

Compliance measures and public procurement performance of state corporations in Kenya: An empirical analysis

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ABSTRACT

Compliance measures are the cornerstone of public procurement systems, holding procuring entities accountable to their legal framework. Kenya carries out this function through three mechanisms. Internal Audit Units conduct audits and controls; the Public Procurement Regulatory Authority (PPRA) monitors and evaluates; and the National Treasury sets reporting requirements. The individual contribution of each has yet to be determined. This study examined how the three compliance dimensions affect the public procurement performance of state corporations in Kenya. Etzioni's compliance theory guided the analysis. It posits that the three dimensions are separate mechanisms that respond to different types of institutional power. The study used a positivist, descriptive, cross-sectional design. The groups targeted were the 414 state corporations listed in Executive Order No. 1 of 2023. Yamane's formula gave a sample of 203 heads of procurement, distributed across the 21 ministry clusters by cluster proportionate sampling. A total of 167 completed a structured questionnaire, for a response rate of 82.3 percent. The three were entered concurrently in a multiple regression in SPSS Version 27 to determine the contribution of each variable net of the others. The three dimensions accounted for 54.8 percent of the variance in procurement performance. Each function retained an appreciable independent effect, indicating three distinct mechanisms and that an active one does not compensate for an inactive one. Audit and control were the most significant, followed by regulatory monitoring, the least mature of the three in practice. The Authority needs to expand the scope and extent of entity-level evaluation.

Keywords: Audit and Control, Compliance Measures, National Treasury Reporting, PPRA Monitoring and Evaluation, Procurement Performance, State Corporations

I. INTRODUCTION

Governments buy on a scale that few private organizations approach. In member countries of the Organization for Economic Co-operation and Development (OECD), it accounts for approximately 13 percent of gross domestic product (OECD, 2023), and in lower-income economies, procurement can account for 50 to 70 percent of the national budget (Waci et al., 2024). The same has been the scope of regulation. Procurement systems are now defined by detailed statutory rules, a supervisory authority, and an audit trail, based on the belief that greater procedural control leads to better buying.

Kenya has built more of this apparatus than most countries in the region. Article 227 of the Constitution sets the standard, and the Public Procurement and Asset Disposal Act (PPADA) of 2015 translates it into operating rules. There are three bodies for enforcement. Public Procurement Regulatory Authority (PPRA) evaluates and reviews procuring entities. The Office of the Auditor-General audits them. The National Treasury issues the accounting and reporting standards they follow, moderates public finance management, and supervises the debt position, which dictates timely payment to suppliers.

Those arrangements have not resolved the question. In 2024/2025, the regulator reviewed 5,064 tender documents from over 50,000 published documents, and 42 percent of those reviewed were noncompliant. Twenty procuring entities were unwilling to allow auditors to obtain records in the same year (PPRA, 2025). The audit reporting story has been the same for a while: goods paid for but never delivered; projects abandoned midway; and prices higher than the market would pay (Office of the Auditor General, 2024). Kenya was ranked 121st out of 180 countries on the latest Corruption Perceptions Index (Transparency International, 2024).

Most of the stakes are held by state corporations. Overall, 414 corporations, under Executive Order No. 1 of 2023, accounted for 11,636 (45%) of the 25,739 contracts reported across the country for 2024/25. Of the total KES

219.68 billion reported, contracts accounted for slightly over 82 percent, amounting to KES 181.87 billion (PPRA, 2025). Questions relating to how these entities are going to respond to oversight, therefore, are not marginal questions.

In this study, compliance measures are defined as the extent to which an entity is held accountable for adhering to the procurement legal framework, and this study examines three measures. Audit and control include the frequency and scope of internal and external audits. PPRA monitoring and evaluation is conducted at the entity level, under the oversight of the entity's regulator. National Treasury reporting includes standard-setting, public finance moderation, and debt management, all of which are relevant to procurement. Each has a named institution behind it and leaves a footprint within the procuring entity, which a procurement officer can report on.

The analytical framework is provided by Etzioni's (1961) compliance theory. Etzioni sorted organizations by the type of power they use to secure conformity and, on the other hand, by the type of involvement that power creates among those subject to it; he argued that effectiveness depends on the match between the two (Celis, 2018). The theory behind procurement is that oversight increases performance when it becomes, and is perceived to be, routine within an entity, whereas it decreases performance when it is perceived as punishment rather than a regular occurrence. This idea, not yet explored in Kenya, can be examined dimension by dimension.

The general proposition is stated, and the existing work does not resolve the parts. Appiah et al. (2023) identified several positive mediating mechanisms between internal audit effectiveness and procurement performance. Harun et al. (2025) studied 427 procuring entities in Tanzania and found that compliance performance was achieved indirectly through familiarity with the rules and professional capability, rather than through pressure. Bergman (2023) found that a regulatory audit across 160 Swedish municipalities had no significant impact. In one Kenyan county, Osoto and Juma (2025) found that the audit variables accounted for 70.5 percent of the variation in procurement performance. These estimates vary widely, and none of the studies differentiate compliance among institutions within Kenyan state corporations. The present study does so by analyzing a survey of 167 heads of procurement who responded on the contributions of audit and control, PPRA monitoring and evaluation, and reporting to the National Treasury.

1.1 Statement of the Problem

Kenya's public procurement legal framework is strong and grounded in the principles of fairness, equity, transparency, competitiveness, and cost-effectiveness. However, compliance remains weak. The Constitution and the PPADA (2015) set the rules, and three institutions enforce them: the Auditor-General through audits, the PPRA through monitoring and evaluation, and the National Treasury through reporting standards. Despite this oversight, the PPRA found compliance deficiencies in almost half (42 percent) of the 5,064 tender documents it reviewed in 2024/2025, and 20 entities refused to release records to the regulator (PPRA, 2025). Audit reports continue to document goods paid for but never delivered, abandoned projects, and inflated prices (Office of the Auditor General, 2024). The problem is most costly in state corporations, which, together with semi-autonomous government agencies, controlled more than 82 percent of national contract value in the same year (PPRA, 2025).

This background emphasizes the role of compliance measures in explaining public procurement performance in parastatals. However, it remains unclear which component of the oversight system improves performance, as past studies disagree. Osoto and Juma (2025) found that audit explained 70.5 percent of procurement performance in one Kenyan county, whereas Bergman (2023) found that regulatory audit had no significant effect in Swedish municipalities. Harun et al. (2025) found that compliance improved performance only indirectly, through capability. Mchopa et al. (2024) found that reforms raised compliance on paper without changing practice. In Kenya, studies of state corporations have examined procurement practices and tender evaluation, not the oversight institutions themselves (Waci et al., 2024; Obura et al., 2023). No study has measured the separate contributions of audit and control, PPRA monitoring and evaluation, and National Treasury reporting in a single model.

Without this evidence, policymakers cannot identify which compliance indicator has the greatest potential to improve overall procurement performance in public entities. As a result, oversight resources are allocated without empirical guidance on the relative contribution of each institution. Consequently, procurement reforms may strengthen measures that add little to performance while neglecting those that add the most. This study therefore sought to determine the effects of audit and control, PPRA monitoring and evaluation, and National Treasury reporting on the public procurement performance of state corporations in Kenya.

1.2 Research Objectives

- i. To determine the effect of audit and control on the public procurement performance of state corporations in Kenya.
- ii. To assess the effect of PPRA monitoring and evaluation on the public procurement performance of state corporations in Kenya.
- iii. To evaluate the effect of National Treasury reporting on the public procurement performance of state corporations in Kenya.

II. LITERATURE REVIEW

2.1 Theoretical Review

Compliance theory originates with Etzioni (1961), who sought to understand why organizations that look alike on paper elicit very different degrees of conformity from their members. His response depended on two factors. The first concerns the type of power an organization uses: coercive, utilitarian, or normative. The second is the type of entanglements that power brings: the alienative, the calculative, or the moral. Etzioni observed that these partners are in predictable combinations, and most organizations perform best when the pairing is congruent. When they are not, they foster resistance and evasion instead of conformity.

Later, Celis (2018) reported that organizations rarely rely on just one type of power, instead using a combination of the three. Kenya's oversight system is structured similarly. Audit and control focus primarily on detection and exposure, and the accounting officer assumes the risk of a negative outcome if one is found. The primary coercive aspect of PPRA monitoring and evaluation is in the reviews of PPRA, and the primary normative aspect is in the standards and guidance that the regulator expects procuring entities to absorb. Reporting to the National Treasury is, for the most part, done without inspection or sanction, simply because the entity's capacity to operate relies on the fiscal rules it is given.

The framework results in a testable expectation. If compliance operates through a single mechanism in a simultaneous model, one dimension will bear the entire explanatory burden, while the others contribute little. If the three dimensions interact with entities in veridically distinct ways of power, each will have its own coefficient after controlling for the other two. Compliance would then be a system of non-substitutable parts. All three are entered concurrently in the specification here.

2.2 Empirical Review

2.2.1 Audit and Control and Procurement Performance

Audit and Control is the frequency, the auditor, and the implications of the audit of the procurement function. Internal audit provides ongoing assurance that documented procedures are being followed. An external audit provides evidence of the carrying authority outside of the entity. Public-sector researchers usually consider the pair the primary compliance instrument available to a procuring organization.

Appiah et al. (2023) examined the studies conducted in public institutions in Ghana. They reported that several factors mediated the effectiveness of internal audit in improving procurement performance, but none was predominant. Yanuarisa et al. (2025) examined the literature on internal audits in public procurement governance. They emphasized that audits have the greatest impact when they occur early in the procurement process and the least when they are limited to verifying completed procurement transactions. An audit regime of the second kind records failure only after the event and includes no mechanism to prevent it.

Osuto and Juma (2025) studied 60 procurement, audit, and finance officers in Kisii County. They found positive results for audit planning, compliance auditing, internal control assessment, and audit reporting, and the four audit variables explained 70.5 percent of the variance in procurement performance. Not all the evidence runs that way. Bergman (2023) conducted a varied regulatory audit across 160 municipalities in Sweden and found nothing statistically significant but noted that his design was only capable of detecting large effects and that there was room for smaller, more persistent ones. The controversy seems to revolve around what is audited, compliance vs. procurement, and the extent to which audit has become involved in procurement.

2.2.2 PPRA Monitoring, Evaluation, and Procurement Performance

Regulatory monitoring differs from an audit because an auditor does not conduct it; instead, they produce a monitoring report rather than an audit report. The reviewing body regulates the procurement system itself through assessment, inspection, and special audit, and provides corrective direction rather than a financial opinion. The dimension is measured by whether it has been evaluated, the reason for the evaluation, and how often the evaluation is repeated.

The most recent evidence is from Harun et al. (2025). They polled 427 respondents across the local government, parastatals, and ministries in Tanzania and found that a culture of performance increases regulatory compliance. However, when the model included procurement and professionalism guidelines as mediators, the direct effect diminished. A necessary condition analysis found that, to achieve a 70 percent compliance threshold, an entity must have a performance orientation. In this view, regulatory influence occurs through the development of capacity. Mchopa et al. (2024) explored over 30 years of Tanzanian reform. They found that the law was repeated and formalized, but it did not translate into real-world change because enforcement capacity never kept pace with the law.

Kenya faces the same gap between mandate and reach. In 2024/2025, the regulator carried out 45 procurement assessments, 38 inspections, and 23 special audits across a system with several thousand procuring entities, and 20 entities refused to provide the requested records (PPRA, 2025). Procurement performance measurement has shifted toward conformity indicators because they are measurable, whereas efficiency and effectiveness are not, and this drift

influences what regulatory agencies pay attention to. Thin coverage shapes how entities read the regulator. Monitoring becomes sporadic, and the standards the regulator sets lose the force of a standing expectation.

2.2.3 National Treasury Reporting and Procurement Performance

The third dimension relates to the fiscal and accounting context in which procurement is conducted: the fiscal standards set by the Treasury, how it manages public finance, and the management of the debt position, which influences when suppliers are paid. It differs from the other two in how it operates. Treasury does not inspect entities. It provides them with the circumstances under which they may move, and it does so continuously.

Performance is achieved through liquidity and predictability. In the causal order, Prasetyo and Isnowati (2025) found that compliance with procurement regulations mediated the relationship between procurement planning and human resource competence with respect to budget effectiveness, placing it in the middle of the causal chain. Changalima and Mdee (2023) found that procurement planning capability mediates the relationship between procurement competence and performance, and that the fiscal calendar constrains planning capability in a public entity. Unpredictable payments result in downstream consequences. Suppliers embed risk in contracts, and contract execution begins to fall at the point of delivery, the sweet spot identified by Changalima et al. (2023), who found losses in cost, lead time, and buyer satisfaction across 179 Tanzanian procuring entities.

Kenyan studies follow a similar approach but exclude the Treasury. Waci et al. (2024) reported procurement practices that influence value-for-money outcomes in 87 state corporations, while Obura et al. (2023) identified the tender evaluation process as a factor influencing operational performance in service state corporations. Both identified the issue not as a lack of legal provisions, but as the way procurement is conducted.

2.3 Research Gap

From this body of work, three points emerge. Evidence supports each dimension, but it spans countries, government tiers, and outcome definitions that do not align. Researchers have studied procurement practices, tender evaluation, supplier development, stakeholder engagement, and compliance (if mentioned at all) in the Kenyan context (Waci et al., 2024; Obura et al., 2023; Musyoka et al., 2025). No published study has estimated the proportion of audit and control, PPRA monitoring and evaluation, and National Treasury reporting allocated to each of these models in Kenyan state corporations.

That absence is also expensive. Kenya's oversight institutions are funded from a single enforcement budget, and how it is split among them depends on how much each can return. This study provides an estimate based on a sample drawn from corporations that process the bulk of contract value across the country.

III. METHODOLOGY

3.1 Research Philosophy and Design

The study takes a positivist perspective, in which valid knowledge can be observed, measured, and verified with evidence (Maksimovic & Evtimov, 2023). This quantitative approach follows a hypothesis-driven structure (Ali, 2024). The data were thus collected using a structured questionnaire and analyzed through statistical estimation and formal tests. The design is descriptive cross-sectional. It involves measuring a set of variables at a single point in time from many respondents but does not change the conditions under which they operate (Siedlecki, 2020). The goal was to determine the current level of compliance practice and its relationship to practice performance, not to track compliance practice or performance over time; therefore, the design was appropriate.

3.2 Study Area and Target Population

The fieldwork included state corporations in the national government. The Public Procurement Information Portal reported 25,739 contracts for 2024/2025, valued at KES 219.68 billion, of which 11,636 were by state corporations and other semi-autonomous agencies, valued at KES 181.87 billion. PPRA (2025) found that the same cycle resulted in compliance deficiencies in 42 percent of the 5,064 tender documents reviewed, and beneficial ownership was disclosed for 43 percent of awards.

The target population comprised 414 state corporations across 21 government ministries, as stated in Executive Order No. 1 of 2023. Together, they provide many public services and use comparable proportions of public funds, making them an appropriate and policy-relevant object of study. Observation was performed at the corporate level, with the procurement head responding on behalf of the corporation. That officer is most knowledgeable about the corporation's procurement practices, its interactions with oversight bodies, and the outcomes (Ragab & Arisha, 2018).

3.3 Sampling and Sample Size

Sample size followed Yamane's (1967) formula for a finite population:

$$n = N / (1 + Ne^2) = 414 / (1 + 414(0.05)^2) = 203$$

Each of the 21 ministry clusters then received a share of the 203 respondents matching its weight in the population, under cluster proportionate sampling (Taherdoost, 2016; Battaglia et al., 2016). This allocation kept every cluster in the sample and kept its shape close to that of the population it was drawn from. Table 1 sets out the results.

Table 1*Sample Distribution by Ministry Cluster*

Ministry / Cluster	Pop.	Sample	Ministry / Cluster	Pop.	Sample
Interior and National Administration	21	10	Co-operatives and MSME Dev.	9	5
Defence	7	3	Youth Affairs, Sports and The Arts	17	8
National Treasury and Econ. Planning	49	24	Environment, Climate Change & Forestry	9	5
Foreign and Diaspora Affairs	2	1	Tourism, Wildlife and Heritage	23	12
Public Service, Gender & Aff. Action	8	4	Water, Sanitation and Irrigation	19	9
Roads and Transport	21	10	Energy and Petroleum	11	5
Lands, Public Works, Housing & Urban Dev.	14	7	Labour and Social Protection	12	6
Information, Comm. & Digital Economy	17	8	EAC, ASALs and Regional Development	22	11
Health	34	17	Mining, Blue Economy & Maritime Affairs	12	6
Education	63	30			
Agriculture and Livestock Development	23	12			
Investments, Trade and Industry	21	10			
Panel subtotal	280	136	Panel subtotal	134	67

Note. Population total = 414; sample total = 203. Cluster sample sizes were computed as $203/414 \times N$. Source: Government of Kenya Gazette Notice No. 1 of 2023.

3.4 Data Collection Instruments and Procedures

Data came from a structured questionnaire that respondents completed themselves, with items scored on a five-point Likert scale running from 1 for strong disagreement to 5 for strong agreement. The questionnaire has two blocks corresponding to the study's variables: nine items on compliance measures (three per dimension) and a further set on the performance of state corporations covering service delivery, value for money, and quality assurance. Table 2 records the operationalization.

Table 2*Variable Operationalization*

Variable	Type	Indicators	Scale
Compliance measures	Independent	Audit and control; PPRA monitoring and evaluation; National Treasury reporting	5-point Likert (Ordinal)
Performance of state corporations	Dependent	Service delivery; value for money; quality assurance	5-point Likert (Ordinal)

Twenty-four state corporations took part in a pilot before the main survey, about 12 percent of the intended sample and above the 10 percent minimum generally recommended (Lackey & Wingate, 2021). None of the 24 appeared in the main study, so no data were reused. Reliability was checked with Cronbach's alpha against a floor of .70 (Amirrudin et al., 2021; Mugenda & Mugenda, 2003), and the nine compliance items returned .863 at the pilot stage. The researcher and five trained assistants handled distribution and collection in the main survey, delivering questionnaires and collecting them, sparing respondents the effort of returning them. Completed, usable questionnaires numbered 167 of 203, for a response rate of 82.3 percent. Survey work is normally considered to support inference above 60 percent (Sataloff & Vontela, 2021; Mugenda & Mugenda, 2003).

3.5 Data Analysis

Analysis was run in SPSS Version 27 over three stages. Construct validity was assessed first using principal component analysis with the Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity, along with descriptive statistics for each item. Assumption testing followed. Multicollinearity was checked against tolerance, variance inflation factors, and collinearity diagnostics. Error variance and residual behavior were examined using the standardized residuals and standardized predicted values that the regression procedure produced for all 167 cases. Pearson correlation and multiple linear regression were then used to test the hypotheses. The estimated model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Y denotes the performance of state corporations; β_0 is the constant; X_1 is audit and control; X_2 is PPRA monitoring and evaluation; X_3 is National Treasury reporting; β_1 to β_3 are the associated coefficients; and ε is the error term. A null hypothesis was rejected where p fell below .05.

3.6 Ethical Considerations

Consent was obtained from every respondent before any data were collected, and participation remained voluntary throughout, with respondents free to stop at any stage and without consequence. The questionnaire recorded no name, position identifier, or other personal detail, so neither individuals nor their corporations can be identified from the returns. Respondents were told at the outset that the material would serve academic purposes alone. The research team kept completed instruments and the resulting dataset under restricted access, available only to members of the research team. The National Commission for Science, Technology, and Innovation licensed the data collection under NACOSTI/P/24/37454, issued before fieldwork began.

IV. FINDINGS & DISCUSSION

4.1 Response Rate and Instrument Validation

Of the 203 questionnaires distributed, 167 were returned complete, yielding an 82.3 percent response rate and exceeding the 60 percent threshold set by Sataloff and Vontela (2021) as adequate for inference from survey data. Cronbach's alpha for the nine compliance items was .863 in the pilot ($n = 24$), exceeding the .70 minimum set out by Amirrudin et al. (2021).

Construct validity in the main study was examined by principal component analysis across the three compliance dimensions. Table 3 reports the results.

Table 3

Construct Validity of the Compliance Measures Scale

Dimension / Statistic	Initial	Extraction	Loading
Audit and control	1.000	0.582	0.763
PPRA monitoring and evaluation	1.000	0.582	0.763
National Treasury reporting	1.000	0.562	0.750
Kaiser-Meyer-Olkin measure of sampling adequacy			0.650
Bartlett's test of sphericity, approx. χ^2			58.562
df			3
Sig.			0.000

Note. Extraction method: Principal Component Analysis. One component was extracted (eigenvalue = 1.726), accounting for 57.540% of the total variance; the second and third components returned eigenvalues of 0.649 and 0.625, respectively. Rotation was not applicable to a single-component solution. A Kaiser-Meyer-Olkin value of .650 exceeds the .50 threshold for defensible factor analysis, and Bartlett's test rejected the identity matrix, $\chi^2(3) = 58.562$, $p < .001$, so extraction was warranted (Hair et al., 2019). Communalities of .582, .582, and .562 all exceed .50, and loadings of .763, .763, and .750 fall within the range Hair et al. (2019) describe as excellent.

One component emerged that warrants careful reading. Procurement heads appear to register the three forms of oversight as expressions of a single pressure, notwithstanding that three separate institutions with distinct mandates generate them. The component nonetheless captures 57.54 percent of the variance, leaving 42.46 percent specific to individual dimensions. Relatedness of that degree does not amount to interchangeability, and it argues for estimating the three effects separately in place of a single composite score.

4.2 Respondent Profile

Table 4 sets out the education and tenure of the 167 respondents.

Table 4*Respondent Profile (N = 167)*

Characteristic	Category	n	%
Level of education	University degree	94	56.3
	Master's degree	62	37.1
	PhD	11	6.6
Tenure in current position	0–3 years	31	18.6
	4–7 years	51	30.5
	8–15 years	54	32.3
	Over 15 years	31	18.6

Note. Percentages are of the total sample and may not sum to 100.0 owing to rounding.

Every respondent held at least a first degree, and 43.7 percent held a postgraduate qualification. Tenure spread across the range, with 81.4 percent in post for four years or longer and 32.3 percent between eight and fifteen years. Length of service affects how much weight the responses carry. Reporting how often PPRA evaluates an entity, or whether an external audit occurs annually, requires having watched the entity long enough to distinguish a pattern from a single occurrence, and most of this sample had done so.

Twenty of the 21 ministry clusters returned at least one response. Education contributed the most, with 27 respondents (16.2%), followed by the National Treasury and the East African Community cluster at 17 each (10.2%), health at 14 (8.4%), and agriculture and livestock, tourism, and mining at 10 each (6.0%). Investments, trade and industry, water, and labor and social protection returned 8 apiece (4.8%); youth affairs and sports 7 (4.2%); roads and transport and information and communication 6 each (3.6%); lands, public works and housing 5 (3.0%); energy 4 (2.4%); public service and gender and environment and climate change 3 each (1.8%); MSME 2 (1.2%); defense and foreign affairs 1 each (0.6%). The pattern tracks the population, with education and the National Treasury holding the largest numbers of state corporations.

4.3 Descriptive Statistics

Table 5 gives the response distribution and summary statistics for the nine compliance items.

Table 5*Descriptive Statistics for Compliance Measures (N = 167)*

Item	SD	D	N	A	SA	M	Std. Dev.
Internal audits are conducted more frequently	11 (6.6)	0 (0.0)	20 (12.0)	84 (50.3)	52 (31.1)	3.99	1.015
External audits are performed at least once a year	0 (0.0)	0 (0.0)	20 (12.0)	53 (31.7)	94 (56.3)	4.44	0.699
Audit reports often find discrepancies in framework implementation	0 (0.0)	20 (12.0)	20 (12.0)	95 (56.9)	32 (19.2)	3.83	0.876
In the last five years the organization has been evaluated by PPRA	0 (0.0)	32 (19.2)	20 (12.0)	63 (37.7)	52 (31.1)	3.81	1.081
Contract award is the reason behind PPRA evaluation	0 (0.0)	22 (13.2)	51 (30.5)	63 (37.7)	31 (18.6)	3.62	0.936
PPRA reviews are frequent in the organization	0 (0.0)	21 (12.6)	41 (24.6)	63 (37.7)	42 (25.1)	3.75	0.972
National Treasury regularly sets standards	0 (0.0)	0 (0.0)	52 (31.1)	72 (43.1)	43 (25.7)	3.95	0.755
National Treasury moderates PFM affecting procurement performance	0 (0.0)	0 (0.0)	22 (13.2)	113 (67.7)	32 (19.2)	4.06	0.567
National Treasury manages public debt dictating supplier payment	0 (0.0)	0 (0.0)	63 (37.7)	83 (49.7)	21 (12.6)	3.75	0.665

Note. Scale: 1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA). Cell entries are frequencies with row percentages in parentheses. M = mean; Std. Dev. = standard deviation.

4.3.1 Audit and Control

Audit and control ranked highest among the three dimensions, with a mean of 4.09, calculated as the average of its three item means. External audit was the most widely reported practice anywhere in the instrument (M = 4.44, SD = 0.699), and not one respondent disagreed that it takes place at least annually. This result aligns with the constitutional position, since an annual external audit of a public entity is a function of the Auditor-General, and its universal reporting shows that the obligation is being discharged in fact, not only on paper.

Internal audit looks different. Its mean of 3.99 sits alongside the widest standard deviation in the dimension ($SD = 1.015$), and 11 respondents (6.6 percent of the sample) strongly disagreed that internal audits are conducted more frequently in their organization. Unanimity on one audit item and outright rejection by a minority on the other is the finding worth pausing over. An external audit arrives from outside and cannot be declined. Internal audit is resourced, scheduled, and staffed by the corporation itself, so its intensity moves with management commitment. Yanuarisa et al. (2025) made the same distinction in their review, placing the internal audit contribution early in the procurement cycle and finding it weakest when the audit is confined to checking completed transactions. A minority of Kenyan state corporations appear to sit at that weaker end.

Audit findings averaged 3.83 ($SD = 0.876$), with 76.1 percent agreeing or strongly agreeing that audit reports regularly identify discrepancies in how the procurement framework is implemented. Set against the near-universal reporting of external audits, the combination is awkward. Audit is running. It is finding non-compliance. Non-compliance continues anyway. Detection of this evidence does not correct itself, which aligns with Bergman's (2023) null result across Swedish municipalities and highlights the gap between recording a deficiency and having the power to close it.

4.3.2 PPRA Monitoring and Evaluation

PPRA monitoring and evaluation came out lowest, at a dimension mean of 3.73. Each of its items fell below the audit items, and the instrument's lowest single mean sits here. Agreement that contract award is what prompts PPRA evaluation reached only 3.62 ($SD = 0.936$), with 30.5 percent of respondents neutral and 13.2 percent in disagreement.

More consequential is the evaluation item itself ($M = 3.81$, $SD = 1.081$), which had the greatest dispersion across the instrument and on which 19.2 percent disagreed. The question asked about a five-year window. A fifth of state corporations reporting no regulatory evaluation over five years is a statement about coverage, not about perception. The regulator's own figures corroborate it. During 2024/2025, PPRA completed 45 procurement assessments, 38 inspections, and 23 special audits, and 20 entities withheld the requested records (PPRA, 2025). An entity visited once in five years, or not at all, has little reason to treat monitoring as continuous.

Etzioni's (1961) framework anticipates the consequence. Power applied at intervals produces calculative involvement rather than moral involvement, and an entity in that position orients itself to the odds of inspection rather than to the standard. Harun et al. (2025) reached a similar point in Tanzania, where regulatory influence ran through capability rather than inspection, as did Mchopa et al. (2024), whose review found reform after reform lifting formal compliance while practice stayed where it was, with enforcement capacity never having caught up with the statute. Kenya's mandate is comprehensive. Its reach is not.

4.3.3 National Treasury Reporting

National Treasury reporting fell between the other two at 3.92, and its distinction is steadiness more than height. Treasury moderation of public finance management drew the second-highest mean on the instrument ($M = 4.06$), along with its smallest standard deviation by a clear margin ($SD = 0.567$); 86.9 percent agreed or strongly agreed, and no one disagreed. Standard-setting behaved similarly ($M = 3.95$, $SD = 0.755$), again without a single disagreement recorded. Two items attracted no disagreement, with standard deviations under 0.76, describing a constraint that applies across the sector in the same way. Audit intensity is a corporation's choice. Regulatory evaluation reaches some corporations and misses others. Treasury requirements apply to every procuring entity, continuously and identically. In Etzioni's terms, this is utilitarian and normative power in place of coercive power, and it generates calculative compliance owing nothing to the prospect of inspection.

The odd item out repays attention. Treasury management of public debt as a determinant of supplier payment returned the dimension's lowest mean ($M = 3.75$, $SD = 0.665$), with 37.7 percent of respondents neutral. Distance is a likelier explanation than indifference. Debt management is a macro-fiscal function whose consequences reach the procurement office through the timing of exchequer releases, never as a named instruction. The transmission is real, all the same. Prasetyo and Isnowati (2025) placed fiscal discipline upstream of procurement outcomes. When payment timing is unpredictable, suppliers price that uncertainty into their bids, and delivery-stage performance declines, which is where Changelima et al. (2023) located cost, lead-time, and satisfaction losses in their 179 Tanzanian entities.

4.4 Diagnostic Tests

Assumptions underlying ordinary least squares were tested before the coefficients were read. Table 6 reports the multicollinearity statistics.

Table 6
Collinearity Statistics

Predictor	Tolerance	VIF
Audit and control	0.802	1.247
PPRA monitoring and evaluation	0.802	1.246
National Treasury reporting	0.815	1.227

Note. Dependent variable: performance of state corporations. Collinearity diagnostics returned eigenvalues of 3.815, 0.069, 0.067, and 0.048 with corresponding condition indices of 1.000, 7.423, 7.526, and 8.881. Tolerance ranged from .802 to .815 and variance inflation factors from 1.227 to 1.247, both well inside the usual limits of .20 and 5 (Hair et al., 2019). The largest condition index reached 8.881, short of the 15 that ordinarily signals a problem. The three dimensions are separable enough to enter the model together, which the study's argument requires.

Error variance and residual behavior were examined from the standardized residuals and standardized predicted values that the regression procedure produced for all 167 cases. Residuals were uncorrelated with predicted values by construction ($r = .000$). Squared residuals showed no relationship with predicted values either (Breusch-Pagan LM = 0.081, $df = 1$, $p = .776$), leaving the constant-variance assumption intact. Residuals were close to normal (Shapiro-Wilk $W = 0.989$, $p = .234$; Kolmogorov-Smirnov $D = 0.056$, $p = .659$), with skewness of -0.180 and kurtosis of -0.500 , within the ± 1 band that Hair et al. (2019) accept. No standardized residual exceeded ± 3 , and only one exceeded ± 2.5 , so no single case exerts undue influence. Figure 1 shows the plot.

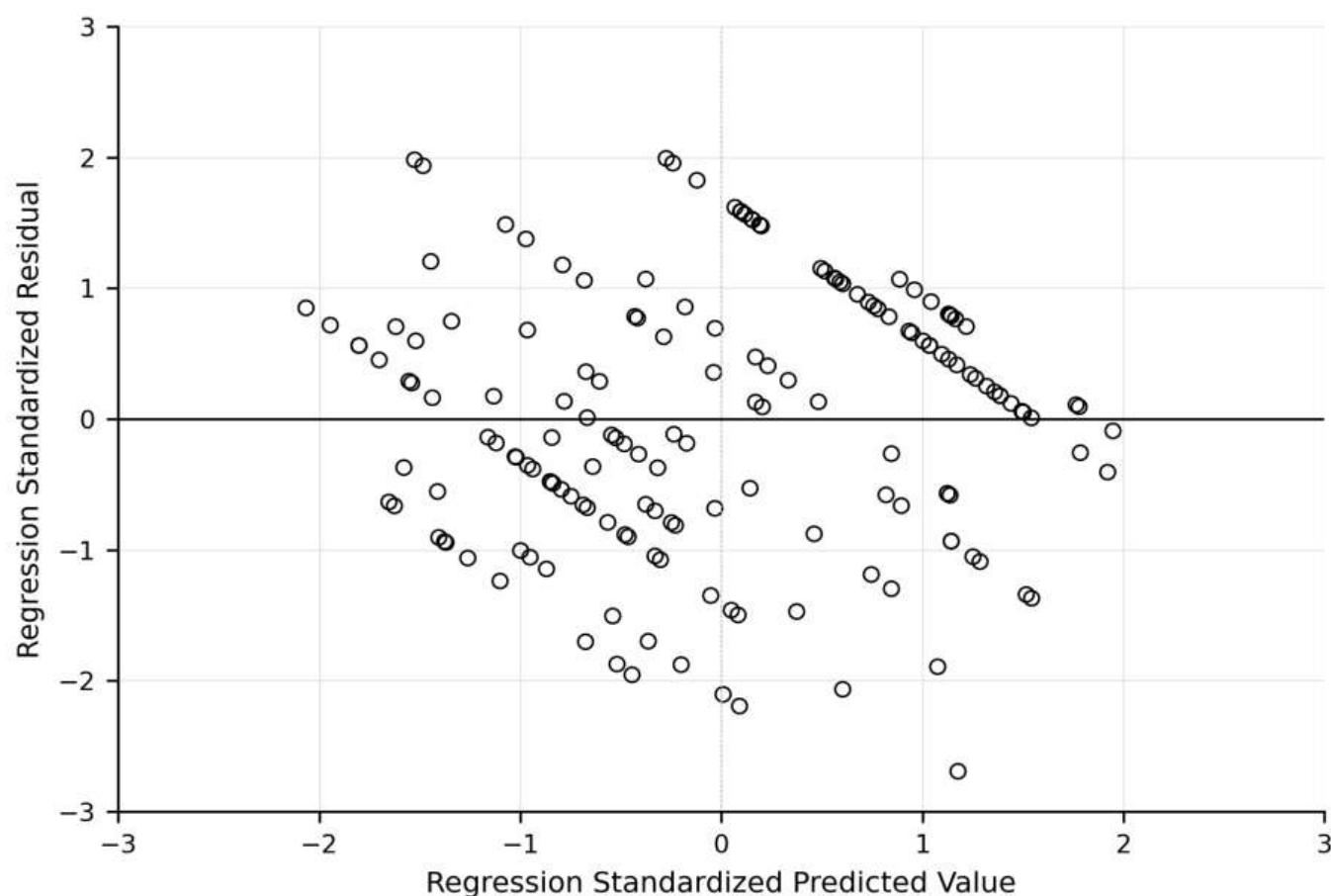


Figure 1
Standardized Residuals against Standardized Predicted Values

Note. The diagonal banding reflects the discreteness of the composite Likert-based outcome variable and not heteroscedasticity; residual dispersion is stable across the range of predicted values. Residuals scatter about the horizontal axis without funneling or a visible pattern, which agrees with the formal test. The faint diagonal bands come from a dependent variable built as the mean of ordinal items, which can take only a finite number of values, and they carry no implication for constant variance. Field (2018) notes that ordinary least squares tolerates moderate departures from distributional assumptions at samples of this size, and at $N = 167$, the central limit theorem secures approximate normality in the sampling distribution of the mean. Multiple linear regression is therefore appropriate here.

4.5 Pearson Correlation

Table 7 gives the bivariate associations among the three dimensions and procurement performance.

Table 7

Pearson Correlation Matrix (N = 167)

Variable	1	2	3	4
1. Audit and control	1			
2. PPRA monitoring and evaluation	.375**	1		
3. National Treasury reporting	.357**	.357**	1	
4. Performance of state corporations	.577**	.569**	.537**	1

Note. Correlation is significant at the .01 level (2-tailed). All p-values were below .001.

All three dimensions correlated positively and significantly with procurement performance. Audit and control were correlated at $r = .577$ ($p < .001$), with PPRA monitoring and evaluation at $r = .569$ and National Treasury reporting at $r = .537$, both significant at the same level. Correlations among the predictors themselves were much lower, between .357 and .375, matching the collinearity statistics and the 42.46 percent of dimension-specific variance the single component left behind. The shape of the matrix says something on its own. Each dimension associates with performance about half again as strongly as the dimensions associate with each other. Oversight of Kenyan state corporations is not a single pressure delivered through three channels. A corporation under intensive audit is only somewhat more likely to be under intensive regulatory evaluation, and each channel brings its own association with outcomes (Boykin et al., 2025).

4.6 Regression Analysis and Hypothesis Testing

Tables 8, 9, and 10 present the model summary, analysis of variance, and regression coefficients for procurement performance on the three compliance dimensions.

Table 8

Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	R ² Change	F Change	Sig. F Change
1	.741	.548	.540	0.32272	.548	65.979	.000

Note. Predictors: (Constant), National Treasury reporting, PPRA monitoring and evaluation, and audit and control. $df_1 = 3$, $df_2 = 163$.

Table 9

Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.615	3	6.872	65.979	.000
Residual	16.976	163	0.104		
Total	37.590	166			

Note. Dependent variable: performance of state corporations. Predictors: (Constant), National Treasury reporting, PPRA monitoring and evaluation, and audit and control.

Table 10

Regression Coefficients

Model	B	Std. Error	β	t	Sig.
(Constant)	2.230	0.098	—	22.683	.000
Audit and control	0.150	0.025	.347	5.899	.000
PPRA monitoring and evaluation	0.143	0.025	.334	5.683	.000
National Treasury reporting	0.129	0.025	.294	5.049	.000

Note. Dependent variable: performance of state corporations.

R was .741, and R² was .548 (Table 8), so the three dimensions together account for 54.8 percent of the variance in procurement performance among Kenyan state corporations. Adjusted R² of .540 shows that the figure holds once model complexity is penalized, and the narrow gap between the two rules out serious overfitting.

Compared with the dependent-variable standard deviation of 0.476 from the total sum of squares, the standard error of the estimate of 0.32272 represents a reduction in unexplained dispersion of roughly a third. The model was

significant overall, $F(3, 163) = 65.979$, $p < .001$ (Table 9). Each dimension contributed independently (Table 10). Audit and control returned $B = 0.150$ ($SE = 0.025$, $\beta = .347$, $t = 5.899$, $p < .001$), so a one-unit rise in the audit and control score corresponds to a 0.150-unit rise in performance with the remaining dimensions held constant. PPRA monitoring and evaluation gave $B = 0.143$ ($SE = 0.025$, $\beta = .334$, $t = 5.683$, $p < .001$), and National Treasury reporting $B = 0.129$ ($SE = 0.025$, $\beta = .294$, $t = 5.049$, $p < .001$). H_{01} , H_{02} , and H_{03} were each rejected at $p < .001$. The fitted model is:

$$Y = 2.230 + 0.150X_1 + 0.143X_2 + 0.129X_3 + \varepsilon$$

The standardized coefficients cluster tightly at .347, .334, and .294, and no dimension takes command of the model. They differ in how far each has been put into practice. Audit and control lead on both counts, most institutionalized at 4.09, and the largest coefficient at .347. PPRA monitoring and evaluation comes last on practice at 3.73 while placing second on weight, .013 behind audit in standardized terms. National Treasury reporting inverts this, sitting mid-range in practice at 3.92 and returning the smallest effect at .294. Regulatory monitoring, therefore, shows the widest gap between its contributions and the extent of its implementation.

That gap has an operational reading. Strengthening regulatory monitoring returns almost as much at the margin as strengthening audit, and the two start from very different places. Audit is close to exhausted. External audit drew no disagreement, and whatever remains to be gained lies in when and how well it is done, not whether it happens at all. Regulatory evaluation is nowhere near exhausted. Close to a fifth of respondents reported no PPRA evaluation over five years, leaving a substantial part of the sector outside the treatment altogether. Comparable weight combined with far lower coverage is where the unclaimed gain sits. The theoretical reading runs alongside. Etzioni (1961) tied effectiveness to congruence between the power an organization applies and the involvement that power calls forth, and three dimensions holding independent effects under simultaneous control indicate three genuinely different mechanisms, and not one mechanism observed three times. Audit detects. The regulator reviews and sets standards. The Treasury constrains fiscally. Distinct mechanisms cannot substitute for one another, which is why all three coefficients survive the simultaneous specification.

Two points of contact with the literature deserve comment. Bergman (2023) found no significant effect of regulatory audit on compliance in Swedish municipalities, whereas this study finds that oversight has a substantial impact on performance in Kenyan state corporations. Baseline conditions explain the difference better than contradiction does. A mature system that is already largely compliant leaves little additional audit work, whereas a system in which 42 percent of reviewed tender documents contain deficiencies (PPRA, 2025) presents many more correctable failures. Second, the 54.8 percent recorded here across 167 corporations in 20 ministry clusters is more cautious than the 70.5 percent reported by Osuto and Juma (2025) in one county, and more defensible for the sector, since it is distributed across three institutions rather than one.

A limit on all of this should be stated plainly. The design is cross-sectional, and the estimates establish an association, not the direction of causation. Better-performing corporations might attract oversight rather than result from it. Two features of the data make that reading less comfortable without ruling it out. External audit is constitutionally required, and not something an entity elects, and PPRA evaluation coverage follows the regulator's capacity more than the entity's performance.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study sought to estimate the impact of compliance measures on the public procurement performance of Kenyan state corporations, including compliance with audit and control, PPRA monitoring and evaluation, and National Treasury reporting. The study analyzed responses from 167 heads of procurement across 20 ministry clusters using principal component analysis, Pearson correlation, and multiple linear regression in SPSS Version 27. The three dimensions explained a total of 54.8 percent of the variance in procurement performance, $R = .741$, $F(3, 163) = 65.979$, $p < .001$. Each was an independent and significant determinant of procurement performance: audit and control at $\beta = .347$, PPRA monitoring and evaluation at $\beta = .334$, and National Treasury reporting at $\beta = .294$. The three null hypotheses were all rejected. No single pressure, or set of combined pressures, drives oversight of Kenyan state corporations; one does not compensate for another.

The descriptive results have a more direct implication. PPRA monitoring and evaluation is the least embedded dimension (3.73), yet it carries very nearly the weight of audit and control, the most embedded at 4.09. Nearly one-fifth of respondents said they had not had a regulatory evaluation in five years, and there was no disagreement on external audit, meaning the two elements are not equally used up, and the regulator gets the larger unclaimed gain. A second pattern runs through the data. Three-quarters of respondents reported that audit reports regularly identified discrepancies in implementing the procurement framework, yet the regulator reported persistent deficiencies at the national level. Evidently, detecting non-compliance and taking corrective action require different institutional capacities. In theory, the study applies Etzioni's compliance theory to procurement in a developing economy. His proposition that different kinds

of power produce different kinds of involvement is supported by three independent effects occurring simultaneously: effectiveness depends on the match-up between the two, and the resulting involvement affects the process's effectiveness.

5.2 Recommendations

PPRA should extend coverage before intensity. In a year, 45 procurement assessments are carried out, 38 entities are inspected, 23 are specially audited, and over 5 years, 1 in 5 corporations surveyed go uninspected. A published, risk-based evaluation cycle would set a frequency for each state corporation and consistently evaluate the highest-value contracts. Such weighting concentrates scarce regulatory capacity on the state corporations and semi-autonomous agencies that control more than 82 percent of the national contract value. The Authority should also advocate for specific consequences to be provided by statute in cases of refusal. An instrument of oversight that can be rejected is not one.

The first place to turn for state corporations is internal audit, not external audit. External audit is already at a practical saturation level and is not at the discretion of the corporation in any case. By contrast, internal audit showed the greatest variability, and some in the sample immediately dismissed it. Boards and audit committees should set a minimum frequency for internal audits of the procurement function and shift internal audits from the transaction-completion phase to the specification and evaluation phase. A closure register of findings, listing an owner and a deadline for each finding, would address the detection-without-correction pattern the data reveals.

For the National Treasury, the issue is information, not compliance, as adherence to its standards is near-uniform, but awareness of the link between debt management and those standards is much lower. It would be helpful if indicative schedules of exchequer releases were published to procuring entities at the beginning of each financial year to allow for planning of the next year's payments to be made to the realistically expected exchequer release date. The risk premium suppliers must include in their bids is reduced, as is the likelihood of delivery problems, when value for money and quality assurance are ultimately realized or lost.

Overall, the focus of measuring procurement performance primarily by conformity measures should be reconsidered. Observability-based conformity measures have supplanted efficiency and effectiveness measures. The results indicate that compliance activity accounts for 54.8% of performance variance, while 45.2% of performance falls outside the compliance architecture. Entity-level indicators of service delivery, value for money, and quality assurance should complement Kenya's compliance indicators.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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