

Journal of Finance and Accounting

ISSN Online: 2616-4965



Control Environment and Financial Accountability of Service State Corporations in Kenya: The Mediating Role of Internal Audit Effectiveness and the Moderating Role of Board of Governance

Miriam Njeri Nginga, Dr. Stella Korir & Dr. Stephen Oloo Magadi

ISSN: 2616-4965

Control Environment and Financial Accountability of Service State Corporations in Kenya: The Mediating Role of Internal Audit Effectiveness and the Moderating Role of Board of Governance

^{1*}Miriam Njeri Nginga, ²Dr. Stella Korir & ³Dr. Stephen Oloo Magadi

¹PhD Candidate, School of Business and Economics, Kabarak University, Kenya

^{2&3}Lecturers, School of Business and Economics, Kabarak University, Kenya

*Corresponding Author Email: mnnginga@gmail.com

How to cite this article: Nginga, M. N., Korir, S., & Magadi, S. O. (2026). Control Environment and Financial Accountability of Service State Corporations in Kenya: The Mediating Role of Internal Audit Effectiveness and the Moderating Role of Board of Governance. *Journal of Finance and Accounting*, 10 (7), 93-116. <https://doi.org/10.53819/81018102t5461>

Abstract

The study examined the effect of the control environment on the financial accountability of service state corporations in Kenya, with a focus on the mediating role of internal audit effectiveness and the moderating role of board of governance. The study was guided by Agency Theory, Stewardship Theory, and Systems Theory. A positivist philosophy and descriptive-explanatory research design were adopted. The target population comprised 82 service state corporations, from which 68 corporations were selected using proportionate stratified random sampling. Four officers from each corporation were targeted, resulting in 272 respondents. Data were collected using structured questionnaires and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM), bootstrapping and Hayes' PROCESS Model 14. The findings established that control environment had a positive and significant effect on internal audit effectiveness ($\beta = .835, p < .001$) and financial accountability ($\beta = .767, p < .001$). However, internal audit effectiveness did not significantly affect financial accountability ($\beta = -.029, p = .671$), and its mediating effect was not significant ($\beta = -.024, p = .673$). Board of governance significantly moderated the relationship between control environment and internal audit effectiveness ($\beta = .171, p < .001$), but did not significantly moderate the direct relationship between control environment and financial accountability ($\beta = -.106, p = .089$). The index of moderated mediation was significant (Index = .267, 95% CI [.180, .362]). The study concludes that board governance plays an important conditioning role in the indirect relationship between the control environment and financial accountability.

Keywords: Control Environment, Financial Accountability, Internal Audit Effectiveness, Board of Governance, Service State Corporations

1.0 Introduction

Financial accountability is a foundational element of good governance and effective public financial management, requiring public resources to be used for their intended purposes, safeguarded against loss, and reported transparently and accurately (International Federation of Accountants [IFAC], 2018;

<https://doi.org/10.53819/81018102t5461>

International Monetary Fund [IMF], 2021). Globally, the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2017) frames the internal control system as an integrated mechanism for achieving this accountability, comprising the control environment, control activities, risk assessment, information and communication, and monitoring activities. Of these, the control environment is widely regarded as the foundational component, since it establishes the ethical tone, organizational structure, and management philosophy within which all other controls operate (COSO, 2013). Evidence from OECD countries indicates that strong control environments are associated with reduced fraud, more reliable financial reporting, and greater public trust (Jensen, 2019; World Bank, 2020), while weaknesses in oversight and enforcement, as exposed during the 2008 global financial crisis, have prompted governments to strengthen audit committees, board independence, and accountability standards (OECD, 2021).

In Sub-Saharan Africa, reforms to public financial management have improved reporting frameworks in many countries, yet governance failures, weak internal controls, and high corruption persist in state-owned enterprises (African Development Bank [AfDB], 2020; Kanyane & Sausi, 2018). Studies in Nigeria, Zambia, and Uganda show that internal controls in the region tend to be reactive rather than preventive, undermined by weak boards, limited ethical culture, and inadequate oversight (Musah et al., 2022; Lombe & Mwenda, 2026; Muzaale et al., 2026). In Kenya, service state corporations are stewards of substantial public resources across sectors such as water, education, health, and transport, and are required under the Public Finance Management Act (2012) and the Mwongozo Code of Governance (2015) to maintain robust internal controls and board oversight. Despite these frameworks, reports from the Office of the Auditor-General (OAG) continue to document material financial reporting deficiencies, unsupported expenditure, and weak internal controls across these entities (OAG, 2022; 2025), pointing to a persistent gap between the design of control frameworks and their translation into effective accountability outcomes.

This persistent gap motivates three lines of inquiry that this study addresses. First, a contextual gap exists: although the control environment has been empirically linked to financial accountability in settings such as U.S. corporations (COSO, 2013), North Georgia churches (Kirby, 2020), Malaysian Islamic non-profits (Kamaruddin & Ramli, 2019), Indonesian public health units (Sutaryo et al., 2024), Nigerian ministries (Adeyemi & Olarewaju, 2019), Ugandan local governments (Higenyi, 2024), a Zambian Catholic parish (Njobvu, Kaira & Chowa, 2020), and Kenyan public secondary schools (Omondi, 2021), none of these studies examines statutory board-governed service state corporations, whose governance architecture differs materially from religious, ministerial, or devolved administrative settings. Second, a mechanism gap exists: while Msindwana and Ngwakwe (2022) confirmed that internal audit effectiveness directly strengthens financial accountability in South Africa's provincial treasuries, and related work showed that audit committees devote the greatest share of their oversight time to the control environment and monitoring domains (Weickgenannt, Hermanson & Sharma, 2021), no known study has tested internal audit effectiveness as the explanatory mechanism through which the control environment translates into financial accountability outcomes. Third, a conditioning gap exists: although board governance is theorized to shape how internal controls function in practice (Al-Dmour, Abbod & Al Qadi, 2023; Naciti, 2021), its role in strengthening or weakening the relationship between the control environment and financial accountability has not been empirically tested among Kenya's service state corporations.

This study addresses these gaps by developing and testing an integrated moderated-mediation model that examines the effect of the control environment on financial accountability in Kenya's service state corporations, with internal audit effectiveness as the mediating mechanism and board of governance as the moderating condition. In doing so, the study contributes to the literature in three ways: first, by extending control environment-financial accountability research into the distinct institutional setting of statutory

board-governed public corporations; second, by identifying internal audit effectiveness as an explanatory pathway linking the control environment to accountability outcomes; and third, by testing board of governance as a boundary condition that determines the conditions under which this relationship is strongest. The study is anchored on Agency Theory, Stewardship Theory, and Systems Theory.

1.1 Research Problem

Despite the statutory internal control and governance frameworks established under the Public Finance Management Act (2012) and the Mwongozo Code of Governance for State Corporations (2015), Kenya's service state corporations continue to exhibit chronic and worsening financial accountability failures. The Office of the Auditor-General (OAG, 2025) reports an accumulation of KSh 1.168 trillion in unaccounted-for public funds between 2020 and 2024, an average of KSh 233.7 billion annually and KSh 9.06 billion per service-related corporation, with a highly volatile trend; 2023 alone recorded an unprecedented KSh 852.8 billion unaccounted for, averaging KSh 31.59 billion per entity. Of 129 audit reports reviewed over the same period, only 39 (30.2%) received unqualified opinions. Compounding this, the 2022 Public Expenditure and Financial Accountability (PEFA) assessment found that more than 60% of audit recommendations issued to state corporations were only partially implemented or ignored altogether (Public Financial Management Reform Secretariat [PFMR], 2022). These failures are manifested in recurrent patterns: unsupported Property, Plant and Equipment, such as the Kenya National Highways Authority's KSh 726.6 billion in 2023, contrary to IPSAS 17 and Section 68(2)(k) of the PFM Act; long-outstanding doubtful receivables, such as Uwezo Fund's KSh 5.17 billion in 2024; unremitted statutory deductions, such as MTRH's KSh 589 million in 2023; stalled projects and pending bills, such as the National Youth Service's KSh 15.88 billion in 2023; and irregular procurement, such as KEMSA's KSh 762 million in 2021. Existing Kenyan and regional studies have largely examined internal control components and financial performance in isolation, with limited attention to how the quality of the control environment operates through the internal audit function, or how board governance conditions this relationship (Geke et al., 2025; Gassare & Wekesa, 2025). Given that service state corporations contribute over 10% of Kenya's GDP, this represents a critical and underexamined gap because it remains unclear whether, and under what governance conditions, a strong control environment is converted into genuine financial accountability through an effective internal audit function. This study addresses this gap.

2.0 Theoretical Framework and Hypothesis Development

This study draws on Agency Theory, Stewardship Theory, and Systems Theory to develop a moderated-mediation model linking control environment, internal audit effectiveness, board of governance, and financial accountability. Agency Theory (Jensen & Meckling, 1976, as extended by Khan, Mihret & Muttakin, 2021; Panda & Leepsa, 2017) frames state corporations as a principal-agent relationship between the state and its managers, in which internal controls and board oversight function to reduce information asymmetry and align managerial conduct with the public interest. Stewardship Theory (Davis, Schoorman, & Donaldson, 1997, as revisited in Hernandez, 2008; Madison, Kellermanns & Munyon, 2017) complements this by proposing that a sound control environment, reinforced by a supportive rather than purely policing board, cultivates trust-based conduct that promotes accountability beyond mere compliance. Notably, Msindwana and Ngwakwe (2022) anchor their South African study of internal audit effectiveness and financial accountability on this same theory. Systems Theory (von Bertalanffy, 1950, as revitalized in Arnold & Wade, 2015) conceptualizes the control environment, internal audit function, and board governance as interdependent subsystems whose integration and feedback loops, rather than their isolated presence, determine overall accountability outcomes (Mele, Pels & Polese, 2010; Bui & de Villiers, 2023).

Control Environment, Internal Audit Effectiveness, and Financial Accountability

The control environment, comprising integrity and ethical values, board oversight, management philosophy, organizational structure, and human resource policies, is theorized to shape financial accountability both directly and through the internal audit function it enables. Audit committees have been shown to devote the greatest share of their oversight time to the control environment and monitoring domains (Weickgenannt, Hermanson & Sharma, 2021), while the strength and independence of the audit committee are recognized determinants of internal audit function effectiveness (Bananuka et al., 2021). This suggests that a strong control environment, particularly board-level commitment to ethics and oversight, creates the organizational conditions, resources, and independence required for internal audit to function effectively.

A substantial body of empirical evidence also links the control environment directly to financial accountability outcomes. COSO's (2013) foundational analysis of U.S. corporate entities found that strong ethical cultures, independent boards, and accountable structures produced higher-quality financial reporting. Kirby (2020), studying North Georgia Baptist churches, found that ethical leadership and management integrity were strongly associated with financial stewardship, and Kamaruddin and Ramli (2019) reported similar findings among Malaysian Islamic non-profits. Sutaryo et al. (2024) found that weaknesses in leadership commitment and organizational structure limited accountability in Indonesian public health units, and Adeyemi and Olarewaju (2019) confirmed a significant positive effect of control environment factors on financial accountability among Nigerian public sector ministries. Higenyi (2024) reported comparable findings in Ugandan local governments, while Njobvu, Kaira and Chowa (2020) found that weak ethical enforcement and confused governance structures produced poor accountability in a Zambian Catholic parish. In Kenya, Omondi (2021) found similar patterns in public secondary schools. However, none of these studies examine statutory board-governed state corporations, whose governance architecture, board structures, and public accountability obligations differ materially from religious, ministerial, devolved, or school-based settings. Based on the foregoing, this study proposes:

H1: Control environment has a positive effect on internal audit effectiveness in Kenya's service state corporations.

H2: Control environment has a positive effect on financial accountability of Kenya's service state corporations.

Internal Audit Effectiveness and Financial Accountability

Internal audit effectiveness, defined as the extent to which the internal audit function provides reliable assurance, detects control deficiencies, and supports organizational improvement (Cantù, 2025), is theorized as a direct driver of financial accountability in public sector organizations. Msindwana and Ngwakwe (2022), examining the nine provincial treasuries of South Africa, found that internal audit significantly enhanced financial accountability across all expenditure programmes and recommended that government departments treat internal audit as a monitoring tool for accountability and service delivery performance rather than a punitive exercise. Complementing this, Moodley, Ackers and Odendaal (2021) trace how the internal audit function in the South African public sector has evolved from a narrow compliance watchdog toward a value-adding partner in organizational performance, while Cantù (2025) similarly documents internal audit's expanding role in providing assurance on the adequacy of governance, risk management, and internal controls in public entities. These findings suggest that a well-resourced, independent, and competent internal audit function directly strengthens the reliability and integrity of financial reporting and resource stewardship. In the context of Kenya's service state corporations, where

audit qualifications and unaccounted expenditure remain pervasive despite the existence of internal audit units, it is expected that the effectiveness, rather than the mere presence, of the internal audit function drives accountability outcomes. Thus:

H3: Internal audit effectiveness has a positive effect on financial accountability of Kenya's service state corporations.

Mediating Role of Internal Audit Effectiveness

A sound control environment does not automatically produce financial accountability; it must be operationalised through mechanisms that test, verify, and enforce the standards it establishes. Internal audit is theorized as this mechanism: it is the function through which the ethical tone, organizational structure, and management commitment embedded in the control environment are translated into verified and reliable financial outcomes. This mediating logic parallels precedents in the wider internal-control literature, in which information quality has been shown to mediate the relationship between audit quality, internal control, and financial resilience in public sector organizations (Lustrilanang et al., 2023), and organizational culture has been shown to mediate the relationship between accounting information systems and internal audit quality (Alawaqleh, 2021). Consistent with this reasoning, a control environment that establishes high ethical standards and board commitment but is not matched by an effective internal audit function is unlikely to yield strong accountability outcomes, since deficiencies will go undetected and uncorrected. Conversely, an effective internal audit function operating within a weak control environment lacks the institutional support, independence, and resourcing needed to exert meaningful influence. Internal audit effectiveness is therefore expected to serve as the pathway through which control environment quality is converted into financial accountability, a mechanism that has not yet been tested in Kenya's service state corporations. Accordingly:

H4: Internal audit effectiveness mediates the relationship between control environment and financial accountability of Kenya's service state corporations.

Moderating Role of Board of Governance

The board of governance is the highest decision making and oversight authority within a state corporation, and its independence, competence, and engagement are expected to condition the strength of the control environment-financial accountability relationship. An independent and competent board strengthens the enforcement of control environment standards by ensuring that internal controls exist and function as intended, that the internal audit process operates with sufficient authority, and that financial information is transparent (Omondi & Muturi, 2019). Conversely, boards weakened by political interference or limited independence may fail to hold management accountable even where a formally sound control environment exists on paper, resulting in waste, fraud, or abuse (Njoroge, 2020). Empirical evidence supports this conditioning role: effective boards have been shown to substantially reduce agency conflict and improve accountability outcomes, while weak boards permit inefficiency and opportunism to persist (Al-Dmour, Abbod & Al Qadi, 2023; Musyoka & Oima, 2020), and boards that adopt a stewardship-style, collaborative approach to oversight are associated with stronger internal control effectiveness and accountability culture (Naciti, 2021). This suggests that the same control environment may produce markedly different accountability outcomes depending on the quality of the governing board overseeing it, a proposition not yet tested empirically among Kenya's service state corporations. Consequently:

H5: Board of governance moderates the relationship between control environment and financial accountability of service state corporations in Kenya.

H6: Board of governance moderates the relationship between control environment and internal audit effectiveness of service state corporations in Kenya.

H7: Board of governance moderates the indirect relationship between control environment and financial accountability through internal audit effectiveness of service state corporations in Kenya.

Collectively, H1 through H7 constitute a moderated-mediation model in which control environment influences financial accountability both directly and indirectly through internal audit effectiveness, while board of governance conditions the strength of the direct control environment-financial accountability relationship (H5), the control environment-internal audit effectiveness relationship (H6), and the indirect relationship through internal audit effectiveness (H7).

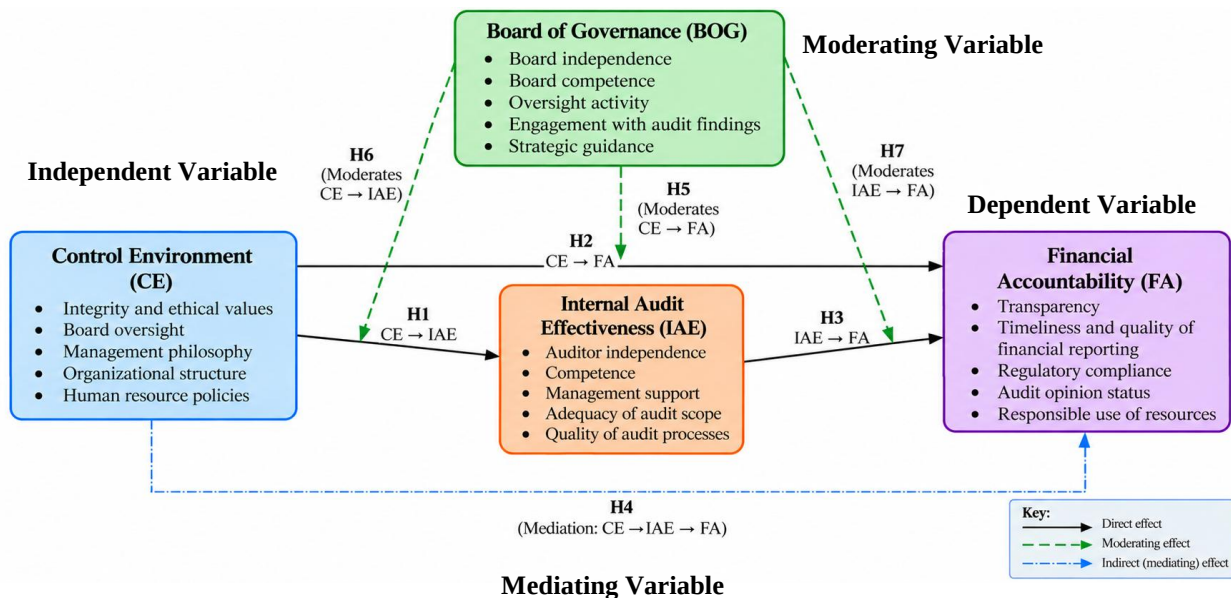


Figure 1: Conceptual Model

3.0 Research Methodology

This study employed a positivist research philosophy and a descriptive-explanatory research design to test the proposed moderated-mediation model using primary quantitative data. The population comprised 82 service state corporations under the Inspectorate of State Corporations (ISC, 2025), distributed across 16 parent ministries, with each corporation treated as the unit of analysis. Using Yamane's (1967) formula for finite populations at a 5% margin of error, a sample of 68 service state corporations was selected using proportionate stratified random sampling based on ministry size. Within each sampled corporation, four key officers involved in financial management, internal control, and governance processes—Finance Officers, Internal Auditors, Accountants, and Procurement Officers—were purposively selected, yielding a target of 272 respondents. These officers were considered appropriate sources of information about control environment practices, internal audit operations, board governance, and financial accountability.

Data were collected using a structured, self-administered questionnaire with items measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Control environment was measured using indicators adapted from the COSO (2013) framework, covering integrity and ethical values, board oversight, management philosophy, organizational structure, and human resource policies. Internal audit effectiveness, the mediating variable, was measured using items adapted from Msindwana and Ngwakwe (2022) and related literature and covered audit planning and execution, compliance testing, reporting and

follow-up, auditor independence, and professional competence. Board of governance, the moderating variable, was measured using indicators adapted from the Mwongozo Code of Governance (2015) and related governance literature and covered board independence, competence, oversight, and accountability. Financial accountability was measured using indicators of transparency, quality of financial reporting, regulatory compliance, economical and efficient use of public resources, and minimization of financial irregularities. The instrument was pilot-tested before the main survey, while reliability and validity were assessed using Cronbach's alpha, composite reliability, average variance extracted, and discriminant validity tests.

Data were analysed using SPSS Version 29 and SmartPLS 4. Descriptive statistics, data screening, common method bias assessment, and multicollinearity tests were conducted before structural model estimation. Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to test the direct, mediating, moderating, and moderated-mediation relationships. Direct effects (H1–H3) were assessed using standardized path coefficients, bootstrapping, and significance levels. The mediating effect of internal audit effectiveness (H4) was evaluated using the bootstrapped indirect effect. The moderating effects of board of governance on the control environment–financial accountability relationship (H5) and control environment–internal audit effectiveness relationship (H6) were assessed using interaction effects. Finally, the moderated mediation hypothesis (H7) was tested using Hayes' PROCESS Macro Version 5, Model 14, with 5,000 bootstrap samples and a 95% confidence interval. The index of moderated mediation was used to determine whether the indirect effect varied significantly across levels of board of governance. All hypotheses were evaluated at the 5% significance level.

4.0 Data Analysis and Results

The conceptual model examined direct, mediating, moderating, and moderated-mediation relationships, resulting in a relatively complex structural model. Specifically, it examined the direct effects of Control Environment on Internal Audit Effectiveness and Financial Accountability, the effect of Internal Audit Effectiveness on Financial Accountability, the mediating role of Internal Audit Effectiveness, and the moderating role of Board of Governance. Given the study's predictive orientation and inclusion of mediation and moderation effects, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed as the principal analytical technique (Hair et al., 2022). PLS-SEM enabled simultaneous assessment of the measurement and structural models. Data were analysed using IBM SPSS Statistics Version 29 and SmartPLS 4. SPSS was used for data screening and cleaning, descriptive statistics, normality assessment, and preliminary correlation analysis. Descriptive statistics included frequencies, percentages, means, and standard deviations to summarize the study variables and respondent characteristics.

The measurement model was assessed in SmartPLS 4 using indicator reliability; internal consistency reliability based on Cronbach's alpha and Composite Reliability (CR); convergent validity based on Average Variance Extracted (AVE); and discriminant validity based on the Heterotrait-Monotrait (HTMT) ratio and the Fornell-Larcker criterion. The structural model was evaluated using path coefficients (β), coefficient of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and Variance Inflation Factor (VIF). Statistical significance was assessed through bootstrapping using 5,000 resamples. The direct relationships in H1–H3 were assessed using structural path coefficients. H4 was examined using the bootstrapped indirect effect of Control Environment on Financial Accountability through Internal Audit Effectiveness. H5 and H6 were tested using interaction terms to determine whether Board of Governance moderated the Control Environment–Financial Accountability and Control Environment–Internal Audit Effectiveness relationships, respectively. H7 was assessed using conditional indirect effects to determine

whether Board of Governance moderated the indirect relationship between Control Environment and Financial Accountability through Internal Audit Effectiveness. Statistical significance was assessed at the 5% level ($p < 0.05$). The results were presented in tables and figures covering descriptive statistics, measurement-model assessment, structural-model results, mediation, moderation, and moderated-mediation analysis.

Table 1: Descriptive Statistics

Statement	Mean	SD	CV	SE
CE1: Our corporation consistently promotes integrity and ethical values in the conduct of its operations.	2.945	0.891	0.303	0.054
CE2: Our Board of Governance provides effective oversight of the corporation's control environment.	2.956	0.865	0.293	0.052
CE3: Management's philosophy and operating style support effective internal control practices.	2.978	0.899	0.302	0.054
CE4: The organizational structure clearly defines authority, responsibility, and accountability.	3.004	0.941	0.313	0.057
CE5: The corporation maintains human resource policies that support effective internal control.	2.989	0.913	0.305	0.055
Summary Statistics: Control Environment	2.974	0.902	0.303	0.055
IAE1: Our internal audit function conducts audit assignments based on systematic planning and executes them effectively.	2.919	1.292	0.442	0.078
IAE2: Our internal audit function effectively tests whether financial transactions and procedures comply with established policies and regulations.	2.993	1.225	0.409	0.074
IAE3: Our internal audit function provides timely audit reports and follows up on identified audit findings and recommendations.	2.860	1.301	0.455	0.079
IAE4: Our internal auditors perform their duties independently without inappropriate interference from management or other officers.	2.915	1.308	0.449	0.079
IAE5: Our internal audit staff possess the knowledge, skills, and professional competence required to perform their responsibilities effectively.	2.816	1.318	0.468	0.080
Summary Statistics: Internal Audit Effectiveness	2.901	1.289	0.444	0.077

BOG1: Our Board of Governance exercises independent oversight of management without undue interference or influence.	2.879	1.313	0.456	0.079
BOG2: Members of our Board of Governance possess the knowledge and expertise required to effectively oversee financial management and accountability.	2.779	1.310	0.471	0.079
BOG3: Our Board of Governance regularly monitors management's compliance with financial controls and governance requirements.	3.018	1.276	0.423	0.077
BOG4: Our Board of Governance takes appropriate action when weaknesses or violations of financial controls are identified.	2.838	1.343	0.473	0.081
BOG5: Our Board of Governance holds management accountable for financial management practices and unresolved audit findings.	2.816	1.330	0.472	0.080
Summary Statistics: Board of Governance	2.866	1.314	0.459	0.079
FA1: Our corporation provides transparent and accessible financial information to relevant stakeholders.	2.857	1.336	0.467	0.081
FA2: Our corporation prepares financial reports that accurately reflect its financial transactions and position.	2.956	1.308	0.443	0.079
FA3: Our corporation consistently complies with applicable financial management laws, regulations, and reporting requirements.	2.732	1.285	0.470	0.078
FA4: Our corporation ensures that public financial resources are utilized economically, efficiently, and for their intended purposes.	2.761	1.314	0.476	0.079
FA5: Our corporation maintains financial practices that minimize irregularities, unsupported expenditure, and misuse of public resources.	2.820	1.304	0.462	0.079
Summary Statistics: Financial Accountability	2.825	1.309	0.464	0.079

The findings indicated that the study constructs recorded moderate overall perceptions, with indicator mean scores ranging from 2.732 to 3.018. Control Environment recorded the highest overall construct mean ($M = 2.974$, $SD = 0.902$), followed by Internal Audit Effectiveness ($M = 2.901$, $SD = 1.289$), Board of Governance ($M = 2.866$, $SD = 1.314$), and Financial Accountability ($M = 2.825$, $SD = 1.309$). The relatively

higher variability observed for Internal Audit Effectiveness, Board of Governance, and Financial Accountability indicated greater differences in respondents' perceptions than those observed for Control Environment. Overall, the descriptive results suggested moderate perceptions of control environment, internal audit effectiveness, board governance, and financial accountability among the sampled service state corporations.

Common Method Bias Assessment

Because data for all study constructs were collected using a single questionnaire, Harman's single-factor test was conducted to assess potential common method bias (Podsakoff et al., 2003; Podsakoff & Organ, 1986). All measurement items were subjected to an unrotated exploratory factor analysis using principal component extraction. The analysis extracted three factors with eigenvalues greater than one. The first factor accounted for 42.515% of the total variance, which was below the recommended threshold of 50%. Accordingly, common method bias was not considered a serious threat to the validity of the study findings.

Table 2: Results of HTMT

Constructs	BOG	CE	FA	IAE
Board of Governance (BOG)	—			
Control Environment (CE)	0.105	—		
Financial Accountability (FA)	0.151	0.767	—	
Internal Audit Effectiveness (IAE)	0.126	0.813	0.665	—

The Heterotrait-Monotrait (HTMT) ratio was used to assess discriminant validity among the study constructs. As presented in Table 2, the HTMT values ranged from 0.105 to 0.813, with all values remaining below the recommended threshold of 0.85 (Henseler et al., 2015). The highest HTMT value was observed between Control Environment and Internal Audit Effectiveness (0.813), followed by the relationship between Control Environment and Financial Accountability (0.767). The remaining HTMT values were substantially lower. Because all HTMT values were below the recommended cutoff, the constructs exhibited satisfactory discriminant validity, indicating that Board of Governance, Control Environment, Financial Accountability, and Internal Audit Effectiveness were empirically distinct and measured different theoretical concepts.

Measurement Model Assessment

The measurement model was evaluated before the structural relationships were tested to ensure that the latent constructs were measured reliably and validly. In Partial Least Squares Structural Equation Modeling (PLS-SEM), measurement model assessment constitutes the first stage of analysis and is followed by structural model evaluation (Hair et al., 2022). The measurement model was assessed by examining indicator reliability, internal consistency reliability, and convergent validity based on factor loadings, Cronbach's alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE).

Table 3: Measurement Model Results

Constructs	Items	Factor Loadings	Cronbach's Alpha (CA)	Composite Reliability (CR)	AVE
Board of Governance (BOG)	BOG1	0.795	0.882	0.912	0.674
	BOG2	0.891			
	BOG3	0.792			
	BOG4	0.809			
	BOG5	0.814			
Control Environment (CE)	CE1	0.900	0.932	0.949	0.787
	CE2	0.886			
	CE3	0.892			
	CE4	0.880			
	CE5	0.877			
Financial Accountability (FA)	FA1	0.859	0.888	0.918	0.690
	FA2	0.830			
	FA3	0.829			
	FA4	0.821			
	FA5	0.815			
Internal Audit Effectiveness (IAE)	IAE1	0.814	0.872	0.907	0.661
	IAE2	0.808			
	IAE3	0.837			
	IAE4	0.768			
	IAE5	0.836			

As shown in Table 3, all indicator loadings ranged from 0.768 to 0.900, exceeding the recommended threshold of 0.70 and demonstrating satisfactory indicator reliability. Cronbach's alpha values ranged from 0.872 to 0.932, while composite reliability values ranged from 0.907 to 0.949, exceeding the recommended minimum threshold of 0.70 and confirming satisfactory internal consistency reliability. The AVE values ranged from 0.661 to 0.787, all of which were above the recommended threshold of 0.50, thereby

<https://doi.org/10.53819/81018102t5461>

establishing adequate convergent validity. These results indicated that the measurement items reliably represented their respective constructs and that each construct explained a substantial proportion of indicator variance. Consequently, the four constructs satisfied the recommended reliability and convergent validity criteria and were therefore considered adequate for subsequent structural model assessment.

Structural Model Evaluation

The structural model was evaluated using the coefficient of determination (R^2) and predictive relevance ($Q^2_{predict}$), following the guidelines of Hair et al. (2022). The coefficient of determination (R^2) assessed the explanatory power of the model, while predictive relevance was evaluated using the $Q^2_{predict}$ values obtained from the SmartPLS 4 predictive assessment.

Table 4: Coefficient of Determination (R^2) and Predictive Relevance ($Q^2_{predict}$)

Endogenous Construct	R^2	Interpretation	$Q^2_{predict}$
Internal Audit Effectiveness (IAE)	0.558	Moderate	0.548
Financial Accountability (FA)	0.561	Moderate	0.484

The results indicated that Internal Audit Effectiveness (IAE) recorded an R^2 value of 0.558, implying that 55.8% of its variance was explained by the predictors specified in the structural model, including Control Environment and the corresponding moderation relationship involving Board of Governance. This indicated moderate explanatory power. Similarly, Financial Accountability (FA) achieved an R^2 value of 0.561, indicating that 56.1% of its variance was explained by the predictors included in the structural model, including Control Environment, Internal Audit Effectiveness, and the specified relationships involving Board of Governance. This also indicated moderate explanatory power. Predictive relevance was assessed using the $Q^2_{predict}$ values generated through the SmartPLS 4 predictive assessment. The $Q^2_{predict}$ values were 0.548 for Internal Audit Effectiveness and 0.484 for Financial Accountability. Both values were greater than zero, indicating that the model demonstrated predictive relevance for the two endogenous constructs. These findings indicated that the proposed structural model demonstrated adequate explanatory and predictive capability and was therefore suitable for subsequent hypothesis testing.

Hypotheses Testing

Figure 2 presents the final structural model, including the standardized path coefficients, factor loadings, interaction effects, and coefficients of determination (R^2) for the endogenous constructs, whereas Table 5 presents the detailed results of the direct hypothesis testing.

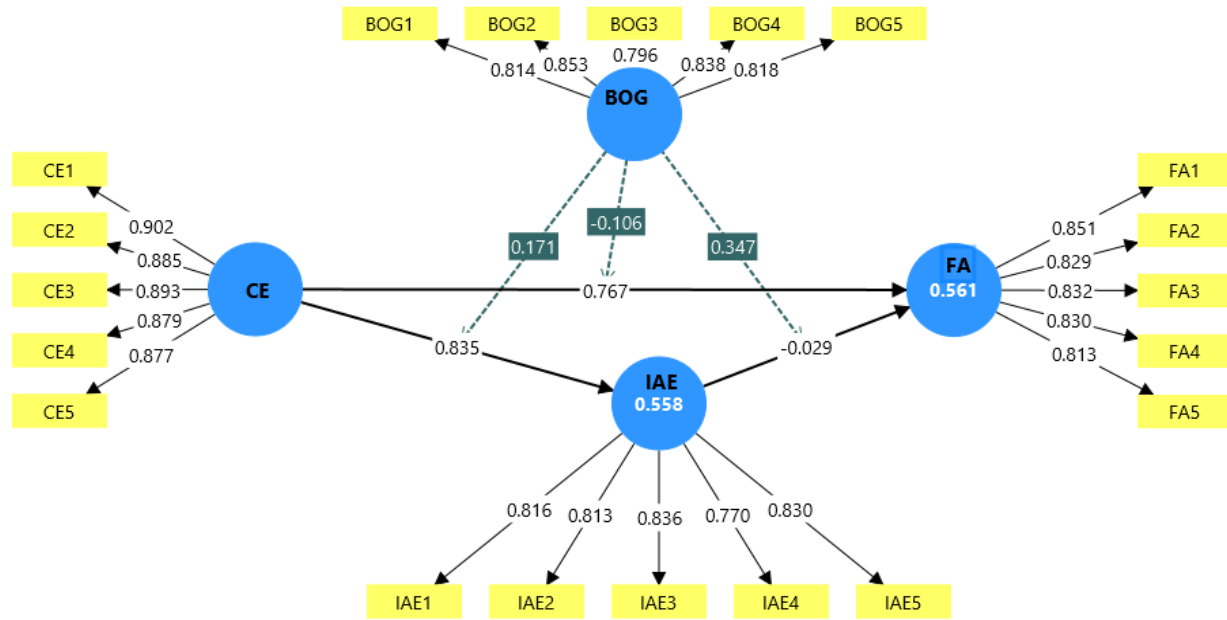


Figure 2: Final Structural Model with Path Coefficients, Factor Loadings and R²

Testing of the Direct Effects

The direct effects were examined using the bootstrapping procedure in Partial Least Squares Structural Equation Modelling (PLS-SEM). The assessment focused on the significance of the structural path coefficients based on the standardized beta coefficients (β), t-statistics, and p-values. A hypothesis was considered supported when the path coefficient was statistically significant at $p < 0.05$. The direct effect results are presented in Table 5.

Table 5: Testing of the Direct Effects

Hypothesis	Structural Path	Path Coefficient (β)	t-value	p-value
H1	Control Environment → Internal Audit Effectiveness	0.835	20.346	<0.001
H2	Control Environment → Financial Accountability	0.767	10.498	<0.001
H3	Internal Audit Effectiveness → Financial Accountability	-0.029	0.424	0.671

The results indicated that Control Environment had a significant positive effect on Internal Audit Effectiveness ($\beta = 0.835$, $t = 20.346$, $p < 0.001$), supporting H1. Similarly, Control Environment had a significant positive effect on Financial Accountability ($\beta = 0.767$, $t = 10.498$, $p < 0.001$), supporting H2. However, Internal Audit Effectiveness had no statistically significant effect on Financial Accountability ($\beta = -0.029$, $t = 0.424$, $p = 0.671$). Consequently, H3 was not supported.

Testing of the Mediation Effect

The mediation effect was examined using the bootstrapping procedure in SmartPLS 4. The analysis tested whether Internal Audit Effectiveness mediated the relationship between Control Environment and Financial Accountability through the specific indirect effect. The interpretation of mediation considered both the direct and indirect effects, following the mediation classification proposed by Zhao et al. (2010).

Table 6: Testing of the Mediation Effect

Relationship	Direct Effect	Indirect Effect	Mediation Type (Zhao et al., 2010)
CE → IAE → FA	$\beta = 0.767, p < 0.001$ (Significant)	$\beta = -0.024, p = 0.673$ (Not Significant)	Direct-only (no mediation)

As presented in Table 6, Internal Audit Effectiveness did not significantly mediate the relationship between Control Environment and Financial Accountability ($\beta = -0.024, t = 0.423, p = 0.673$). The direct effect of Control Environment on Financial Accountability was also considered in the mediation assessment and was statistically significant, while the indirect effect through Internal Audit Effectiveness was not statistically significant. Because the indirect effect was not significant, the mediation condition was not established. Therefore, H4 was not supported.

Testing of the Moderating Effects (H5 & H6)

The moderating effects were examined using the bootstrapping procedure in SmartPLS 4. The analysis assessed whether Board of Governance (BOG) significantly conditioned relationships between Control Environment (CE) and the endogenous constructs. The moderating effects were evaluated using the interaction terms $BOG \times CE \rightarrow$ Financial Accountability, $BOG \times CE \rightarrow$ Internal Audit Effectiveness, and $BOG \times IAE \rightarrow$ Financial Accountability. A moderating effect was considered statistically significant when the interaction effect had a p value below 0.05.

Table 7: Testing of the Moderating Effects

Hypothesis	Moderating Relationship	Path Coefficient (β)	t-value	p-value	Decision
H5	$BOG \times CE \rightarrow FA$	-0.106	1.699	0.089	Not Supported
H6	$BOG \times CE \rightarrow IAE$	0.171	3.758	<0.001	Supported

The results indicated that the interaction between Board of Governance and Control Environment did not significantly moderate the relationship between Control Environment and Financial Accountability ($\beta = -0.106, t = 1.699, p = 0.089$). Because the p value exceeded the 0.05 significance level, H5 was not supported. This result indicated that Board of Governance did not significantly condition the direct relationship between Control Environment and Financial Accountability. In contrast, the interaction between Board of Governance and Control Environment significantly affected Internal Audit Effectiveness ($\beta = 0.171, t = 3.758, p < 0.001$). Therefore, H6 was supported, showing that Board of Governance significantly moderated the relationship between Control Environment and Internal Audit Effectiveness.

Testing of the Moderated Mediation Effects (H7)

The moderated mediation effect was examined using Hayes' PROCESS Macro Version 5 (Model 14) with 5,000 bootstrap samples. The findings presented in Table 8 indicated that Control Environment (CE) had a significant positive effect on Internal Audit Effectiveness (IAE) ($\beta = 0.961$, $t = 17.736$, $p < .001$), explaining 53.8% of its variance ($R^2 = 0.538$). In the second-stage model, Control Environment exerted a significant positive direct effect on Financial Accountability (FA) ($\beta = 1.094$, $t = 11.222$, $p < .001$). Internal Audit Effectiveness had no significant direct effect on Financial Accountability ($\beta = -0.018$, $t = -0.264$, $p = .792$), while Board of Governance (BoG) also had no significant direct effect on Financial Accountability ($\beta = 0.067$, $t = 1.629$, $p = .104$). However, the interaction between Internal Audit Effectiveness and Board of Governance was positive and statistically significant ($\beta = 0.278$, $t = 5.710$, $p < .001$), demonstrating that Board of Governance significantly moderated the relationship between Internal Audit Effectiveness and Financial Accountability. The overall model explained 55.7% of the variance in Financial Accountability ($R^2 = 0.557$). The conditional indirect effect of Control Environment on Financial Accountability through Internal Audit Effectiveness was negative and significant at low levels of Board of Governance (Effect = -0.356 , BootSE = 0.097 , 95% CI $[-0.556, -0.175]$), insignificant at the mean level (Effect = -0.035 , BootSE = 0.068 , 95% CI $[-0.170, 0.095]$), and positive and significant at high levels (Effect = 0.285 , BootSE = 0.075 , 95% CI $[0.139, 0.434]$). The Index of Moderated Mediation was positive and statistically significant (Index = 0.267 , BootSE = 0.045 , 95% CI $[0.180, 0.362]$). Because the bootstrap confidence interval excluded zero, the results confirmed that the indirect effect of Control Environment on Financial Accountability through Internal Audit Effectiveness varied significantly across levels of Board of Governance. Therefore, the moderated mediation hypothesis was supported.

Table 8: Testing of the Moderated Mediation Effects

Predictors	β	SE	t	p	95% Bootstrapping	
					LLCI	ULCI
Y = IAE						
Constant	-2.857	0.167	-17.127	.000	-3.185	-2.529
X = CE	0.961	0.054	17.736	.000	0.854	1.067
R²	0.538					
Y = FA						
Constant	-0.465	0.297	-1.566	.119	-1.049	0.120
X = CE	1.094	0.098	11.222	.000	0.902	1.286
Mediator = IAE	-0.018	0.070	-0.264	.792	-0.156	0.119
Moderator = BoG	0.067	0.041	1.629	.104	-0.014	0.148
Int ₁ = IAE $\times$ BoG	0.278	0.049	5.710	.000	0.182	0.374
R²	0.557					
Board of Governance	Effect	BootSE	BootLLCI	BootULCI		
-1 SD (-1.2662)	-0.356	0.097	-0.556	-0.175		
Mean (-0.0662)	-0.035	0.068	-0.170	0.095		
+1 SD (1.1338)	0.285	0.075	0.139	0.434		
Moderator	Index	BootSE	BootLLCI	BootULCI		
BoG	0.267	0.045	0.180	0.362		

Note: CE = Control Environment; IAE = Internal Audit Effectiveness; FA = Financial Accountability; BoG = Board of Governance. PROCESS Model 14 was estimated using 5,000 bootstrap samples and 95% confidence intervals.

Following the recommendation of Finsaas and Goldstein (2021), the Johnson–Neyman technique was employed to determine the range over which Board of Governance significantly moderated the relationship between Internal Audit Effectiveness and Financial Accountability. The analysis indicated two transition points at approximately $\text{BoG} = -0.529$ and $\text{BoG} = 0.508$. The conditional effect of Internal Audit Effectiveness on Financial Accountability was statistically significant at lower levels of Board of Governance below the first transition point and at higher levels above the second transition point. Between the two transition points, the 95% confidence interval included zero, indicating that the conditional effect was not statistically significant. As shown in Figure 3, the Johnson–Neyman plot illustrates how the relationship between Internal Audit Effectiveness and Financial Accountability changed across levels of Board of Governance.

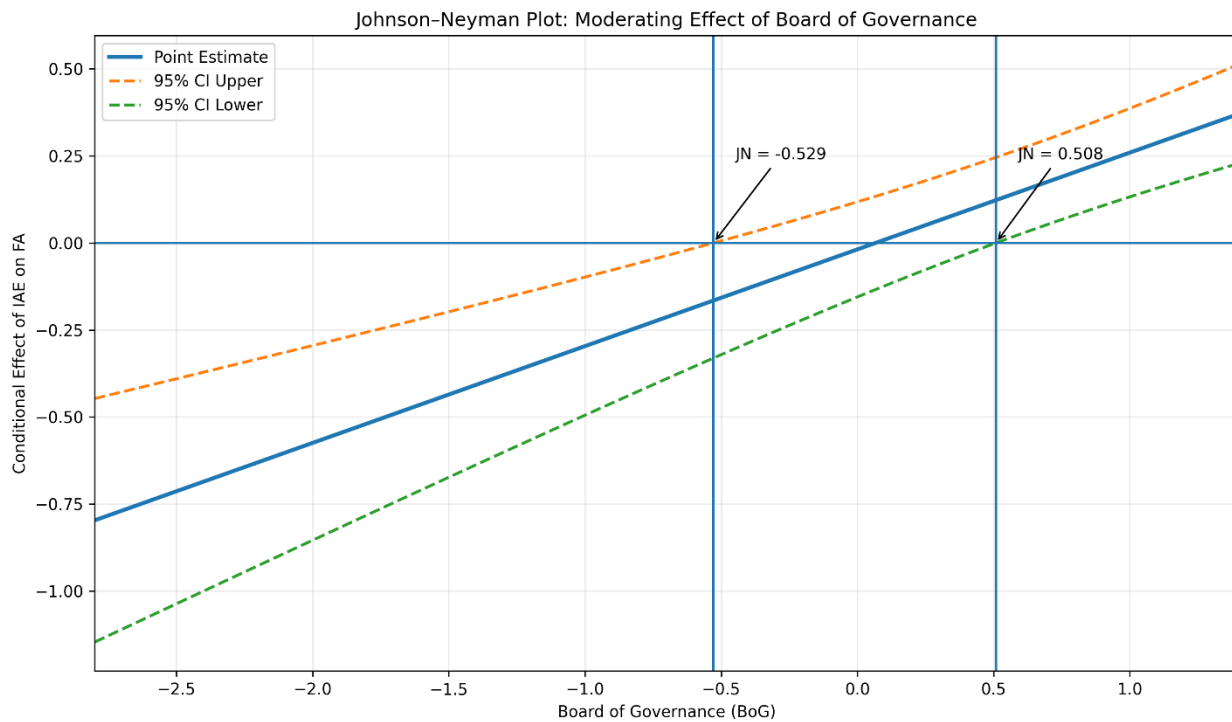


Figure 3: Johnson–Neyman Plot of the Moderating Effect of Board of Governance on the Relationship between Internal Audit Effectiveness and Financial Accountability

5.0 Discussion of the Findings

This study examined the relationship between control environment and financial accountability among service state corporations in Kenya, while assessing the mediating role of internal audit effectiveness and the moderating role of board of governance. The study was anchored on Agency Theory, Stewardship Theory, and Systems Theory. The findings showed that control environment significantly influenced internal audit effectiveness and financial accountability, whereas internal audit effectiveness did not have a significant direct effect on financial accountability. Board of governance significantly moderated the control environment–internal audit effectiveness relationship but did not significantly moderate the direct control environment–financial accountability relationship. The moderated-mediation analysis further established that board of governance significantly conditioned the indirect relationship between control environment and financial accountability through internal audit effectiveness. Collectively, these findings indicated that

accountability within service state corporations depended not only on individual control mechanisms but also on the interaction between governance and control subsystems.

Table 9: Overview of the Findings of the Study

Relationship	PLS-SEM Result	Hypothesis	Interpretation
Control Environment → Internal Audit Effectiveness	Significant ($\beta = 0.835, p < .001$)	H1: Supported	Control environment significantly influenced internal audit effectiveness.
Control Environment → Financial Accountability	Significant ($\beta = 0.767, p < .001$)	H2: Supported	Control environment significantly influenced financial accountability.
Internal Audit Effectiveness → Financial Accountability	Not significant ($\beta = -0.029, p = .671$)	H3: Not Supported	Internal audit effectiveness did not have a significant direct effect on financial accountability.
CE → IAE → FA	Indirect effect not significant ($\beta = -0.024, p = .673$)	H4: Not Supported	Internal audit effectiveness did not mediate the CE–FA relationship.
CE × BoG → FA	Not significant ($\beta = -0.106, p = .089$)	H5: Not Supported	Board of governance did not significantly condition the direct CE–FA relationship.
CE × BoG → IAE	Significant ($\beta = 0.171, p < .001$)	H6: Supported	Board of governance significantly conditioned the CE–IAE relationship.
CE → IAE → FA conditional on BoG	Index = 0.267; 95% CI [0.180, 0.362]	H7: Supported	The indirect CE–FA relationship through IAE varied significantly across levels of board governance.

H1: Control Environment and Internal Audit Effectiveness

The findings showed that control environment had a positive and statistically significant effect on internal audit effectiveness ($\beta = 0.835, t = 20.346, p < .001$), supporting H1. The finding indicated that stronger ethical values, board oversight, management philosophy, organizational structures and human resource policies were associated with more effective internal audit functions. The finding was consistent with Weickgenannt et al. (2021), who established that a supportive control environment was associated with stronger internal audit effectiveness. Similarly, Bananuka et al. (2021) found that organizational control structures and governance arrangements influenced the effectiveness of internal audit functions. The finding was also consistent with Systems Theory, as internal audit effectiveness operated within an interconnected organizational control system. Agency Theory further suggested that a strong control environment strengthened monitoring mechanisms and reduced opportunities for managerial discretion that could conflict with organizational interests.

H2: Control Environment and Financial Accountability

The results established a positive and statistically significant effect of control environment on financial accountability ($\beta = 0.767$, $t = 10.498$, $p < .001$), supporting H2. The finding suggested that corporations with stronger ethical standards, clearer responsibilities, effective oversight, and supportive management practices exhibited stronger financial accountability. This finding was consistent with Higenyi (2024), who found that internal control systems significantly influenced financial accountability in local governments. Similarly, Omondi (2021) reported a significant relationship between internal control systems and financial accountability in Kenyan public secondary schools. The finding supported Agency Theory by demonstrating the role of controls in monitoring managers and safeguarding public resources. It also supported Stewardship Theory because clearly established structures and ethical values provided conditions under which managers could exercise responsible stewardship of public resources.

H3: Internal Audit Effectiveness and Financial Accountability

Contrary to the hypothesized relationship, internal audit effectiveness had no statistically significant effect on financial accountability ($\beta = -0.029$, $t = 0.424$, $p = .671$); hence, H3 was not supported. This finding differed from Msindwana and Ngwakwe (2022), who found that internal audit effectiveness enhanced financial accountability in South African provincial treasuries. It also differed from Mbangua and Musau (2026), who reported that effective internal audit practices were associated with stronger financial accountability in Kenyan county governments. The divergence suggested that internal audit activities, even when perceived as effective, did not necessarily translate directly into accountability outcomes within the corporations studied. From Systems Theory, internal audit represented one component of a broader accountability system whose effect depended on how other organizational controls interacted with it. Stewardship Theory similarly suggested that audit assurance alone might not determine accountability when implementation of recommendations and management responsibility remained important.

H4: Mediating Effect of Internal Audit Effectiveness

The indirect effect of control environment on financial accountability through internal audit effectiveness was not statistically significant ($\beta \approx -0.024$, $p = .673$), and H4 was therefore not supported. The finding differed from Lustrilanang et al. (2023), who reported that internal control-related mechanisms transmitted governance effects to organizational accountability outcomes. It also contrasted with Alawaqleh (2021), who established that internal audit related mechanisms could contribute to organizational outcomes through intermediary relationships. The absence of mediation indicated that, although control environment directly influenced financial accountability and strongly influenced internal audit effectiveness, internal audit effectiveness did not provide a significant transmission mechanism between the two variables. Systems Theory provided an explanation because accountability outcomes resulted from interactions among several interconnected controls rather than from internal audit effectiveness operating independently.

H5: Moderating Effect of Board of Governance on Control Environment–Financial Accountability

The interaction between board of governance and control environment had a negative but statistically insignificant effect on financial accountability ($\beta = -0.106$, $t = 1.699$, $p = .089$); consequently, H5 was not supported. This finding differed from Musah et al. (2022), who found that corporate governance significantly moderated the relationship between internal control components and financial performance. It also contrasted with Oyugi et al. (2024), who established significant relationships among board practices, internal controls, and performance in Kenyan government-owned entities. The finding suggested that board governance did not significantly alter the direct contribution of control environment to financial accountability in the present setting. Agency Theory nevertheless remained relevant because boards were

expected to provide oversight and monitoring; however, the insignificant interaction indicated that such oversight did not significantly change the relationship between the control environment and financial accountability.

H6: Moderating Effect of Board of Governance on Control Environment–Internal Audit Effectiveness

The interaction between board of governance and control environment had a positive and statistically significant effect on internal audit effectiveness ($\beta = 0.171$, $t = 3.758$, $p < .001$), supporting H6. The finding indicated that board governance strengthened the relationship between control environment and internal audit effectiveness. This was consistent with Sarens & Abdolmohammadi (2011), who emphasized the monitoring role of governance structures in shaping internal audit effectiveness. It was also consistent with Oyugi et al. (2024), who found that board practices and internal controls were closely interconnected within Kenyan government-owned entities. Agency Theory explained this finding through the board's monitoring role, while Systems Theory suggested that board oversight strengthened the interaction between organizational control components and the internal audit function.

H7: Moderated Mediation of Board of Governance

The index of moderated mediation was positive and statistically significant (Index = 0.267, 95% CI [0.180, 0.362]), supporting H7. The conditional indirect effect shifted from negative at low levels of board governance (−0.356) to statistically insignificant at the mean (−0.035) and positive at high levels (0.285). This pattern indicated that board governance conditioned the indirect effect of control environment on financial accountability through internal audit effectiveness. The finding was consistent with Musah et al. (2022), who found that corporate governance strengthened relationships between internal control effectiveness and organizational outcomes. It was also consistent with Oyugi et al. (2024), who established significant interactions among board practices, internal controls, and performance in Kenyan government-owned entities. Systems Theory explained this finding by emphasizing the interconnected nature of governance and control mechanisms, while Agency Theory highlighted the board's monitoring function in strengthening the effectiveness of internal control and assurance processes.

Theoretical Contribution

This study contributed to theory in three important ways. First, it extended the application of Agency Theory, Stewardship Theory, and Systems Theory to the financial accountability of service state corporations in Kenya by conceptualizing control environment, internal audit effectiveness, and board of governance as interconnected organizational mechanisms. While previous studies had largely examined internal controls, internal audit, or governance as separate determinants of accountability, this study demonstrated that the control environment had a significant direct effect on financial accountability and internal audit effectiveness. The findings extended existing theoretical explanations by showing that organizational accountability was shaped not only by individual control mechanisms but also by their interaction within the organizational control system. This supported the Systems Theory perspective that organizational outcomes emerged from the interaction of interdependent components, while Agency Theory explained the importance of control and monitoring in addressing principal–agent problems (Jensen & Meckling, 1976; Sarens & Abdolmohammadi, 2011).

Second, the study advanced theoretical understanding by integrating internal audit effectiveness as a mediating mechanism and board of governance as a moderating mechanism within a single framework. The findings showed that the control environment significantly influenced internal audit effectiveness, while the board of governance significantly moderated the relationship between control environment and internal

audit effectiveness. However, internal audit effectiveness did not significantly mediate the relationship between control environment and financial accountability. These findings refined the application of Systems Theory by demonstrating that interrelationships among control components did not necessarily result in sequential mediation. At the same time, the significant moderating role of board governance supported Agency Theory by demonstrating the importance of governance oversight in shaping the effectiveness of organizational control mechanisms.

Third, the study contributed theoretically by establishing moderated mediation in the relationship between control environment and financial accountability. The significant index of moderated mediation showed that the indirect relationship through internal audit effectiveness varied with the level of board governance. This finding extended Agency Theory and Systems Theory by demonstrating that the effectiveness of internal control and assurance mechanisms depended partly on the governance context in which they operated. The study therefore provided an integrated theoretical explanation of how control structures, assurance mechanisms, and governance oversight interacted in service state corporations.

Practical Implications

This study yielded practical implications for the management and governance of service state corporations in Kenya by demonstrating the importance of a strong control environment in supporting internal audit effectiveness and financial accountability. The findings indicated that corporations should strengthen ethical values, board oversight, management philosophy, organizational structures and human resource policies that supported internal control. These measures were relevant to boards of governance, accounting officers, internal auditors, finance managers, and other officials responsible for safeguarding public resources and ensuring compliance with financial management requirements. Moreover, the significant moderating effect of board governance on the relationship between control environment and internal audit effectiveness demonstrated the importance of active and effective board oversight. Boards of governance should therefore exercise independent oversight, monitor compliance with financial controls, respond to identified weaknesses, and hold management accountable for unresolved audit findings. The findings further indicated that strengthening the control environment alone was not sufficient; its effectiveness depended partly on how governance structures interacted with internal audit processes. The significant moderated mediation finding further suggested that corporations should view governance, internal audit, and the control environment as complementary mechanisms rather than isolated functions. Management and boards could therefore strengthen accountability by ensuring that internal audit recommendations are acted upon, audit functions operate with appropriate independence, and governance structures regularly review control weaknesses. These measures can provide a more integrated approach to financial accountability in Kenya's service state corporations.

6.0 Limitations and Areas for Further Research

Although the study provided evidence on the relationships among control environment, internal audit effectiveness, board of governance, and financial accountability, several limitations were acknowledged. First, the study focused on service state corporations in Kenya, and the findings therefore may not be generalizable to commercial state corporations, private organizations, or other public institutions without further investigation. Future studies could replicate the framework in other categories of state corporations, county governments, and private organizations to establish whether the relationships remained consistent across institutional contexts. Second, the study employed a cross-sectional research design, which captured the relationships among the study variables at one point in time. Consequently, the design could not capture changes in control environment, board governance, internal audit effectiveness, or financial accountability over time. Future studies could employ longitudinal designs to examine how changes in governance and

<https://doi.org/10.53819/81018102t5461>

internal control arrangements affected accountability outcomes over extended periods. Third, the study focused on internal audit effectiveness as the mediating mechanism and board of governance as the moderating variable. Future research could examine other mechanisms, such as audit committee effectiveness, risk management effectiveness, management commitment, organizational culture, and information systems, as potential mediators or moderators. Future researchers could also employ qualitative or mixed methods approaches to provide deeper explanations of why internal audit effectiveness did not significantly mediate the control environment–financial accountability relationship. Such research would further clarify the complex interaction between organizational controls, governance, and financial accountability in public sector institutions.

REFERENCES

- Adeyemi, F. K., & Olarewaju, O. M. (2019). Internal control system and financial accountability: An investigation of Nigerian South-Western public sector. *Acta Universitatis Danubius. (Economica)*, 15(1), 134–150.
- African Development Bank. (2020). African economic outlook 2020: Developing Africa's workforce for the future. African Development Bank.
- Alawaqleh, Q. A. (2021). Impact of accounting information system on internal audit quality: Mediating role of organizational culture. *International Journal of Financial Research*, 12(1), 205–213. <https://doi.org/10.5430/ijfr.v12n1p205>
- Al-Dmour, A., Abbod, M., & Al Qadi, N. (2023). The impact of the board of directors' characteristics on financial reporting quality. [As cited in institutional governance literature].
- Arnold, R. D., & Wade, J. P. (2015). A definition of systems thinking: A systems approach. *Procedia Computer Science*, 44, 669–678. <https://doi.org/10.1016/j.procs.2015.03.050>
- Bananuka, J., Tumwebaze, Z., Kaawaase, T. K., & Mwesigwa, R. (2021). Internal audit function, audit committee effectiveness and accountability in the public sector. [As cited in SDG-oriented accountability literature].
- Cantù, E. (2025). Making sense of the internal audit function: Toward internal controls integration and organizational learning. *Financial Accountability & Management*. <https://doi.org/10.1111/faam.12413>
- Committee of Sponsoring Organizations of the Treadway Commission [COSO]. (2013). Internal control—integrated framework. COSO.
- Committee of Sponsoring Organizations of the Treadway Commission [COSO]. (2017). Enterprise risk management—integrating with strategy and performance. COSO.
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22(1), 20–47. <https://doi.org/10.5465/amr.1997.9707180258>
- Finsaas, M. C., & Goldstein, B. L. (2021). Do simple slopes follow-up tests lead us astray? Advancements in the visualization and reporting of interactions. *Psychological Methods*, 26(1), 38–60. <https://doi.org/10.1037/met0000266>

- Gassare, B. S., & Wekesa, M. (2025). Internal controls and financial reporting quality in coastal county governments in Kenya. *The Strategic Journal of Business & Change Management*, 12 (2), 1051 – 1069. <http://dx.doi.org/10.61426/sjbcm.v12i2.3257>
- Geke, A. M., Odondo, A. J., & Obonyo, M. O. (2025). Effect of Internal Control Environment and Internal Audit Function on Financial Performance of Insurance Companies in Kenya. *African Development Finance Journal*, 8(5), 59-81.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2022). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. Springer. <https://doi.org/10.1007/978-3-030-80519-7>
- Hayes, A. F. (2022). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (3rd ed.). Guilford Press.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hernandez, M. (2008). Promoting stewardship behavior in organizations: A leadership model. *Journal of Business Ethics*, 80(1), 121–128. <https://doi.org/10.1007/s10551-007-9440-2>
- Higenyi, M. (2024). Effect of internal control systems on financial accountability in local governments in Uganda.
- International Federation of Accountants. (2018). International public sector financial accountability index: 2018 status report. IFAC.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Kamaruddin, M. I. H., & Ramli, N. M. (2019). Internal control practices and financial accountability in Islamic non-profit organizations in Malaysia.
- Kirby, D. (2020). Internal control usage and financial accountability: A multiple case study of North Georgia Baptist churches. [Doctoral dissertation].
- Lombe, B., & Mwenda, E. (2026). Evaluating the effect of internal control systems on organizational performance in Zambia’s mining sector: Evidence from Konkola Copper Mines, Chingola. *African Quarterly Social Science Review*, 3(3), 62-76.
- Lustrilanang, P., Suwarno, S., Arif, B., & Subowo, H. (2023). The effect of auditing quality and internal control on financial resilience in public sector organizations: Information quality as the mediating factor. *International Journal of Data and Network Science*, 7(4), 1573–1580.
- Madison, K., Kellermanns, F. W., & Munyon, T. P. (2017). Coexisting agency and stewardship governance in family firms: An empirical investigation of individual-level and firm-level effects. *Family Business Review*, 30(4), 347–368. <https://doi.org/10.1177/0894486517727422>
- Mbangua, E., & Musau, S. (2026). Effective internal audit practices: Key to strong financial accountability of county governments in Kenya. *Journal of Public Policy and Administration*, 11(1), 59–78. <https://doi.org/10.47604/jppa.3726>

- Mele, C., Pels, J., & Polese, F. (2010). A brief review of systems theories and their managerial applications. *Service Science*, 2(1–2), 126–135. <https://doi.org/10.1287/serv.2.1.2.126>
- Moodley, A., Ackers, B., & Odendaal, E. (2021). Internal audit's evolving performance role: Lessons from the South African public sector. *Journal of Accounting in Emerging Economies*. <https://doi.org/10.1108/JAOC-05-2021-0063>
- Msindwana, M. C., & Ngwakwe, C. C. (2022). Internal audit effectiveness and financial accountability in the provincial treasuries of South Africa. *International Journal of Economics and Financial Issues*, 12(3), 86–96. <https://doi.org/10.32479/ijefi.13017>
- Musah, A., Padi, A., Okyere, B., Adenutsi, D. E., & Ayariga, C. (2022). Does corporate governance moderate the relationship between internal control system effectiveness and SMEs financial performance in Ghana? *Cogent Business & Management*, 9(1), 2152159. <https://doi.org/10.1080/23311975.2022.2152159>
- Musyoka, D., & Oima, D. (2020). Board effectiveness and financial accountability in Kenyan public institutions.
- Muzaale, T., Mbeli, V. T., & Kisubi, E. C. (2026). Board gender diversity in listed companies: A comparative study of legal and institutional barriers to gender equity in Uganda and other jurisdictions. *African Journal of Empirical Research*, 7(2), 394–407. <https://doi.org/10.51867/ajernet.7.2.36>
- Naciti, V. (2021). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production*, 292, 126–130.
- Njobvu, E., Kaira, A., & Chowa, T. (2020). Financial accountability and internal control practices: A case study of a Catholic Parish in Lusaka, Zambia.
- Njoroge, J. (2020). Board governance weaknesses and financial mismanagement in Kenyan public entities.
- OECD. (2021). Ownership and governance of state-owned enterprises 2021: A compendium of national practices. OECD Publishing. <https://doi.org/10.1787/581de09d-en>
- Office of the Auditor-General [OAG]. (2022). Annual report on the accounts of state corporations. Government of Kenya.
- Office of the Auditor-General [OAG]. (2025). Annual report on the accounts of state corporations. Government of Kenya.
- Omondi, D., & Muturi, W. (2019). Board oversight and financial accountability in Kenyan municipal corporations. [Journal article].
- Omondi, M. A. (2021). Internal control systems and financial accountability in national public secondary schools in Kenya. [Doctoral thesis, JKUAT].
- Panda, B., & Leepsa, N. M. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, 10(1), 74–95. <https://doi.org/10.1177/0974686217701467>
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544. <https://doi.org/10.1177/014920638601200408>

- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Public Financial Management Reform Secretariat [PFMR]. (2022). Public Expenditure and Financial Accountability (PEFA) assessment report. National Treasury, Kenya.
- Republic of Kenya. (2012). Public Finance Management Act, 2012. Government Printer.
- Republic of Kenya. (2015). Mwongozo: Code of governance for state corporations. State Corporations Advisory Committee.
- Sarens, G., & Abdolmohammadi, M. J. (2011). Monitoring effects of the internal audit function: Agency theory versus other explanatory variables. *International Journal of Auditing*, 15(1), 1–20. <https://doi.org/10.1111/j.1099-1123.2010.00419.x>
- Sutaryo, S., et al. (2024). Internal control systems in overseeing financial management accountability in public health units (BLUD Puskesmas) in Indonesia.
- von Bertalanffy, L. (1950). An outline of general system theory. *The British Journal for the Philosophy of Science*, 1(2), 134–165. <https://doi.org/10.1093/bjps/I.2.134>
- Weickgenannt, A., Hermanson, D. R., & Sharma, V. D. (2021). How U.S. audit committees oversee internal control over financial reporting. *International Journal of Auditing*, 25(3), 634–650. <https://doi.org/10.1111/ijau.12218>
- World Bank. (2020). Enhancing government effectiveness and transparency: The fight against corruption. World Bank
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper and Row.
- Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206. <https://doi.org/10.1086/651257>