) reported that implementation of procurement reforms in public secondary schools in Trans-Nzoia County, was influenced by lack of procurement skills, non-enforcement, negative organisational procurement culture and low knowledge of Procurement Regulations; while Angokho, Juma & Musienga (2014) found that achievement of transparency and accountability in procurement procedures of public secondary schools in Vihiga County was prevented by general lack of information about the legislative and policy frameworks, principles, procedures and processes of procurement, among school tender committee members.

Notably, none of the extant empirical studies has determined the relationship between various aspects of procurement reforms on expenditure management in public secondary schools. Even though the study focused on various aspects of procurement reforms, this article narrows down to the aspect of emergency procurement, which intrinsically relates to procurement planning. Consequently, the purpose of this paper is to determine how public secondary schools complied with provisions on emergency procurement, and how this influenced expenditure management. The concept was measured in terms of variation in the amount of procurement expenditure between the periods: ‘before reforms (1999-2002)’, and ‘after reforms (2007-2010)’. The idea was to determine if the introduction of procurement reforms in public secondary schools caused a reduction, an

increase or no change in the level of procurement expenditure.

## 2. Literature Review

Even though many studies have focused on public procurement reforms all over the world, specific literature on how various aspects of reforms influence expenditure management in public secondary schools remains scanty, in both developed and developing countries. Notably though, the challenge of procurement malpractices is universal; variation only exists in the level of manifestation and magnitude. More still, whereas procurement systems of developed countries are more advanced in terms of legislative frameworks, institutional structures and technology, in developing nations, procurement systems are at nascent stages. Much of the reforms taking place in developed economies involve transformation from paper-based to electronic procurement (e-procurement).

In the United Kingdom (UK), public procurement has undergone and continues to undergo various reforms aimed at enhancing efficiency and sustainable utilisation of public resources, albeit with varying results (Perry, 2011; Brammer & Walker, 2007; Evenett & Hoekman, 2005). In England for instance, procurement reforms enabled public schools to have a great deal of autonomy in deciding how their budget is spent, what services to procure and how to procure them (Perry, 2011). The reforms led to introduction of e-procurement, which has widened choices for quality goods and services; and enabled public schools to save up to £1 billion every financial year (Department for Education, 2011).

In Canada, public procurement system has gone through various reforms over the past four decades (Strobo & Leschinsky, 2009). One aspect of reforms that significantly changed procurement practices in Canadian public schools is the introduction of e-procurement in 1990 (Swick & Tétrault, 2014; Fagan, 2005). The transition to e-procurement was motivated by the need to: lower the cost of accessing vendors, advertising tenders and distributing bid documents; improve accessibility of public tender opportunities, improve competitiveness of quotations, as well as increase trade between vendors and public procuring entities, including schools (Fagan, 2005). About eight years later, more than 80% of public schools reported significant savings in their procurement budgets, as all tender procedures, including advertising, bid submission; evaluation and contracting were done online (Financial Management Institute & Price Waterhouse Coopers, 2015).

The Australian procurement system has experienced various reforms since 1997 when the Financial Management and Accountability Act was enacted (Department of Treasury and Finance [DTF], 2012; DTF, 2006). Existing literature single out reforms that were initiated in the first decade of the 21<sup>st</sup> Century, based on recommendations of a study conducted in 2003, which include institutional capacity strengthening and e-procurement. In 2012, the Schools Electronic Catalogue Ordering (SECO) system was implemented in all New South Wales (NSW) schools. Two years later, up to 1,500 NSW schools and 6,374 users were connected to the SECO system; and up to 128,389 purchase orders had been sent electronically to catalogued vendors since inception. The SECO system improved expenditure management by enabling NSW public schools to save up to AU\$218 million in two years (Jones, 2014).

In South Korea, the reform process, which began in 1996, focused on transforming the paper-based procurement system to an e-procurement system in order to improve transparency and efficiency (Neupane, Soar, Vaidya, & Yong, 2012; Chang, 2011; Westcott, 2004). By 2000, most public schools were transacting their procurement business through Government e-Procurement System (GEPS) (Westcott, 2004). The online facility enhanced efficiency in school procurement activities by eliminating paperwork, inflation of prices and collusion between some bidders and procurement staff, as all transactions were posted online for easy access by all stakeholders (Westcott, 2004).

The Chilean Government established a Communications and Information Technology Unit (UTIC) in 1998 to facilitate transition from paper-based to technology-based public procurement. In view of this, public schools began initiating e-procurement systems with support of the government through Ministry of Education as early as 1999 (Concha, 2004). By 2003, about 85% of public schools were practicing e-procurement. A study on the benefits of e-procurement noted that the system had improved transparency and efficiency, as well as reduced corruption (Concha, 2004). In Brazil, during the first two years of e-procurement, public secondary schools saved up to US\$1.5m. By 2005, more than half of public schools were registered in the e-procurement database. However, reforms in schools was delayed by lack of skills among board members and shortage of computers, low internet connectivity (Ozorio de Almeida, 2005).

In Nigerian public secondary schools, procurement reforms tackled predominant malpractices such as single sourcing, tender splitting, induced emergency procurement, inflation of prices, and lack of transparency (Musa, Success & Nwaorgu, 2014). The reforms process enhanced efficiency and fiscal discipline in public secondary

schools, thus, enabling the institutions to save up to ₦1.4 billion annually. Nonetheless, effectiveness of the reforms process was undermined by shortage of competent technical skills among tender committees, limited training opportunities, political influence on tender award process, as well as delayed auditing of school financial accounts. The challenges undermined the ability of school tender committees to sustain gains and deal with accumulated financial mismanagement within public schools over the years (Musa et al., 2014).

In Uganda, procurement reforms which started in 1997, led to the introduction of Regulations that decentralised public procurement in 2001 and facilitated enactment of the Public Procurement and Disposal of Public Assets Act in 2003. In 2014, Procurement Guidelines for Schools was developed to deepen reforms by informing and guiding school tender committees on the procedures to be followed and the documentation to be used in sourcing, selecting, and retaining providers for goods, services, and works (Komakech & Machyo, 2015). Even though the introduction of procurement Guidelines for schools synergised compliance with procurement laws, various issues remain outstanding, including poor management of records, use of direct procurement methods, as well as delayed award of contracts due to poor procurement planning (Komakech & Machyo, 2015).

Procurement in the Kenyan public sector has undergone several reforms from a system with no regulations in the 1960s to a system regulated by Treasury circulars between 1970 and 2000; and lastly, to a system with regulations at the turn of the 21<sup>st</sup> Century, including the Procurement Regulations of 2001, Procurement Act of 2005, as well as Procurement Regulations of 2006 (Embeli et al., 2014). Nonetheless, it is the Procurement Regulations of 2001 that synergised the momentum for procurement reforms in Kenya (Embeli et al., 2014). Although procurement reforms brought in a new order of doing business in schools, it delayed to improve expenditure management as expected (IPAR, 2007). Nonetheless, there is a dearth of literature on how various aspects of procurement reforms influence expenditure management in Kenyan public secondary schools. The few studies that have focused on topics akin to the subject of this study mainly identified factors determining or preventing implementation of procurement reforms in a few secondary schools of Trans-Nzoia, Vihiga and Kitui counties (Kavula et al., 2014; Embeli et al., 2014; Angokho et al., 2014). Even scantier, is literature linking emergency procurement and expenditure management in public secondary schools of Nairobi City County.

The study was anchored on Fiscal Decentralisation Theory, advanced by Richard Musgrave in the mid-19<sup>th</sup> Century (Rondinelli, 1981). The theory holds that fiscal decentralisation is an indispensable process that forms part of public governance reforms. It entails the decentralisation of authority, responsibility, and accountability for the management of public revenues as well as expenditure to peripheral cost centres and communities. The theory further holds that decentralisation of expenditure management to peripheral cost centres and communities are inevitable within the framework of bottom-up approach to development planning. The ultimate goal is to achieve efficiency, effectiveness, equity, and democracy, which may be constrained by a centralised system. The theory assumes that decentralising expenditure management is likely to stimulate equitable distribution of national resources and spur regional economic growth by injecting public funds in peripheral economies (Rondinelli, 1981).

In the education sector, decentralisation of expenditure management places authority, responsibility and accountability in the hands of institutional heads and management boards. The theory indicates that expenditure efficiency is likely to improve when communities surrounding cost centres are involved in partial financing, management and monitoring expenditure patterns (Winkler, 1989). By assessing the effects of procurement reforms on expenditure management, this study anchored on the postulates of the Fiscal Decentralisation Theory. In Kenya, although the authority, responsibility, and accountability for expenditure management were decentralised to educational institutions in the 1970s, lack of a comprehensive legislative framework hampered expenditure efficiency, leading to wastage of public resources. The development of a legislative framework in the wake of the Century, initiated a national reforms process, aimed at restoring efficiency in expenditure management at the peripheral, regional and national cost centres.

### **3. Methodology**

The evaluation research model III guided the research process, including data sourcing, processing, and analysis. The model focuses on four key dimensions of programme evaluation, including needs and problems (context analysis); resources and strategies needed to achieve objectives (input evaluation); analysis of the programme while it is operating (process evaluation), and the extent to which goals of a programme have been achieved (product evaluation) (Mugenda & Mugenda, 2003). The study examined contextual issues such as challenges to procurement reforms in public secondary schools; input aspects such as number of tender committee members trained in procurement management; process evaluation, including the frequency of tender committee meetings, advertisements and emergency procurement; as well as product evaluation in terms of expenditure management.

The study targeted public secondary schools in Nairobi City County. At the time of the study, the County had 78 such schools, of which 7 were categorised as ‘national’, 49 belonged to the ‘county schools’ category, while 20 were ‘sub-county schools’. In terms of gender, 19 were boys’ only schools, 20 belonged to girls, while 37 were mixed schools. More specifically, the study focused on schools that had existed for at least 10 years prior to 2001 when procurement reforms in question were initiated. The criterion was based on the assumption that such schools had established databases for procurement expenditure and student population for the period under study, namely, 1999 to 2010. Within the schools, the study targeted deputy principals as well as members of Boards of Management (BOM) and Parents-Teachers’ Association (PTA).

Stratified random and purposive sampling procedures were applied to select schools and respondents. In this regard, the 76 public secondary schools were collectively designated as the population ( $N_i$ ) from where a sample ( $n_i$ ) was drawn, using Fisher’s formula for sample size determination from finite populations (Gliner, Morgan & Leech, 2009). The process yielded a sample size of 39 schools, which was stratified into three categories - national, county, and sub-county; as well as on the basis of gender - boys’, girls’ and mixed schools. The process ensured proportionate distribution, as indicated in Table 1.

Table 1. Distribution of sample size based on school category and gender

Category of school	Type			Sample
	Boys’	Girls’	Mixed	
A: National	2	2	0	4
B: County	7	8	10	25
C: Sub-County	1	1	9	10
<b>Total</b>	<b>10</b>	<b>10</b>	<b>19</b>	<b>39</b>

Deputy principals and members of BOMs and PTAs, were sampled purposively based on membership to school tender committees, management, and/or oversight of school procurement activities. Primary data were sourced through self-administered questionnaires for deputy principals and key informant interviews for BOM and PTA members, while secondary data were sourced through a review of annual financial reports and student enrolment data, among others. The split-half technique was used to estimate reliability of data collection instruments, and the resultant correlation coefficient adjusted using Spearman-Brown prophecy formula (Gliner et al., 2009). Data collection instruments were pre-tested in six public secondary schools in Kiambu, Muranga and Nyeri Counties, which neighbour Nairobi County to the West and North. Primary data were sourced in May 2015. Even though the study targeted 39 schools, 35 questionnaires were filled at the end of data collection period, which suggests a response rate of 89.7%. Again at the end data collection period, 16 key informant interviews were successful.

Quantitative analysis techniques included frequency distributions with percentages; Analysis of variance (ANOVA), Chi-square ( $\chi^2$ ) statistic, Pearson’s correlation coefficient and multiple regression (Gliner et al., 2009; Morgan, Leech, Gloeckner, & Barrett, 2007). Multiple regression modes were applied to determine the effect of each aspect of procurement reforms (independent variables) on expenditure management (dependent variable). In general form, the models are based on the premise that  $Y$  is a function of a set of  $k$  independent variables ( $X_1, X_2, \dots, X_k$ ) in a population (Morgan et al., 2007). To express the model in an equation form,  $X_{kj}$  denotes the value of the  $j^{\text{th}}$  observation of variable  $X_k$ , as indicated:

$$Y_j = \beta_0 + \beta_1 X_{1j} + \beta_2 X_{2j} + \dots + \beta_k X_{kj} + \varepsilon_j$$

Where:  $\beta_0$  is the intercept;  $\beta_1, \dots, \beta_k$  are partial regression coefficients;  $\varepsilon_j$  is the error term;  $Y_j$  is the dependent variable;  $X_1, \dots, X_k$  are independent variables (Morgan et al., 2007; Bryman & Cramer, 1998). In this study, the dependent variable ( $Y_j$ ) was variation in procurement expenditure, while the independent variables ( $X_1, \dots, X_k$ ) included frequency of tender committee meetings in a quarter year, number of tender committee members trained in procurement management, frequency of tender advertisements, frequency of emergency procurement, frequency of applying open tender methods and frequency of tender splitting. The models generated three outputs of interest to this study, namely standardised regression coefficients (*Beta* weights), adjusted coefficient of determination ( $R^2$ ) and F statistic.

The effect of independent variables was indicated by partial regression coefficients associated with each variable. Whereas a negative regression coefficient showed a negative effect, a positive coefficient indicated a positive effect on variation in procurement expenditure. The regression coefficients were standardised to generate *Beta*

weights, to tell by how many standard deviation units the dependent variable was likely to change for a unit standard deviation change in an independent variable. The bigger the deviation from equilibrium, the stronger the effect of an independent variable (Morgan et al., 2007; Bryman & Cramer, 1998).

Goodness-of-fit shows how well a set of independent variables incorporated in regression models explain variation in the dependent variable, in this case, expenditure management. In multiple regression models, goodness-of-fit is explained by the coefficient of determination, designated as  $R^2$ . Nevertheless, the adjusted  $R^2$  provides a more accurate estimate of the explanatory power of a regression model than  $R^2$  by considering the number of independent variables incorporated in the model. The significance of variation in  $Y$  is indicated by the  $F$  statistic (Morgan et al., 2007; Bryman & Cramer, 1998). Furthermore, variation in  $Y$  between the periods before reforms (1999-2002) and after reforms (2007-2010) was computed using the arithmetic formula, stating that:

$$E_v = \left[ \left( \frac{e_{1a} + e_{2a} + e_{3a} + e_{4a}}{p_{1a} + p_{2a} + p_{3a} + p_{4a}} \right) / n_a \right] - \left[ \left( \frac{e_{1b} + e_{2b} + e_{3b} + e_{4b}}{p_{1b} + p_{2b} + p_{3b} + p_{4b}} \right) / n_b \right]$$

Where  $E_v$  is the variation in procurement expenditure;  $e_{1a}...e_{4a}$  are procurement expenditures for years one to four after reforms;  $e_{1b}...e_{4b}$  are procurement expenditures for years one to four before reforms;  $p_{1a}...p_{4a}$  are the student populations for years one to four after reforms;  $p_{1b}...p_{4b}$  are the student populations for years one to four before reforms;  $n_a$  is the number of years under focus after reforms and  $n_b$  is the number of years under focus before reforms. The analysis was based on the assumption that the level of procurement expenditure was a function of student population; that schools procure goods, services, and works to meet the needs of students. As student population increases, the level of procurement expenditure is also expected to increase proportionately. Whereas a reduction in procurement expenditure between the two periods signified that the reforms were effective in improving fiscal discipline, an increase or no change indicated lack of effectiveness.

Qualitative data were transcribed and analysed using Nvivo 10 to identify emerging themes and patterns. Regarding ethical considerations, the investigator sought informed consent from potential respondents; and the process involved briefing them about the study, voluntary participation, withdrawal of consent and confidentiality of information sourced. Ethical clearance was obtained from the University of Nairobi Ethics and Research Committee. Regarding authorisation, a research permit was obtained from the National Commission for Science, Technology, and Innovation (NACOSTI), while an introduction letter was obtained from the University of Nairobi.

#### 4. Results

The analysis revealed two outstanding patterns of variations in annual per capita procurement expenditure. Whereas the first pattern shows that procurement expenditure reduced consistently from the period before reforms, to the period during reforms and further down to the period after reforms; the second pattern indicates that procurement expenditure reduced from the period before reforms, to the period during reforms; but later increased during the period after reforms. On average, the Analysis of Variance (ANOVA) results, in Table 2, show that before reforms, the schools recorded an annual per capita procurement expenditure of KES 47,768, which declined to KES 34,625 during reforms and dropped further to KES 30,977 after reforms. In this regard, the analysis obtained a computed  $F_{(2, 102)}$  statistic of 4.621 and a  $p$ -value of 0.012, which suggests up to 95% chance that variations in annual per capita procurement expenditure were statistically significant, which in turn, suggests that procurement reforms may have significantly influenced the management of expenditure in public secondary schools.

Table 2. Variation in annual procurement expenditure - before, during and after reforms

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for Mean		Min	Max
					LB	UB		
Before reforms	35	47767.71	29854.40	5046.32	37512.37	58023.06	5175	117769
During reforms	35	34625.29	21794.21	3683.89	27138.71	42111.86	4042	87489
After reforms	35	30976.86	20152.47	3406.39	24054.24	37899.47	3863	87919
<b>Total</b>	<b>105</b>	<b>37789.95</b>	<b>25138.28</b>	<b>2453.25</b>	<b>32925.08</b>	<b>42654.83</b>	<b>3863</b>	<b>117769</b>
ANOVA								
	Sum of Squares	df	Mean Square	F	Sig.			
Between groups	5459619006.190	2	2729809503.095	4.621	.012**			
Within groups	60261437060.571	102	590798402.555					
<b>Total</b>	<b>65721056066.762</b>	<b>104</b>						

\*, \*\*, \*\*\* show significance at  $p < 0.1$ ,  $p < 0.05$  and  $p < 0.01$  error margins, respectively.

The ANOVA results further show that annual per capita procurement expenditure reduced by circa 35% from KES 47,768 before reforms to KES 30,977 after reforms. Based on this, a computed  $F_{(1,68)}$  statistic of 7.606 and a  $p$ -value of 0.007 were obtained, which suggests up to 99% chance that variation in per capita procurement expenditure between the two periods is statistically significant. Furthermore, the variation in annual per capita procurement expenditure between the periods before and after reforms were clustered into three categories of <KES10,000, which was designated as ‘small variation’; KES 10,000 to 19,999, designated as ‘average variation’; and KES 20,000+, designated as ‘big variation’. Whereas ‘small variation’ signifies a weak level of fiscal discipline, ‘big variation’ suggests a strong level of fiscal discipline. Based on this, the results show that of the 35 schools, 24 (68.6%) recorded small variation in annual procurement expenditure, 7 (20.0%) achieved average variation, while 4 (11.4%) experienced big variation.

#### 4.1 Analysis of the Relationship between Background Profile and Expenditure Management

The study captured various attributes of the schools including type, category, location, distribution by sub-counties, availability of tender committees and membership to such committees. The study further examined the relationship between such attributes and variation in procurement expenditure. The purpose of the analysis was to identify attributes that were likely to confound the relationship between the frequency of emergency procurement and expenditure management. The results in Table 3 show that among the schools that recorded small variation, 14 (58.3%) were boarding, 7 (29.2%) were day, while 3 (12.5%) provided both day and boarding services. Among those that achieved big variation, 3 (75.0%) were boarding schools, while 1 (25.0%) was a day school. However, the analysis revealed no significant association between type of school and variation in annual procurement expenditure ( $\chi^2 = 2.263$ ,  $df = 4$  &  $p$ -value = 0.687).

Table 3. Background attributes of the schools

Attribute	Small variation		Average variation		Big variation		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
<i>Type</i>								
Boarding	14	58.3	4	57.1	3	75.0	21	60.0
Day	7	29.2	1	14.3	1	25.0	9	25.7
Day & boarding	3	12.5	2	28.6	0	0.0	5	14.3
<b>Total</b>	<b>24</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>	<b>35</b>	<b>100.0</b>
<i>Category</i>								
National	1	4.2	2	28.5	0	0.0	3	8.6
County	18	75.0	2	28.6	3	75.0	23	65.7
Sub-County	5	20.8	3	42.9	1	25.0	9	25.7
<b>Total</b>	<b>24</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>	<b>35</b>	<b>100.0</b>
<i>Income zone</i>								
High-income zone	7	29.2	2	28.6	1	25.0	10	28.6
Low-income zone	17	70.8	5	71.4	3	75.0	25	71.4
<b>Total</b>	<b>24</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>	<b>35</b>	<b>100.0</b>
<i>Sub-County</i>								
Dagoretti	4	16.7	1	14.3	2	50.0	7	20.0
Embakasi	1	4.2	1	14.3	0	0.0	2	5.7
Kamukunji	3	12.5	2	28.5	1	25.0	6	17.1
Kasarani	3	12.5	0	0.0	0	0.0	3	8.7
Langata	1	4.2	0	0.0	0	0.0	1	2.9
Makadara	5	20.8	1	14.3	0	0.0	6	17.1
Starehe	3	12.4	1	14.3	0	0.0	4	11.4
Westlands	4	16.7	1	14.3	1	25.0	6	17.1
<b>Total</b>	<b>24</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>	<b>35</b>	<b>100.0</b>

Furthermore, the analysis revealed lack of a significant association between variation in annual procurement expenditure and: category of schools ( $\chi^2 = 7.013$ ,  $df = 4$  &  $p$ -value = 0.135); location of schools ( $\chi^2 = 0.029$ ,  $df = 2$  &  $p$ -value = 0.986); as well as distribution of schools ( $\chi^2 = 7.711$ ,  $df = 14$  &  $p$ -value = 0.904). In this regard, the results suggest that changes in annual procurement expenditure were homogenous across national, county and

sub-county schools; as well as schools located in high and low income zones. In addition, all the sub-counties were homogenous in terms of such changes.

The results further show that all the 35 (100.0%) schools had complied with the requirement of the Procurement Regulations by establishing tender committees to manage procurement and disposal activities. The membership of school tender committees ranged between 6 and 12. In this regard, the results in Table 4 show that mean membership of school tender committees was 8.96 for schools that recorded small variation in expenditure, 8.57 for those that experienced average variation and 8.50 for those with big variation. However, the analysis obtained a computed  $F_{(2,32)}$  statistic of 0.326 and a  $p$ -value of 0.724, which is not statistically significant; thus, suggesting lack of significant variation in membership of school tender committees for the three categories of schools.

Table 4. Membership of school tender committees

DESCRIPTIVES								
Period	N	Mean	SD	SE	95% CI for Mean		Min	Max
					LB	UB		
Small variation	24	8.96	1.197	0.244	8.45	9.46	6	12
Average variation	7	8.57	1.512	0.571	7.17	9.97	6	10
Big variation	4	8.50	2.380	1.190	4.71	12.29	6	11
<b>Total</b>	<b>35</b>	<b>8.83</b>	<b>1.382</b>	<b>0.234</b>	<b>8.35</b>	<b>9.30</b>	<b>6</b>	<b>12</b>
ANOVA								
		Sum of Squares	df	Mean Square		F		Sig.
Between groups		1.299	2	0.649		0.326		0.724
Within groups		63.673	32	1.990				
<b>Total</b>		<b>64.971</b>	<b>34</b>					
CORRELATIONS								
				Variation in procurement expenditure		Number of tender committee members		
<b>Variation in procurement expenditure</b>		Pearson Correlation		1				0.084
		Sig. (2-tailed)						0.633
		N		35				35
<b>Number of tender committee members</b>		Pearson Correlation		0.084				1
		Sig. (2-tailed)		0.633				
		N		35				35

The results in Table 4 further suggest lack of a significant correlation between the membership of school tender committees and variation in annual procurement expenditure (Pearson Correlation Coefficient  $[r] = 0.084$ ;  $p$ -value = 0.633). In addition, key informant interviews revealed that school administration was represented in tender committees by deputy principals, who according to the Procurement Regulations are obligated to chair the committees. In some schools, county and sub-county education officers were co-opted in tender committees as ex-officio members; yet in others, a few BOM members sat in tender committees; which however, is contrary to provisions of the Procurement Regulations. The membership composition of school tender committees was further faulted for being skewed in favour of teaching staff. Even though non-teaching staff also constituted the committees, they lacked numerical strength to regulate decisions that go against institutional interests. Moreover, the involvement of teaching staff in procurement activities distracted them from undertaking their core business of tending to academic needs of their students.

4.2 Bivariate Analysis of The Frequency of Emergency Procurement and Expenditure Management

The results in Figure 1 show cross-tabulation results between the frequency of emergency procurement in public secondary schools and variation in procurement expenditure. Of the 35 respondents, 21 (60.0%) affirmed that emergency procurement were ‘occasionally’ practised in their schools. This group consisted of 18 (75.0%) respondents whose schools experienced small variation in procurement expenditure, and 3 (42.9%) whose schools recorded average variation. Contrastingly, 13 (37.1%) respondents indicated that their schools had complied with provisions of Part I, Section 3 (1) of the Procurement Act by not practising emergency procurement. Again, this included 5 (20.8%) respondents whose schools recorded small variation in procurement expenditure, 4 (57.1%) whose schools reported average variation and 4 (100.0%) whose schools achieved big

variation.

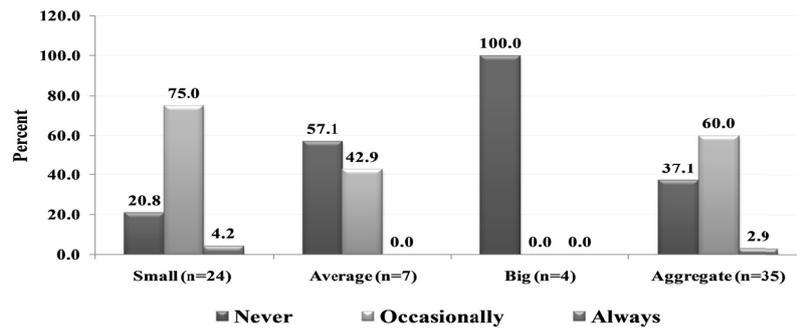


Figure 2. Frequency of emergency procurement against variation in procurement expenditure

Based on the cross-tabulation results in Figure 1, the analysis revealed a significant association between the frequency of emergency procurement in schools and variation in procurement expenditure ( $\chi^2 = 10.829$ ,  $df = 4$  &  $p$ -value = 0.029). Furthermore, the analysis obtained a correlation coefficient of 0.590 and a  $p$ -value of 0.000, which suggests up to 99% chance that the frequency of emergency procurement and variation in procurement expenditure in public secondary schools were significantly correlated. The results imply that a unit increase in emergency procurement was likely to influence a proportionate increment in procurement expenditure, which further suggests that limiting the frequency of emergency procurement is an important step towards effective management of procurement expenditure in public secondary schools.

Furthermore, key informants pointed out that whereas some cases of emergency procurement were genuinely in line with provisions of the Procurement Act, about two-thirds were deliberately induced or tactfully caused by accounting officers or a few members of tender committees. Induced emergency procurement manifested through actions such as failure to assess needs in time and to take necessary precautions; delayed preparation of procurement plans, non-implementation of such plans, as well as intentional under-stocking and poor storage of foodstuff to justify emergency purchases. The frequency of emergency procurement also linked to delayed disbursement of Free Day Secondary Education (FDSE) funds by the Ministry of Education, in collaboration with the National Treasury. Regardless of the underlying factors, emergency procurement was linked to over-expenditure.

The results in Figure 2 show that about two-thirds of the schools had complied with provisions of Section 26 (3) of the Procurement Act, as read together with Sections 20 and 21 of the Procurement Regulations, as well as Sections 6.1 and 6.2 of the Procurement Manual by developing procurement plans, according to 22 (62.9%) respondents. This group included 11 (45.8%) respondents from schools that recorded small variation in procurement expenditure, 7 (100.0%) who experienced average variation and 4 (100.0%) that reported big variation. Based on this, the analysis obtained a computed  $\chi^2$  of 9.479, with 2 degrees of freedom and a  $p$ -value of 0.009, which suggests up to 99% chance that there was a significant association between availability of procurement plans in schools and variation in procurement expenditure.

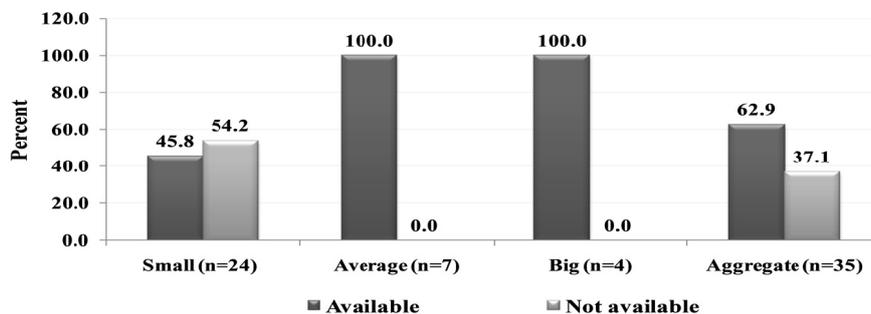


Figure 1. Availability of procurement plans against variation in procurement expenditure

Of the 22 respondents who affirmed that their schools had procurement plans, 12 (54.5%) indicated that the plans were prepared by school tender committees as required by the Procurement Regulations; 9 (40.9%) said that the plans were prepared by school bursars, while 3 (13.6%) mentioned principals. Others included

procurement officers, as mentioned by 2 (9.1%) respondents; as well as store-keepers, deputy principals and departmental heads, each cited by 1 (4.5%) respondent. Note that this was a multiple response variable. Still on the same aspect, key informants acclaimed procurement planning for improving efficiency in school procurement activities, which in turn, enabled the institutions to utilise their budgets astutely. More particularly, procurement planning ensured timely execution of procurement activities, thus, eliminating the need for rushed orders. Procurement planning also ensured continuity of supplies and smooth operations without challenges of stockouts. Nonetheless, more than a third of the schools, 13 (37.1%), did not have procurement plans due to lack of awareness and skills to develop them.

#### 4.3 Multivariate Analysis of the Frequency of Emergency Procurement and Expenditure Management

In this study, independent variables included frequency of tender committee meetings in a quarter year, number of tender committee members trained on procurement management, frequency of tender advertisements, frequency of emergency procurement, frequency of open tenders and frequency of tender splitting. The analysis generated two regression models. The first model incorporated independent variables only, while the second model incorporated both independent and intervening variables, including student population, school type, school category and income zone.

The models generated three important output indicators, including standardised regression coefficients (*beta* weights), adjusted coefficient of determination ( $R^2$ ) and the significance of F statistic. *Beta* weights showed the effect of each aspect of procurement reforms on expenditure management in terms of direction (either positive or negative) as well as in terms of relative importance. Whereas a negative *beta* weight suggests a reduction in procurement expenditure, a positive *beta* weight indicates an increment in the same. In this study, reduction or increment in procurement expenditure was considered a crucial indicator of how good or bad procurement reforms had influenced the performance of public secondary schools in terms of expenditure management. More still, the adjusted  $R^2$  shows how well the aspects of procurement reforms explained variation in procurement expenditure; while the significance of F statistic indicates whether the effect of procurement reforms on expenditure management made statistical sense or not.

The results of multivariate analysis are summarised in Table 5; and they show *beta* weights, as well as related t-statistic and p-values (*Sig.*) for each aspect of procurement reforms. Nonetheless, this article discusses the frequency of emergency procurement, being the aspect that influenced the biggest increment in procurement expenditure. In this regard, the analysis obtained a *beta* weight of 0.352 (t-statistic = 2.596 & p-value = 0.015) in model 1. However, this increased to 0.457 (t-statistic = 3.240 & p-value = 0.003), with the addition of intervening variables. In both models, the aspect caused an increment of procurement expenditure, which was statistically significant at 95% confidence level in model 1 and at 99% confidence level in the second model. This suggests that the addition of intervening variables in the regression model boosted the variable's effect on procurement expenditure. An increment of procurement expenditure signifies negative effect on expenditure management. Consequently, the investigator failed to reject the null hypothesis ( $H_04$ ), stating that *the frequency of emergency procurement negatively effects expenditure management in public secondary schools*, for lack of sufficient empirical evidence to warrant such action.

Table 5. Aspects of procurement reforms influencing expenditure management

Independent variables	MODEL 1			MODEL 2		
	Standardised coefficients (Beta)	t	Sig.	Standardised coefficients (Beta)	t	Sig.
No. of members with training on procurement management	-0.063	-1.468	0.084*	-0.060	-1.406	0.088*
Frequency of open tenders	-0.146	-1.161	0.255	-0.068	-0.485	0.632
Frequency of tender advertisements by committee	-0.300	-2.429	0.022**	-0.335	-2.639	0.014**
Number of quarterly meetings	-0.138	-1.100	0.281	-0.021	-0.153	0.880
<b>Frequency of emergency procurement</b>	<b>0.352</b>	<b>2.596</b>	<b>0.015**</b>	<b>0.457</b>	<b>3.240</b>	<b>0.003***</b>
Frequency of tender splitting	0.357	2.517	0.018**	0.406	2.645	0.014**

\*, \*\*, \*\*\* show significance at  $p < 0.1$ ,  $p < 0.05$  and  $p < 0.01$  error margins, respectively.

On the same note, key informants confirmed that emergency procurement was a common practice in public secondary schools, which enabled accounting officers to source goods and services in order to address situations at hand, without following existing procurement rules and procedures. In this regard, some administrators conveniently failed to procure goods and services in time, in order to create emergencies, during which tenders were awarded to selected suppliers and service providers without proper measures to check against irregularities. Emergency procurement created a leeway for over-expenditure, which in turn, contributed to the increment of procurement expenditure during the period under focus. Consequently, controlling the frequency of emergency procurement would be a key step towards effective management of procurement expenditure in public secondary schools.

Relative importance of independent variables in terms of effects caused on a dependent variable is indicated by the magnitude of *beta* weights. Whereas a negative (-) sign before a *beta* weight shows a decrement effect on the dependent variable, a positive (+) sign suggests an increment effect. The effect of independent variables is nil at 0.0, but increases away from 0.0 in both directions ( $\pm$ ). The bigger the deviation from the equilibrium, the stronger the effect associated with a particular independent variable. Based on this principle, the analysis showed that among the aspects that caused an increment in procurement expenditure, the frequency of emergency procurement (*beta* weight = 0.457) was more important than the frequency of tender splitting (*beta* weight = 0.406).

The results further show that model 1 generated an adjusted  $R^2$  of 0.537, which suggest that the aspects of procurement reforms analysed by the study accounted for up to 53.7% variation of procurement expenditure over the reference period. When intervening variables were added into the model, the adjusted  $R^2$  increased to 0.563, which suggest that model 2 accounted for 56.3% of variation in procurement expenditure. The results also suggest that both models had a moderate strength in estimating the effect of procurement reforms on expenditure management. Besides, the strength of both models was statistically significant at 99% confidence level ( $p$ -value < 0.000).

## 5. Discussions and Conclusions

The purpose of this study was to establish the extent to which public secondary schools in Nairobi City County had complied with legislative and policy provisions guiding public procurement reforms in Kenya, as well as the effect of selected aspects of reforms on expenditure management. This article focuses on the frequency of emergency procurement, being the aspect that caused the biggest increment in procurement expenditure. In the public sector, expenditure management is a fundamental aspect for sustainable delivery of quality services; and its purpose is to achieve three interconnected objectives, including improving fiscal discipline, optimising allocation of resources in line with budgetary policy priorities, and ensuring good operational management. Improving fiscal discipline involves controlling the amount of fiscal resources spent in the procurement of goods, services, and works, with a view to minimising loss through accidental wastage and/or afore-thought malpractices.

The findings show that less than one-half of the public secondary schools, (37.1%), had complied with legislative requirement by not practising emergency procurement. Besides, the aspect caused a significant increment of procurement expenditure (*beta* weight = 0.457,  $t$ -statistic = 3.240 &  $p$ -value = 0.003), which signifies weakness (negative effect) in the standards of fiscal discipline, and thus, expenditure management. Notably, the provision for emergency procurement is not only delicate, but also vulnerable to misuse by accounting officers through dilatory tactics, with the intention of creating artificial “urgent need” situations in order to subvert procurement procedures. When used properly, emergency procurement provision can enable public institutions to save public resources; but when misused, the provision can lead to massive loss of public resources, through inflated prices, misguided priorities and bloated expenditure.

Induced emergency procurement is a key manifestation of corruption, which affects all organisations, including public institutions. Price differentials between induced emergency procurement and planned procurement can be as high as tenfold. In situations of induced emergency procurement, contracts are often awarded to most successful bribers, friends or relatives; and not necessarily to bidders who offer best price-quality combinations. Under such situations, procuring entities are highly likely to receive goods and services of poor quality, which logically, denies them best value for money. Corruption in induced emergency procurement can also lead to biased allocation of resources, as corrupt accounting officers exaggerate allocations for procurement projects that provide an easy way for personal benefit, at the expense of other more important institutional needs. In view of this, limiting the frequency of emergency procurement is an important step towards effective management of procurement expenditure in public secondary schools, which shall be achieved through comprehensive

procurement plans and budgets.

Furthermore, about two-thirds of the schools (62.9%) had developed procurement plans, as required by the legislative and policy frameworks governing public procurement. The primary benefit of procurement planning is the elimination of induced emergency procurement; which in turn, promotes fiscal discipline and improves expenditure management. Procurement planning also provides opportunities for stakeholders, including requesting entity, end users, procurement department, technical experts, and even vendors, to meet and discuss procurement requirements and objectives; as well as assigning timeframes to planned procurement activities, which in turn, eliminates cases of emergency procurements. Supporting public schools to develop and implement procurement plans remains crucial for preventing loss of public resources, achieving financial sustainability and improving service delivery.

In view of the above, the Ministry of Education and Directorate of Public Procurement should invest in sensitisation programmes targeting all school tender committees on emergency procurement, particularly focusing on legislative provisions for managing the practice, consequences of misapplication, and the importance of procurement planning. Again, the stakeholders should focus on training school tender committees on procurement planning to enable members acquire skills on how to develop, execute, and manage procurement plans. Equally important is the amendment of procurement laws and policies to grant BOM and PTA members more powers to monitor activities of school tender committees and accounting officers; thereby, flag out situations that may lead to emergency procurement. Procurement planning will ensure timely execution of tender activities; thus, eliminate the need for rushed orders and loss of resources. Lastly, it's important for relevant organs of the Government to disburse funds for FDSE in time to enable tender committees implement procurement plans. Timely disbursement of funds to schools will help avoid situations where procurement activities are executed in a rush; as well as identify financing gaps and measures to cope with such.

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