

# Internal Audit Effectiveness and Public Accountability: An Empirical Analysis of Determinants within Ministries, Departments and Agencies

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Persistent financial irregularities continue to undermine public sector accountability in Sub-Saharan Africa, raising concerns about the effectiveness of internal audit functions. This study investigates the effectiveness of internal audit in promoting accountability and good governance within Ghana's Ministries, Departments and Agencies (MDAs). The study employs a quantitative research design using survey data collected from audit committee members, internal auditors and external auditors in selected MDAs in Ghana. Data were analysed using descriptive statistics and regression analysis with Statistical Package for the Social Sciences (SPSS) to identify the core roles of internal audit and the institutional factors influencing its effectiveness. The results reveal that audit committee support, internal auditors' independence and objectivity, auditor competence, management support, availability of resources, and collaboration between internal and external auditors have a positive and statistically significant effect on internal audit effectiveness in the Ghanaian public sector. The regression model demonstrated strong explanatory power, correctly classifying 84.7% of cases, thereby providing robust empirical support for the research model. The findings underscore the importance of well-resourced, independent, and institutionally supported internal audit functions in strengthening accountability in public sector organisations.

*Keywords:* accountability, internal audit, financial irregularities, governance, public sector organisations

## Introduction

Accountability remains a fundamental pillar of effective governance, ensuring that public institutions operate transparently, ethically and responsibly in the use of public resources (Zahari, Said, & Muhamad, 2022). In the public sector, accountability is especially crucial given the obligation of public officials and institutions to act in the best interests of citizens, comply with legal standards, and deliver on policy objectives (MacCarthy & Adoboe-Mensah, 2023; Rulashe & Ijeoma, 2022). When public officials are not held to account, corruption, inefficiencies, and mismanagement flourish, undermining development efforts and public trust (Basavarajappa,

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The challenge of accountability is particularly pronounced in Sub-Saharan Africa, where persistent financial irregularities such as bribery, procurement fraud, and payroll anomalies have led to significant leakages of public funds (Darko, Aboagye-Otchere, & Owusu, 2025; Quampah, Salia, Fusheini, & Adoboe-Mensah, 2021; Ademola, Adegoke, & Oyeleye, 2017). In Ghana, the Auditor-General's reports have consistently exposed alarming levels of financial irregularities among Ministries, Departments and Agencies (MDAs). For instance, reported financial irregularities in Ghana's MDAs increased sharply to over GH¢17.5 billion in 2021 before declining to GH¢8.8 billion by the end of 2023 (Republic of Ghana, 2023). Additionally, the 2024 Auditor-General's Report revealed that total financial breaches across MDAs amounted to GH¢2.40 billion (Republic of Ghana, 2025). While this downward trend suggests some improvement in public financial management, the persistence and magnitude of these irregularities point to continuing weaknesses in internal control and oversight systems. These irregularities are not only financially damaging but also contribute to weak service delivery and increased inequality, disproportionately affecting the poor (Meijer, Hart, & Worthy, 2018).

To strengthen accountability mechanisms and improve public sector governance, internal auditing has emerged as a key institutional response. Globally, internal audit is recognised as a linchpin of sound governance and an essential control mechanism for financial discipline in the public sector (Eulerich, 2021; Bonrath & Eulerich, 2024). The internal audit function contributes to effective governance by identifying operational inefficiencies, monitoring compliance, mitigating risks, and fostering ethical awareness across public institutions (Lenz & O'Regan, 2024; Gofe, 2020).

In Ghana, the establishment of the Internal Audit Agency (IAA) under the Internal Audit Agency Act, 2003 (Act 658) and the implementation of the Public Financial Management (PFM) Act, 2016 (Act 921) reflect institutional commitments to enhance audit practices and fiscal accountability across MDAs and local government bodies (Parliament of Ghana, 2003; Government of Ghana, 2016). These reforms also include the creation of audit committees to work collaboratively with internal auditors in promoting oversight and financial stewardship (Hegazy & Stafford, 2021). Yet, despite these efforts, recurring financial irregularities in public spending indicate that the internal audit function may not be fulfilling its accountability-promoting mandate effectively.

However, the literature presents mixed and inconclusive findings about internal audit's effectiveness in the public sector. On one hand, some studies emphasise internal audit's capacity to detect fraud and promote accountability, especially when audit units are adequately resourced and supported (Setyaningrum & Kuntadi, 2019; Alqudah, Afza, Hassan, & Lutfi, 2023). On the other hand, others report that internal auditors often face constraints such as limited independence, poor role clarity, and lack of cooperation from management, which significantly diminish their impact (Asiedu & Deffor, 2017; Khelil & Khelif, 2022; Grima et al., 2023). These conflicting findings underscore the need for a deeper empirical investigation into the contextual and institutional factors shaping internal audit effectiveness.

Moreover, existing research tends to rely heavily on internal auditors' self-assessments, which may overstate the extent of their effectiveness and overlooking the perceptions of other governance stakeholders such as audit committee members, senior public managers, and regulatory bodies (Mustika, 2015; Alqudah et al., 2023). This narrow stakeholder focus limits our understanding of how audit functions are experienced and assessed more broadly within public sector institutions. Additionally, many studies are geographically concentrated or sector-specific (e.g., education, health), resulting in findings that may not generalise across public organisations with

diverse mandates and capacities (Asare-Baffour, Manu, Opoku, & Oppong, 2020; Quampah et al., 2021).

Furthermore, recent literature has not adequately integrated emerging developments such as the growing significance of audit committees in internal control systems and their evolving role in governance structures (Hegazy & Stafford, 2021). This gap is particularly relevant in Ghana, where audit committees have been formalised as part of broader public financial management reforms but remain understudied in terms of their interaction with internal audit units and their influence on accountability outcomes.

This study addresses the aforementioned gaps by examining the effectiveness of internal audit in promoting accountability within Ghanaian MDAs, incorporating multiple stakeholder perspectives to gain a more comprehensive understanding of internal audit practices. Unlike prior studies, it places significant emphasis on how institutional factors, such as audit committee engagement, regulatory oversight and internal auditor independence, mediate audit effectiveness in reducing financial irregularities. The study seeks to answer a core question: What key factors influence internal audit effectiveness and its contribution to accountability in Ghana's MDAs?

This study provides context-specific evidence from Ghana to address gaps in African public sector audit literature, offering insights for policy, capacity building, and improving audit effectiveness in developing countries. The remainder of this paper reviews relevant theoretical and empirical literature. It also details the research methodology and data collection and analysis techniques, presents the study's results, and provides a discussion of the results and the concluding remarks, respectively.

## **Empirical Review and Hypotheses Development**

### **Overview of Internal Audit**

Internal auditing, practiced across diverse contexts, is an independent assurance and consulting function that enhances organisational performance by strengthening risk management, control, and governance system (Institute of Internal Auditors [IIA], 2024). Internal audit activities typically include operational, financial, and compliance audits, which provide management with insights and recommendations for enhancing internal controls and mitigating risks (Nedyalkova, 2020). These functions are integral to improving institutional accountability, supporting enterprise risk management, and ensuring that strategic goals are met for sustainable performance (K. Netshifhefhe, M. V. Netshifhefhe, Naphtali, & Mupa, 2024). As an internal assurance mechanism, internal audit is fundamentally concerned with the assessment of internal control systems to ensure that resources are used economically, efficiently, and effectively (Nadirsyah-Indriani & Mulyany, 2024). Jóhannesdóttir, Kristiansson, Sipiläinen, & Koivunen (2018) add that internal auditing strengthens the control environment by offering an impartial evaluation of governance structures and by promoting transparency and ethical practices. Internal auditors thus serve as a crucial part of the organisation's governance framework, identifying weaknesses in internal controls, assessing risk exposure, and recommending corrective actions to safeguard assets and improve performance (Arena & Azzone, 2009; Sarens & De Beelde, 2006).

Given the central role internal auditing plays in strengthening governance and promoting accountability, it is essential to examine the factors that shape its effectiveness, particularly within the public sector context.

### **Factors Influencing Internal Auditing Effectiveness in Promoting Accountability**

According to Bender (2006), the effectiveness of internal audit can be indirectly assessed by examining the factors that influence it. Various studies have identified critical factors that shape internal audit's effectiveness

in promoting accountability in public institutions. These factors are reviewed below, with each aligned to a specific hypothesis (H).

### **Management Support**

Management support is consistently cited as a foundational enabler of effective internal audit practice. Senior management influences the internal audit function through resource allocation, access to information, implementation of recommendations, and provision of training. Bello, Ahmad, and Yusof (2018) find that strong management backing enhances organisational performance by empowering auditors to carry out sophisticated assurance work. However, empirical evidence is mixed: Weak management support has been shown to reduce audit effectiveness through delays in feedback and limited investment in information technology (Quampah et al., 2021), whereas Kukuiah (2019) reports no significant association. However, most studies converge on the view that managerial commitment amplifies the effects of auditor competence and independence by providing the enabling environment within which auditors work (Pelser, Mensah, & Ngwenya, 2020). Based on this evidence, the study proposes:

H1: Management support positively and significantly impacts the effectiveness of internal audit in public sector organisations.

### **Audit Committee Support**

Audit committees contribute to internal audit effectiveness by providing oversight, reinforcing independence, and ensuring follow-up on audit recommendations. Empirical studies show that active and knowledgeable audit committees enhance the quality of financial reporting, risk assessments, and audit planning (Grima et al., 2023; Henry, Duncan, & Robert, 2022). Akwenye, Chata, and Benedict (2016) further emphasise that supportive audit committees strengthen internal audit legitimacy within public institutions. In many African public sectors, however, committee effectiveness depends heavily on members' technical expertise, authority and independence, factors that are often underdeveloped (Asare-Baffour et al., 2020). This drives to the next hypothesis:

H2: Audit committee support positively and significantly impacts the effectiveness of internal audit in public sector organisations.

### **Availability of Resources**

Resource sufficiency, such as financial, technological, and human is a key determinant of audit performance. Menza, Aga, and Jerene (2019) show that internal auditors with adequate budgets, tools, and staffing levels are better positioned to execute their mandates. Similarly, Mahzan and Hassan (2015) find that trained personnel and adequate time allocation enhance audit efficiency and compliance with professional standards. In the Ghanaian public sector, chronic underfunding and resource shortages are common (Quampah et al., 2021), suggesting that resource availability may strongly condition how other determinants (such as competence and collaboration) translate into effectiveness. Accordingly, the study formulates the following hypothesis:

H3: Availability of resources positively and significantly impacts the effectiveness of internal audit in public sector organisations.

### **Collaboration between Internal and External Auditors**

Synergy between internal and external auditors strengthens organisational assurance systems by enabling information sharing, reducing duplication of efforts, and enhancing risk identification. Studies show that coordinated audit work yields higher-quality assurance outcomes and increases accountability (Alqudah et al.,

2023; Grima et al., 2023). In the public sectors of developing countries, collaboration also enhances efficiency where resources are limited (Menza et al., 2019). However, Ratmono and Darsono (2022) caution that collaboration must be balanced with independence to avoid compromising internal auditors' objectivity. The above arguments form the basis for the fourth hypothesis:

H4: Collaboration between internal and external auditors positively and significantly impacts the effectiveness of internal audit in public sector organisations.

#### **Internal Auditor Independence and Objectivity**

Independence safeguards auditors from undue influence by enabling unbiased judgment, while objectivity reflects the impartial mindset required to deliver reliable audit outcomes. Prior studies emphasise that compromised independence can lead to biased reporting and weakened audit quality (Shamsuddin, 2014; Ofori & Lu, 2018), even though complete independence is difficult to achieve within organisational employment structures (Đorđević & Đukić, 2017). Research further shows that both attributes are essential for fostering public trust and strengthening governance systems (Okodo, Aliu, & Yahaya, 2019; Asare-Baffour et al., 2020). Similarly, auditor objectivity has been linked to improved audit outcomes and higher audit quality (Tureken, Jethefer, & Ozkan, 2020; Dyhati & Wahyudi, 2022; Mangasih, Pinasti, & Bawono, 2020). Independence and objectivity collectively strengthen the internal audit function's capacity to detect irregularities, withstand organisational pressure, and contribute to good governance. Accordingly, this study proposes:

H5: Internal auditor independence and objectivity jointly and significantly enhance the effectiveness of internal audit in public sector organisations

#### **Internal Auditor Competence**

Competence encompasses qualifications, professional experience, analytical skills, and continuous training. Competent auditors are more capable of identifying control weaknesses, detecting misstatements, and producing high-quality audits (Ratmono & Darsono, 2022; Irwansyah & Zega, 2023). Evidence from African public institutions show that auditor competence is strongly linked to improved accountability and transparency (Jachi & Yona, 2019). Competence also interacts with other determinants such as adequate resources and strong management support to enhance the effectiveness of skilled auditors, whereas weak institutional environments may limit their impact (Alqudah et al., 2023; Onay, 2021). This leads to the next hypothesis:

H6: Internal auditor competence positively and significantly impacts the effectiveness of internal audit in public sector organisations.

In summary, the literature suggests that internal audit effectiveness in the public sector is shaped not only by individual organisational factors but by their interaction within broader institutional contexts. The Ghanaian public sector, characterised by resource constraints, evolving governance reforms and accountability challenges offers a unique context for empirically examining how these determinants operate collectively.

## **Theoretical Literature Review**

### **Agency Theory and Internal Auditing**

Originally developed by Jensen and Meckling (1976), agency theory explains the relationship between a principal, who delegates responsibilities, and an agent, who performs tasks on behalf of the principal. In public governance, this manifests as citizens (principals) entrusting public officials and managers (agents) with the management of public resources and service delivery (Bjurstrøm, 2020; Nadirsyah-Indriani & Mulyany, 2024).

Agency conflicts arise when agents prioritise their own interests over those of the principal, driven by information asymmetry and misaligned incentives (Hamawandy & Omer, 2020). Internal auditing mitigates these conflicts by enforcing compliance, safeguarding resources, and reducing agency costs, thereby strengthening accountability (Albaity, Md Noman & Mallek, 2021; Hamawandy & Omer, 2020). While traditional applications of agency theory predict that oversight mechanisms reduce opportunistic behaviour, this study extends the theory by examining conditions under which internal audit effectiveness varies, such as the role of management support, resource availability, and collaboration with external auditors. This approach provides a more nuanced understanding of how agency control mechanisms operate in contexts with differing institutional capacities, highlighting when and why internal audits succeed or face limitations.

### **Assurance Theory and Internal Auditing**

Assurance theory explains how assurance mechanisms reduce information asymmetry and strengthen accountability by enhancing the credibility of organisational information (Watts & Zimmerman, 1983; Faulkner, 2021). In the public sector, internal auditing functions as a key assurance mechanism by providing independent and objective evaluations of governance, risk management, and internal controls (IIA, 2020). Prior studies emphasise that the effectiveness of this assurance role depends on auditor competence, independence, and objectivity, as well as institutional support from management and audit committees (Zakwan, Muda, & Sadalia, 2024; Gamayuni, 2018; Dellai & Omri, 2016). Adequate resources and constructive collaboration with external auditors further enhance assurance quality, while weak institutional environments may constrain audit impact, particularly in developing-country contexts (Alqudah et al., 2023; Grima et al., 2023; Mihret & Grant, 2017). This study applies assurance theory to examine internal audit effectiveness in Ghana's public sector, contributing context-specific evidence to a largely underexplored setting.

### **Institutional Theory and Internal Auditing**

Institutional theory emphasises that organisational practices are shaped not only by efficiency considerations but also by institutional pressures arising from regulatory frameworks, professional norms, and societal expectations (DiMaggio & Powell, 1983). Applied to internal auditing, this perspective highlights how laws, public financial management regulations, and professional standards influence audit structures and behaviour. In the public sector, internal audit effectiveness may therefore reflect compliance-driven adoption of audit practices rather than substantive commitment to accountability. Prior research suggests that weak enforcement mechanisms and ceremonial compliance can limit the impact of internal audit functions, particularly in developing country contexts (Netshifhefhe et al., 2024; Abu-Azza, 2012). Institutional theory thus helps explain why formal audit arrangements may exist without delivering commensurate improvements in governance, reinforcing the importance of independence, audit committee authority, and management support as mechanisms that convert institutional mandates into effective practice.

### **Resource-Based View (RBV) and Internal Auditing**

The Resource-Based View posits that organisational effectiveness depends on the availability and strategic deployment of valuable, rare, and non-substitutable resources (Barney, 1991; Wernerfelt, 1984). Within the internal audit context, RBV suggests that audit effectiveness is shaped by the quality of internal resources, including auditors' professional competence, technical expertise, access to information, and analytical tools (Jaber et al., 2024). Skilled auditors equipped with adequate financial and technological resources are better positioned to deliver high-quality assurance, identify control weaknesses, and support accountability outcomes.

Empirical studies support this perspective, showing that internal audit functions with stronger human and organisational resources exhibit superior performance and greater influence on governance processes (Ismail, Mohd-Saleh, Yakob, & Hussin, 2023; Hamzah, Maelah & Saleh, 2022). In public sector environments such as Ghana, where resource constraints are prevalent, RBV provides a useful lens for understanding how variations in internal audit capacity translate into differences in effectiveness.

## Methods

This study adopted survey research design targeting audit committee members, internal and external auditors from MDAs located in the Greater Accra Region of Ghana. The Greater Accra Region was selected for this study because it serves as the administrative and governance hub of Ghana, hosting the headquarters of most MDAs.

A purposive sampling technique was used to select 176 respondents, comprising 95 audit committee members, 66 internal auditors and 15 external auditors. These categories were selected because they represent key actors in the internal audit oversight structure, thereby ensuring a comprehensive assessment of internal audit effectiveness from both operational and governance perspectives. Although purposive sampling can introduce selection bias (Serra, Perchinunno, & Bilancia, 2018), the potential for bias was mitigated by using clear inclusion criteria, such as years of professional experience, involvement in audit-related decision-making and familiarity with accountability frameworks.

Data were collected through a structured questionnaire, which was designed based on conceptual constructs derived from the literature. Items were adapted and refined from validated instruments used in prior studies (Udeh & Clement, 2016; Fonseca & Jorge, 2020) to ensure content validity and contextual relevance to the Ghanaian public sector. The questionnaire was structured into two main sections: Section A captured respondents' demographic and socio-economic characteristics and Section B measured factors influencing internal audit effectiveness using a modified five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

To enhance construct validity and reliability, the questionnaire underwent expert review and pilot testing. The pilot study involved 10 participants, five audit committee members and five accounting academics, who assessed the clarity, relevance and completeness of the items. Based on their feedback, ambiguous or overlapping items were revised to improve coherence and comprehension. Following the pilot, a Cronbach's alpha coefficient was computed to assess the internal consistency reliability of the questionnaire. A Cronbach's alpha value of 0.81 was obtained for Section C, indicating high reliability (Taber, 2018). Subscale reliabilities for constructs such as risk management effectiveness, internal control adequacy, and governance support also exceeded the recommended threshold of 0.70, confirming the reliability of the measurement tool.

Data were coded and analysed using Statistical Package for the Social Sciences (SPSS) Version 22. Descriptive statistics were used to summarise the characteristics of respondents and key study variables. In addition, logistic regression analysis was conducted to identify significant predictors of internal audit effectiveness in enhancing accountability. This technique was appropriate due to the categorical nature of the dependent variable and the need to determine the effect of multiple predictors (Hosmer, Lemeshow, & Sturdivant, 2013).

## Data Analysis and Results

### Demographic and Socio-Economic Characteristics of Respondents

The demographic and socio-economic characteristics of the respondents show that male constitutes 60.23%

of respondents and 39.77% of them were female. In terms of age distribution, the largest proportion falls within the 41-50 years range (56.82%), followed by 31-40 years (26.70%), indicating that the sample predominantly consists of middle-aged individuals. They are highly educated, with most holding a Bachelor's degree (44.88%) or a Master's degree (35.23%). The majority of respondents (55.68%) hold a CA(GH) qualification, followed by ACCA (14.77%) and CIMA (2.84%), while 26.71% has no professional qualification. In terms of experience, most have 1-3 years (51.70%) in audit committee activities, with smaller groups having less than a year (19.32%), 4-6 years (21.02%), or 7-10 years (7.39%). The profile suggests a well-educated, middle-aged, and professionally active group with reasonable experience in audit-related roles.

### Justification for Logistic Regression

The dependent variable, internal audit effectiveness, is dichotomous, coded as "0" for Ineffective and "1" for Effective (Table 1). Binary logistic regression was employed to estimate the likelihood that internal audit practices are effective based on organisational and professional predictors (Wooldridge, 2010). This approach is appropriate because it guarantees predicted probabilities remain within [0, 1] and accounts for the non-linear relationship between predictors and the outcome.

Table 1

#### *Dependent Variable Encoding*

Original value	Internal value
Ineffective	0
Effective	1

### Multicollinearity Assessment

Prior to estimation, predictor variables were assessed for multicollinearity using tolerance and variance inflation factor (VIF). All variables had tolerance values  $>0.8$  and VIF  $<1.2$ , indicating no serious multicollinearity (Hair, Risher, Sarstedt, & Ringle, 2019).

Table 2

#### *Multicollinearity Diagnostics*

Variables/factors	Collinearity statistics	
	Tolerance	VIF
(Constant)		
Management support	0.92	1.09
Audit committee support	0.87	1.15
Availability of resources	0.84	1.19
Internal auditor's competence	0.91	1.10
Internal auditors' independence & objectivity	0.90	1.11
Collaboration between internal and external auditors	0.88	1.14

Source: Field Data, 2025.

### Model Fit and Diagnostics

The Omnibus Test of Model Coefficients was highly significant ( $\chi^2 = 124.091$ ,  $df = 6$ ,  $p < 0.001$ ), confirming that the predictors jointly improve model fit over the null model. The -2 Log Likelihood of 119.078, Cox & Snell  $R^2 = 0.506$ , and Nagelkerke  $R^2 = 0.676$  indicate a strong explanatory power. The Hosmer-Lemeshow goodness-of-fit test ( $\chi^2 = 3.777$ ,  $df = 8$ ,  $p = 0.877$ ) confirmed no evidence of poor fit (Fisher, Rudin,

& Dominici, 2019).

Table 3

*Model Fit and Diagnostic Statistics*

Statistics	Value
-2 Log Likelihood	119.078
Cox & Snell $R^2$	0.506
Nagelkerke $R^2$	0.676
Omnibus $\chi^2$ (df = 6)	124.091, p < 0.001
Hosmer-Lemeshow $\chi^2$ (df = 8)	3.777, p = 0.877

**Classification Accuracy**

The model correctly predicted 87.2% of “Ineffective” cases and 81.7% of “Effective” cases, with an overall accuracy of 84.7%. This demonstrates strong predictive capacity for internal audit effectiveness.

Table 4

*Classification Table*

Observed		Predicted		Percentage correct	
		Ineffective	Effective		
Step 1	Internal audit’s effectiveness in promoting accountability	Ineffective	82	12	87.2
		Effective	15	67	81.7
Overall percentage					84.7

**Logistic Regression Results**

Table 5 presents the results of the logistic regression analysis. All six predictors were statistically significant at  $p < 0.05$ . Audit committee support ( $\text{Exp}(B) = 7.730$ ) and internal auditors’ independence & objectivity ( $\text{Exp}(B) = 7.162$ ) were the strongest determinants, highlighting the importance of oversight and impartiality. Competence, management support, and availability of resources also substantially increased the likelihood of effective auditing ( $\text{Exp}(B) \approx 5$ -6), while internal-external collaboration had a moderate effect ( $\text{Exp}(B) = 2.739$ ).

Table 5

*Logistic Regression: Predictors of Internal Audit Effectiveness*

Variables/factors	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Management support	1.672	0.561	8.875	1	0.003	5.324	1.772	16.00
Audit committee support	2.045	0.514	15.851	1	0.000	7.73	2.824	21.15
Availability of resources	1.614	0.553	8.516	1	0.004	5.021	1.699	14.84
Internal auditors’ competence	1.821	0.530	11.808	1	0.001	6.178	2.187	17.46
Internal auditors’ independence & objectivity	1.969	0.522	14.229	1	0.000	7.162	2.575	19.92
Internal/external auditors’ collaboration	1.007	0.486	4.301	1	0.038	2.739	1.057	7.096
Constant	-4.302	0.761	31.992	1	0	0.014		

Source: Field data, 2025.

**Robustness Checks**

To ensure the stability of the results, hierarchical regression was conducted by entering predictors

sequentially:

Step 1: Management and audit committee support.

Step 2: Add resources and competence.

Step 3: Add independence/objectivity and collaboration.

As shown in Table 6, all variables retained significance across steps, confirming that the effects are not sensitive to the order of entry. VIF values remained  $<1.2$ , ruling out multicollinearity concerns (Chan et al., 2022). These robustness checks strengthen confidence that the reported predictors meaningfully determine audit effectiveness.

Table 6

*Hierarchical Logistic Regression (Odds Ratios)*

Step	Predictor	Exp(B)	Sig.
1	Management support	5.324	0.003
	Audit committee support	7.730	0.000
2	Availability of resources	5.021	0.004
	Competence	6.178	0.001
3	Independence & objectivity	7.162	0.000
	Internal-external collaboration	2.739	0.038

## Discussion

Growing public demands for transparency and fiscal discipline have intensified the role of internal auditing in public sector governance, particularly in developing-country contexts where institutional constraints persist (Osagioduwa & Atube, 2023). While prior studies have identified key determinants of internal audit effectiveness, this study advances the literature by examining how these factors operate jointly, with differing magnitudes and institutional dependencies, within Ghanaian MDAs, an environment characterised by formal regulatory compliance but persistent accountability failures. The findings demonstrate that all six predictors, management support, audit committee support, availability of resources, internal auditors' competence, independence & objectivity, and internal-external collaboration significantly influence audit effectiveness.

Audit committee support emerged as the strongest predictor ( $\text{Exp}(B) = 7.73$ ), highlighting the central role of oversight in enhancing accountability. This aligns with agency theory, which posits that robust governance structures mitigate agency problems by monitoring management actions (Jensen & Meckling, 1976). In Ghanaian public sector organisations, audit committees provide institutional authority, ensuring follow-up on audit recommendations and reinforcing compliance with regulations (Grima et al., 2023; Henry et al., 2022). The findings suggest that without an empowered and skilled audit committee, internal audit efforts may be constrained, regardless of auditors' technical competence.

Independence and objectivity were also highly significant ( $\text{Exp}(B) = 7.162$ ), supporting assurance theory, which emphasises unbiased evaluation as crucial for credible auditing outcomes (Shamsuddin, 2014; Asare-Baffour et al., 2020). In contexts like Ghana, where public sector auditors may face political or administrative pressures, maintaining independence and impartiality ensures that audit findings are trustworthy and actionable. This reinforces public confidence and underlines the ethical dimension of audit effectiveness.

Internal auditors' competence ( $\text{Exp}(B) = 6.178$ ) and the availability of resources ( $\text{Exp}(B) = 5.021$ ) further substantiate resource-based perspectives, which argue that both human capital and organisational resources

determine functional effectiveness (Mahzan & Hassan, 2015; Ratmono & Darsono, 2022). Skilled auditors can identify irregularities and assess complex risks effectively, but their impact is amplified when they have adequate financial, technical, and informational resources. Conversely, weak resource environments constrain even highly competent auditors, highlighting the need for organisational investment in the internal audit function

Management support ( $\text{Exp(B)} = 5.324$ ) underscores the importance of institutional backing for internal audit functions. Institutional theory suggests that supportive leadership legitimises and embeds organisational practices (DiMaggio & Powell, 1983). In Ghana's public sector, management commitment facilitates access to information, timely implementation of recommendations, and professional development for auditors. These conditions foster a culture of accountability and enhance the probability that audit outcomes influence decision-making.

Collaboration between internal and external auditors, while a moderate predictor ( $\text{Exp(B)} = 2.739$ ), highlights the benefits of coordination and knowledge sharing. Consistent with the study by Alqudah et al. (2023) and Menza et al. (2019), this collaboration reduces duplication, improves audit quality, and reinforces accountability mechanisms. In practice, formal mechanisms to encourage coordination can enhance overall audit effectiveness and accountability without compromising auditor independence (Maama & Marimuthu, 2020).

The combined significance of these six predictors indicates that internal audit effectiveness is not solely dependent on individual auditor skills or formal structures but emerges from the interaction between human capabilities, institutional support, and resource adequacy. This supports a systems perspective on governance, where multiple organisational and professional factors collectively determine accountability outcomes.

### **Conclusion and Recommendations**

This study examined the factors influencing internal audit effectiveness in Ghana's public sector, with a specific focus on MDAs. Using a structured survey of audit committee members, internal auditors, and external auditors, the analysis identified six significant determinants of audit effectiveness. The logistic regression model demonstrated strong explanatory power, correctly classifying 84.7% of cases, thereby providing robust empirical support for the research model. Perceptions were not disaggregated across respondent categories because participants perform complementary oversight roles within the public sector accountability framework and are collectively involved in assessing audit effectiveness, an approach consistent with prior studies.

#### **Theoretical Implications**

This study makes several theoretical contributions to the literature on internal auditing and public sector accountability. First, it reinforces agency theory by demonstrating that audit committee support effectively mitigates principal-agent problems in public sector organisations. Second, it provides empirical support for assurance theory, showing that internal auditor independence and objectivity are critical for producing credible and reliable audit outcomes. Third, the findings highlight the relevance of resource-based and institutional theories, illustrating how auditor competence, adequate resources, and management support interact to shape audit effectiveness. Collectively, these results advance our understanding of internal audit in Sub-Saharan Africa, particularly within the Ghanaian public sector, by integrating multiple theoretical perspectives and addressing a gap in empirical research on contextual determinants of audit effectiveness.

#### **Practical Implications**

The findings also offer practical implications for policymakers and public sector managers. Policymakers should strengthen audit committees and ensure auditors' independence and objectivity to significantly enhance

accountability and the credibility of audit outcomes. Public sector managers should investment in internal auditor competence, coupled with sufficient financial, technical, and informational resources to maximise the effectiveness of audits. Furthermore, public sector managers should encourage collaboration between internal and external auditors to further improve audit quality, reduce redundancy, and reinforce accountability mechanisms. Finally, public sector managers should actively support internal audit by recognising its authority and promptly implementing audit recommendations to enhance transparency, accountability, and ethical governance.

### **Limitations and Recommendations for Future Research**

The study relies on self-reported survey data, which may be subject to response bias, particularly social desirability bias among internal auditors and audit committee members assessing functions in which they are directly involved. In addition, the analysis does not incorporate perspectives from other key stakeholders, such as senior management, regulators, or policymakers, whose roles may shape the broader accountability environment. These limitations suggest avenues for future research. Subsequent studies could adopt qualitative or mixed-method designs, incorporating interviews, document analysis, or case studies to generate deeper insights into audit processes, behavioural dynamics, and institutional constraints. Furthermore, comparative analyses across regions would help to uncover how variations in regulatory frameworks, governance capacity, and institutional culture moderate the effectiveness of internal audit in promoting accountability.

### **Ethical Approval**

Ethical approval for this study was granted by the Directorate of Research and Innovation Review and Ethics Committee (Reference No. HTU/DRI/EC2025-033). All research procedures complied with established ethical standards for studies involving human participants.

### **Consent**

Prior to participation, informed consent was obtained from all respondents. Participants were clearly informed about the purpose of the study, the voluntary nature of their involvement, and their right to withdraw at any stage without penalty. To ensure ethical compliance, all responses were kept confidential and anonymised to protect participants' identities

### **Conflicts of Interest**

The authors affirm that they have no conflicts of interest to disclose.

### **Funding Statement**

The authors received no financial support for the research, authorship, and/or publication of this article.

### **Data Availability Statement**

Data supporting the study's findings are available from the corresponding author on request.

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