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Is our knowledge sufficient? Linking internal auditors' knowledge to public expenditure management through internal audit effectiveness in local government authorities

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ABSTRACT

Weak public expenditure management remains a persistent challenge in developing economies, undermining service delivery and fiscal sustainability, especially in local government authorities. This study examines the direct and indirect influence of internal auditors' knowledge on public expenditure management through the mediating role of internal audit effectiveness in local government authorities. This study adopts the resource-based view (RBV) as the single overarching theoretical framework. Drawing on data from a cross-sectional survey of 49 internal audit professionals in local government authorities, structured questionnaires were distributed to collect data in the selected LGAs. For testing the study's hypotheses, PLS-SEM in Smart PLS 4 was employed.revealing that internal auditors' knowledge significantly predicts internal audit effectiveness ($\beta = 0.610$, $f^2 = 0.593$) and public expenditure management ($\beta = 0.522$, $f^2 = 0.521$). Internal audit effectiveness also mediates this relationship ($\beta = 0.238$, $p = 0.011$). The model explained 67.2% of variation in public expenditure management ($R^2 = 0.672$) and 37.2% in internal audit effectiveness ($R^2 = 0.372$), demonstrating strong reliability and predictive relevance. Results concluded that internal auditors' knowledge is a positive and significant factor in improving public expenditure management and internal audit effectiveness. Also, internal audit effectiveness has a positive and significant direct effect on public expenditure management and partially mediates the relationship between internal auditors' knowledge and public expenditure management. This study makes a timely contribution to public sector governance and auditing literature, especially in under-researched Sub-Saharan African contexts. This study recommends that there is urgent need for targeted capacity-building programmes to strengthen internal auditors' expertise in financial management, alongside investments in audit quality, information access, and resource allocation.

Keywords: Auditor Competence; Developing Countries; Financial Accountability; Internal Audit Effectiveness; Local Government; Public Expenditure Management; PLS-SEM

I. INTRODUCTION

Public expenditure management enables governments to institutionalise effective usage of financial resources through established entities and organizations by existing processes, policies, and systems (Akayuri et al., 2025; Sama et al., 2024). It is through this, the government plans and utilises public resources to achieve developmental and service delivery objectives (Mtengule et al., 2026). For instance, one among the important aspects of public expenditure management is public procurement, which involves the acquisition of goods, works, and services necessary for the effective functioning of government (public entities) (Changalima, 2023). Effective public expenditure management is reflected in the reduction of misappropriation through unapproved expenditures, the timely financing of core activities to minimize incomplete payments and bills, and the reduction of audit queries arising from unplanned spending by organizational units (Njeru, 2017). In developing countries, like Tanzania, local government authorities (LGAs) are key drivers of public service delivery, especially at the community level (Mahyoro & Kasoga, 2021; Mbogella et al., 2024). Therefore, effective public expenditure management within LGAs is important for sustainable local development and improved citizen welfare, as they are responsible for essential services like education, health, water, and infrastructure, all of which rely on effective use of public funds.

However, in recent years, several LGAs have been reported to experience challenges in managing public funds effectively. Evidence from past audit reports in Tanzania has revealed persistent issues of mismanagement, non-

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compliance with financial regulations, and inefficiencies in procurement processes (Mbogella et al., 2024; Mchopa et al., 2024; National Audit Office of Tanzania, 2024). These weaknesses undermine the overall purpose of effective public expenditure management, thereby constraining the capacity of LGAs to fulfil their service delivery mandates. Practically, these concerns increase awareness of the role of internal auditors in enhancing internal audit effectiveness within LGAs. Internal auditors are mandated to independently appraise internal controls before issues escalate to external audits (Mahyoro & Kasoga, 2021; Mbogella et al., 2024). However, the recurrence of significant audit queries in unsupported expenditures suggests that internal audit functions are not adequately preventing, detecting, or reporting these irregularities. Therefore, the need for understanding the role of internal auditors' knowledge in enhancing financial management systems at the LGA level is crucial.

Despite extensive scholarly attention on internal auditors' knowledge in shaping accountability and audit quality, significant gaps remain in understanding their influence on public expenditure management, especially in LGAs. Existing studies affirm that auditors' knowledge and professionalism contribute to audit quality and improve accountability (Nurdiono & Gamayuni, 2018; Zamzam et al., 2024). However, most of this evidence is drawn from broader audit quality or fraud prevention studies, with limited direct examination of their impact on public expenditure management within LGAs. Moreover, research highlights that contextual challenges such as political interference, lack of independence, and resource limitations often dilute the direct effect of knowledge and professional conduct on public expenditure monitoring (Mbogella et al., 2024; Okeke, 2025). This suggests that while theoretical consensus exists on their importance, the empirical linkage between internal auditors' knowledge and effective public expenditure management remains underexplored, particularly in developing-country LGAs where governance structures are of great importance.

Furthermore, while internal audit effectiveness has been increasingly theorised as a mediating mechanism, few empirical studies have rigorously tested its role in explaining how knowledge translates into desired outcomes. Prior literature demonstrates that knowledge is necessary but insufficient without effective audit structures, independence, and organisational support (Abdelrahim & Al-Malkawi, 2022; Alqudah et al., 2023). Yet, most studies focus either on determinants of internal audit effectiveness or on its direct association with accountability and fraud prevention, without integrating it as a mediator in the specific relationship between internal auditors' knowledge and public expenditure management. In LGAs, where audit functions often struggle with limited resources and interference (Mahyoro & Kasoga, 2021; Mbogella et al., 2024), this mediating role is especially critical but under-investigated. Therefore, the current study addresses this gap by positioning internal audit effectiveness as a mediating variable, thereby extending the understanding of how internal auditors' knowledge can be channelled into more effective public expenditure management. The remaining sections of this paper are organized into five sections that include theoretical review and hypothesis development, methodology, results, discussion, and conclusion, implications, and limitations

1.1 Research Objective

This study examines the direct and indirect influence of internal auditors' knowledge on public expenditure management through the mediating role of internal audit effectiveness in local government authorities.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 The Resource-Based View (RBV)

This study adopts the resource-based view (RBV) as the single overarching theoretical framework. RBV is particularly appropriate and sufficient for examining the relationship between internal auditors' knowledge, internal audit effectiveness, and public expenditure management, especially in LGAs. The theory is relevant as the core focus of the study is on internal resources and capabilities as drivers of organizational outcomes. RBV posits that sustained superior performance arises from the possession and effective deployment of valuable, rare, inimitable, and organized resources (Barney, 1991; Penrose, 1959; Wernerfelt, 1984). In this context, internal auditors' knowledge constitutes a strategic human capital resource, while internal audit effectiveness represents the organizational capability through which this resource is deployed. On the other hand, public expenditure management is conceptualized as the resulting performance outcome. RBV thus provides a direct explanation of the entire proposed mediated relationship in the present study.

Furthermore, RBV is useful in explaining organization heterogeneity in relation to organizational outcomes such as performance (Changalima et al., 2023; Kibona et al., 2024). Despite operating under similar institutional, regulatory, and resource-constrained environments, Tanzanian LGAs exhibit significant variation in PEM effectiveness. RBV offers an influential lens to account for these differences by attributing them to variations in the accumulation, quality, and activation of internal audit-related knowledge resources. This makes the theory highly relevant to the study's emphasis on auditor competence as a differentiating factor. Also, the proposed mediation model aligns with RBV

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assumptions. The theory explicitly distinguishes between resources (auditors' knowledge) and the capabilities that mobilize those resources into performance outcomes (internal audit effectiveness). This linkage provides a strong theoretical grounding for the hypothesized mediation. Unlike other theories, RBV explains how intangible resources are converted into better governance and financial management outcomes through enhanced internal audit effectiveness. By grounding the RBV, the present study contributes to both the internal auditing and public management literature by demonstrating how strategic investment in auditors' knowledge as a core organizational resource can improve public expenditure outcomes in LGAs.

2.2 Internal Auditors' Knowledge and Public Expenditure Management

Internal auditors' knowledge encompasses the ability of internal auditor to communicate and collaborate with peers and other organization staff, undertaking works related to good governance (Institute of Internal Auditors, 2024; Kabuye et al., 2017). Therefore, a knowledgeable internal auditor should understand the entity's transaction systems, the ability to base audit findings on reliable data and documentation, and the capacity to resist actions that could lead to fraud (Kabuye et al., 2017). Scholarly research consistently stresses that internal auditors' knowledge enhances audit quality and enhancing public expenditure management. Through a systematic review, Istianah and Akbar (2024) identify competencies and expertise as recurring determinants of audit quality in public organisations. Similarly, Krichene and Baklouti (2020) show that Tunisian auditors perceive technical skills and professional development as critical to audit quality, but stress that limited recognition and access to information constrain their effectiveness. These studies emphasize that knowledge is essential but must operate within enabling organisational contexts.

Another strand of studies reinforces this perspective. Nurdiono and Gamayuni (2018) demonstrate in the Indonesian local government context that auditor competency directly improves audit quality and, in turn, strengthens accountability, which is an essential element of public expenditure management. Kabuye et al. (2017), examining the financial services sector, and find that auditors' competencies and organisational status improve fraud management, illustrating how knowledge reduces risks of mismanagement. These findings confirm that auditor knowledge influences public expenditure indirectly by enhancing audit quality, fraud control, and accountability mechanisms. Yet, the relationship is contingent on broader factors. Okeke (2025), in a Nigerian budgeting context, reveals that weak auditor involvement, political interference, and capacity shortages undermine expenditure monitoring despite auditors' knowledge. This highlights the nature of the link between knowledge and public expenditure management. Therefore, the current study hypothesises the following:

H1: Internal auditors' knowledge positively affects public expenditure management

2.3 The Mediating Effect of Internal Audit Effectiveness

Internal audit effectiveness is an outcome linked to the internal auditors' efforts toward achieving the objectives and fulfilling the functions of the internal audit (Alqudah et al., 2023). It is assessed by the suitability of supervisory implementation according to several general standards derived from internal auditor's attributes. Therefore, internal audit effectiveness means the degree to which internal audit functions achieve intended objectives and contributes to the organization. It is demonstrated when audit plans are completed as scheduled, making sure that the audit process is timely and linked to organizational priorities. Effectiveness is further reflected in the provision of relevant technical advice and instructions that consider effective decision making (Mahyoro & Kasoga, 2021).

The current study opines that internal audit effectiveness can serve as the mediating mechanism. Despite the fact that internal auditors' knowledge is a key driver of audit quality and organisational accountability, its effect on public expenditure management is rarely direct. Past studies such as Abdelrahim and Al-Malkawi (2022) conceptualise internal audit effectiveness as a construct formed by auditor competence, independence, and organisational support. Likewise, other existing studies show that in LGAs, auditor knowledge contributes to better oversight only when translated into effective internal audit practices (Daniel et al., 2021; Mahyoro & Kasoga, 2021). These previous empirical studies show the need to theorise internal audit effectiveness as a mediator between knowledge and public expenditure management.

Previous literature considers internal audit effectiveness as a predicting variable in model that include information technology usage as a mediator (Chi et al., 2024). Another empirical study unveils that that auditors' perceptions of effectiveness depend not only on knowledge but also on how effectively the audit function is structured and incentivised (Alqudah et al., 2023). Thuy (2025) also establishes that IAE mediates the link between audit determinants and fraud prevention. In line with this, Obwocha and Mereipei (2021) and Ta and Doan (2022) emphasise that government audits influence financial accountability when the audit function operates effectively, with adequate resources and independence. These studies emphasise the need for enhancing financial governance in organizations through enhancing internal audit effectiveness.

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Other recent literature links internal audit effectiveness to broader governance reforms in the public sector. A study conducted by Yanuarisa et al. (2025) highlight the role of internal audit effectiveness in procurement governance, while Masoud (2025) reported that internal audit effectiveness not only improves audit practices but also supports sustainability auditing practices in financial and governmental institutions in Libya. Therefore, given the need for enhancing public expenditure management, especially in LGAs, internal auditors' knowledge must be channelled through effective audit systems to enhance public expenditure management. Thus, the current study positions internal audit effectiveness as a mediating variable in the relationship between auditors' knowledge and public expenditure management (see Figure 1). The following hypotheses worth investigation:

H2: Internal auditors' knowledge positively affects internal audit effectiveness

H3: Internal audit effectiveness positively affects public expenditure management

H4: Internal audit effectiveness mediates the relationship between internal auditors' knowledge and public expenditure management

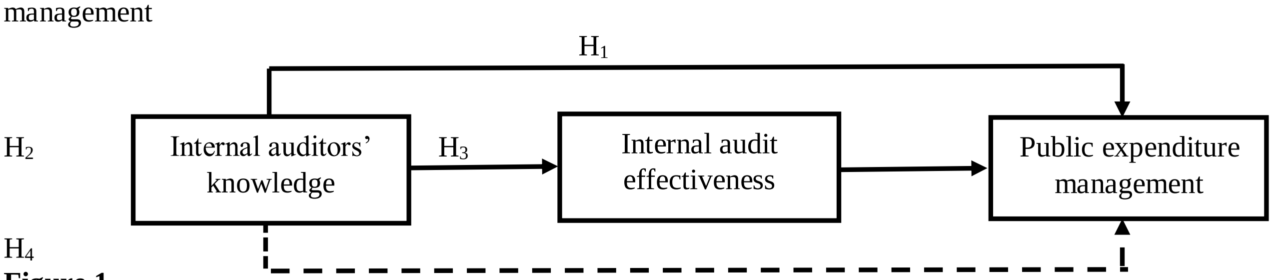

Figure 1

The conceptual model

III. METHODOLOGY

3.1 Research Design and Study Area

A cross-sectional design was employed in this research. It entails collecting data in a single point of time from a sample or population (Hair et al., 2020; Saunders et al., 2019). The current study focused on understanding perceptions of internal auditors regarding the influence of internal auditors' knowledge on public expenditure management in Tanzanian LGAs through internal audit effectiveness. The design was relevant as it includes collecting data linked to opinions, attitudes and perceptions of respondents in a specific topic (Saunders et al., 2019). Additionally, the research was carried out in Tanzania, specifically, the study concentrated in LGAs that were subjected to annual audits in one or more financial years from 2020/2021 to 2022/2023. The years from 2020/2021 to 2022/2023 are the most recent three years. The main purpose of including audited LGAs is the fact that the audited LGAs are assumed to be exposed to accountability requirements and may provide reliable data for examining the relationships between internal auditors' knowledge, internal audit effectiveness and public expenditure management. Specifically, this study was carried out in 19 LGAs that were purposefully selected based on the audit opinions. The selected LGAs scored a qualified or adverse opinion in one or more financial years from 2020/2021 to 2022/2023 (National Audit Office of Tanzania, 2024).

3.2 Sampling and Data Collection

The study employed purposive sampling to select LGAs with known audit problems, followed by a census of internal auditors within those LGAs. Nineteen (19) LGAs were purposefully selected based on evidence of poor performance in previous audits. Purposive sampling was considered appropriate because it enabled the identification of information-rich cases that are directly relevant to the research problem, specifically LGAs with documented audit challenges. The strength of this approach lies in its ability to generate focused and context-specific insights (Saunders et al., 2019). A census technique was then applied to select respondents. Given that the total population of potential respondents (55 internal auditors) across the 19 selected LGAs was small and manageable, it was feasible to include all of them in the study (Mushi et al., 2024). Accordingly, 55 structured questionnaires were distributed to all internal auditors in the selected LGAs. Of these, 49 questionnaires were fully completed and returned, yielding a response rate of 89.1%. Because PLS-SEM performs well with small sample sizes (Changalima & Chuwa, 2025; Hair et al., 2019), the final sample of 49 responses was considered adequate for the analysis.

However, it is important to note that the sample was deliberately restricted to LGAs with known audit problems (poorly performing LGAs). Consequently, the findings of this study apply specifically to LGAs with similar audit challenges and may not be generalizable to all LGAs, particularly those with unqualified audit opinions. Future research should test whether the present findings replicate in LGAs that consistently receive unqualified audit reports.

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3.3 Questionnaire and Measurement Items

The structured questionnaires contained closed-ended questions comprising two (2) sections; Section A was made up of demographic information and Section B had measurement items for study's constructs. A five-point Likert scale ranging from 1 to 5 was employed for all measurement items. Additionally, the current study employed previously validated measures that have been widely used in prior research (See Table 1). Adopting established measurements ensured both the reliability and validity, as these measures had already been tested and confirmed in related previous contexts. Specifically, internal auditors' knowledge was measured by using four (4) items as adapted from Kabuye et al. (2017). Internal audit effectiveness was measured by using three (3) items from Mahyoro and Kasoga (2021). Lastly, public expenditure management was measured by using three (3) items as adapted from Njeru (2017).

Table 1

Measurement items

Construct	Items	Source
Internal auditors' knowledge	Internal auditors are always mentored on performance standards (IAK1) Internal auditors have the strength to say no to instances that lead to fraud (IAK2) Internal audit findings are always based on documents and reliable data (IAK3) Internal auditors have full knowledge of the transaction systems of the entity (IAK4)	Kabuye et al. (2017)
Internal audit effectiveness	All internal auditors' plans were completed as scheduled (IAE1)	Mahyoro and Kasoga (2021)
	Technical advices and instructions are provided (IAE2)	
	Audit recommendations are implemented (IAE3)	
Public expenditure management	Misappropriation of public funds due to unapproved expenditures is reduced (PEM1)	Njeru (2017)
	Expenditures on core activities are made on time, reducing pending bills at end of the financial year (PEM2)	
	Audit queries on unplanned expenditures by each unit in the organisation are reduced (PEM3)	

The measurement items used in this study were adapted from established scales in prior literature. Adaptations primarily involved minor wording modifications to enhance contextual relevance to the Tanzanian local government context. This was relevant as items that were from studies that were not directly conducted in public sector were rephrased to reflect public sector auditing practices. All items were reviewed by three experts (two academics in auditing and one internal auditor) for content validity, clarity, and relevance. Based on their feedback, some items were further refined for precision before full-scale data collection. It should be noted that, a pilot test was not conducted due to the relatively small target population and time constraints. This is acknowledged as a limitation of the study.

3.4 Data Analysis

For testing the study's hypotheses, PLS-SEM in Smart PLS 4 (Ringle et al., 2024), was employed as a second-generation multivariate technique capable of analysing data that comprised both latent and observed variables (Hair et al., 2011; Ringle et al., 2024; Shmueli et al., 2019). PLS-SEM permits the simultaneous assessment of measurement models and structural models, making it highly suitable for studies involving complex relationships among constructs (Changalima & Chuwa, 2025; Hair et al., 2011, 2019). The research included internal auditors' knowledge as a predicting variable. Also, internal audit effectiveness as a mediating variable and public expenditure management as dependent variable. The structural model included the direct and indirect effects and hence, PLS-SEM was considered relevant.

In addition, choosing PLS-SEM in this study was guided by other several reasons. First, the technique is particularly appropriate when the research model includes latent variables that are measured indirectly through several indicators (Becker et al., 2023; Changalima & Chuwa, 2025). In this study, all main variables were measured through multiple items ranging from 3 to 4 items. Second, PLS-SEM is capable of analysing non-normal data. Third, it is well-suited for studies with relatively small sample sizes (Changalima & Chuwa, 2025; Hair et al., 2019), as it provides stable estimates even under such conditions. In this study, 49 questionnaires were received from internal auditors which was relatively small given the nature of the research. Hence, PLS-SEM was considered relevant. Therefore, through applying PLS-SEM, the study was able to maximise the explanatory power of its model and ensure that the hypotheses were tested using a rigorous and appropriate statistical technique (Ringle et al., 2023).

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3.5 Common Method Bias (CMB)

Since this study employed a mono-methodological approach, using only a questionnaire for data collection from internal auditors of selected LGAs themselves, there was a potential risk of CMB. To address this concern, both procedural and statistical remedies were applied. Procedurally, respondents who were internal auditors were assured of anonymity and confidentiality, questions were carefully worded to avoid ambiguity, and the order of items was structured to minimize consistency bias (Podsakoff et al., 2003). Statistically, the study conducted Harman's single-factor (Harman, 1967). The results of the unrotated factor solution indicated that the variance explained by the first factor was 37.992%, which is below the threshold of 50% (Podsakoff et al., 2003). This advocates that CMB is not a serious concern in the present study, and therefore the findings are unlikely to be substantially biased. Furthermore, as other previous studies, the current study assessed the Variance Inflation Factor (VIF) to assess the potential exitance of CMB. The findings unveiled that VIF for outer model and inner model were below 3.3 (Kock, 2015). This confirmed that CMB had no significant concerns in the study's findings.

3.6 Ethical Considerations

This study fully complied with ethical standards for research as recommended. Ethical clearance was obtained from the Institutional Research Review Ethics Committee (IRREC) of the University of Dodoma on 5th May, 2025 (Reference No. MA.84/261/89/15). Additionally, a research permit was granted by the President's Office – Regional Administration and Local Government (PO-RALG) on 2nd June, 2025 (Reference No. AB.307/323/01"R"/153). On the other hand, prior to data collection, all participants were informed on the purpose of the study, their voluntary involvement, and their right to withdraw at any time without repercussions. Written informed consent was obtained from every respondent. To safeguard participant rights, strict measures were implemented to ensure anonymity and confidentiality. No personal identifying information was reported to link a certain individual as only aggregated results are reported.

IV. FINDINGS & DISCUSSION

4.1 Demographic Characteristics of Respondents

The results in Table 2 present the demographic characteristics of respondents. The study sample comprised 49 internal audit professionals with varied characteristics. In terms of designation, the majority were Internal Audit Officer II (36.7%) and Heads of Internal Audit Units (20.4%), with smaller proportions in other officer and auditor categories. Most respondents were male (75.5%), while females made up 24.5%. In term of age, the largest group fell between 42–49 years (32.7%), followed by those aged 26–33 years (30.6%), while only 4.1% were in the youngest age (18–25 years). Furthermore, the majority held a bachelor's degree (69.4%), with 20.4% having postgraduate degrees and 10.2% holding postgraduate diplomas. Regarding professional certification, 38.8% were Certified Public Accountants (CPA), a small proportion (2.0%) held Certified Risk Management and Assurance Auditor (CRMA), while a significant 59.2% had no professional certification. In terms of work experience, 38.8% had less than three years of service, 32.7% had over 10 years, 20.4% had 8–10 years, and 8.2% had 4–7 years of experience. The results unveil a workforce in LGAs with a mix of qualifications, varying experience levels, and a predominantly male composition.

Table 2
Characteristics of the Respondents

Characteristics	Frequency	Percent
Title of the respondent		
Internal audit officer II	18	36.7
Internal audit officer I	4	8.2
Senior internal audit officer	7	14.3
Internal auditor II	4	8.2
Internal auditor I	2	4.1
Senior internal auditor	2	4.1
Principal internal auditor II	1	2.0
Principal internal auditor I	1	2.0
Head of internal audit unit	10	20.4
Total	**49**	**100**
Sex		
Male	37	75.5
Female	12	24.5
Total	**49**	**100**
Age in years		

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18 – 25	2	4.1
26 – 33	15	30.6
34 – 41	10	20.4
42 – 49	16	32.7
50 and above	6	12.2
Total	**49**	**100**
Education qualification		
Postgraduate Diploma	5	10.2
Degree	34	69.4
Postgraduate Degree	10	20.4
Total	**49**	**100**
Professional certification		
Certified Public Accountant (CPA)	19	38.8
Certified Risk Management and Assurance Auditor (CRMA)	1	2.0
Not certified	29	59.2
Total	**49**	**100**
Number of years in service		
0 – 3	19	38.8
4 – 7	4	8.2
8 – 10	10	20.4
Above 10	16	32.7
Total	**49**	**100**

4.2 Measurement Model Assessment

The assessment of the measurement model was conducted as the first step of the analysis using SmartPLS 4. The evaluation focused on key aspects of reliability and validity, including indicator reliability, internal consistency reliability, convergent validity, and discriminant validity (Changalima & Chuwa, 2025; Ringle et al., 2023). Indicator reliability was assessed by examining the outer loadings of each item, while internal consistency reliability was evaluated using Cronbach's alpha and composite reliability. Convergent validity was determined through the average variance extracted (AVE), and discriminant validity was assessed using Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) to ensure that constructs were empirically distinct from one another.

Specifically, the findings in Table 3 and 4 show the relevant criteria used in measurement model to assess the reliability and validity. All items demonstrated strong outer loadings, exceeding the recommended threshold of 0.708, indicating that the indicators reliably measure their respective constructs (Ringle et al., 2023). Cronbach's alpha coefficients and composite reliability values showed achievement of internal consistency across all constructs (Hair et al., 2019; Ringle et al., 2023). Also, the AVE for each construct surpassed 0.5 the recommended threshold, confirming convergent validity (Changalima & Chuwa, 2025; Hair et al., 2017, 2021). These results indicate that the constructs internal auditors' knowledge, internal audit effectiveness, and public expenditure management are measured reliably and validly, supporting the adequacy of the measurement model.

Table 3

Outer Loadings, VIF, Cronbach's Alpha, Composite Reliability and AVE

Construct/Items	Outer Loadings	VIF	Cronbach's alpha	Composite reliability	AVE
Internal auditors' knowledge	-	-	*0.867*	*0.910*	*0.716*
IAK1	0.806	1.823			
IAK2	0.879	2.420			
IAK3	0.815	1.887			
IAK4	0.881	2.554			
Internal audit effectiveness	-	-	*0.809*	*0.885*	*0.721*
IAE1	0.782	1.601			
IAE2	0.878	2.249			
IAE3	0.884	1.849			
Public expenditure management	-	-	*0.856*	*0.912*	*0.776*
PEM1	0.861	1.791			
PEM2	0.901	2.629			
PEM3	0.879	2.447			

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Furthermore, discriminant validity was assessed using both the HTMT ratio and Fornell-Larcker criterion (see Table 4). According to the Fornell-Larcker criterion, the square roots of the AVE values for all constructs exceeded their respective correlations with other constructs (Fornell & Larcker, 1981). The HTMT results largely supported this conclusion, with values below the conservative threshold of 0.85 for most construct pairs (Ab Hamid et al., 2017; Changalima & Chuwa, 2025; Henseler et al., 2015). However, the HTMT value between internal auditors' knowledge and public expenditure management (0.879) slightly exceeded 0.85, suggesting a potential overlap and indicating that these constructs may share related conceptual variance. Although PLS-SEM literature supports HTMT values of up to 0.9 and therefore provides adequate evidence of discriminant validity (Changalima & Chuwa, 2025; Ringle et al., 2023), this relatively high correlation warrants further consideration.

It is plausible that internal auditors' knowledge and public expenditure management share common method variance (CMV), particularly given that both were measured through self-reported perceptual items from the same respondents. Such CMV could arise from similar response patterns, social desirability bias, or the inherent conceptual proximity between possessing knowledge and its perceived application in managing public expenditures. Despite the satisfactory results of statistical remedies, this potential overlap suggests that future studies could benefit from multi-method or multi-source data collection to more clearly disentangle the constructs.

Table 4
Discriminant validity

HTMT			
Constructs	**Internal audit effectiveness**	**Internal auditors' knowledge**	**Public expenditure management**
Internal audit effectiveness			
Internal auditors' knowledge	0.705		
Public expenditure management	0.818	0.879	
Fornell-Larcker criterion			
Constructs	**Internal audit effectiveness**	**Internal auditors' knowledge**	**Public expenditure management**
Internal audit effectiveness	*0.849*		
Internal auditors' knowledge	0.610	*0.846*	
Public expenditure management	0.708	0.759	*0.881*

Note(s): Values in italics represent √AVE

4.3 Structural Model Assessment

The structural model was assessed in this study during the second stage (see Figure 2), which primarily focused on the analysis of path coefficients and other associated statistics. Initially, following the existing recommendations (Changalima & Chuwa, 2025; Ringle et al., 2023), the study assessed the VIF for each predictor variable to evaluate the potential presence of multicollinearity, as high multicollinearity can affect the overall model results. The results showed that multicollinearity in the inner model was not a concern, as all VIF ranged from 1.0 to 1.593, were below the commonly accepted threshold of 5.0 (Hair et al., 2019), suggesting that the predictor variables were sufficiently independent and that the structural model estimations could be considered reliable.

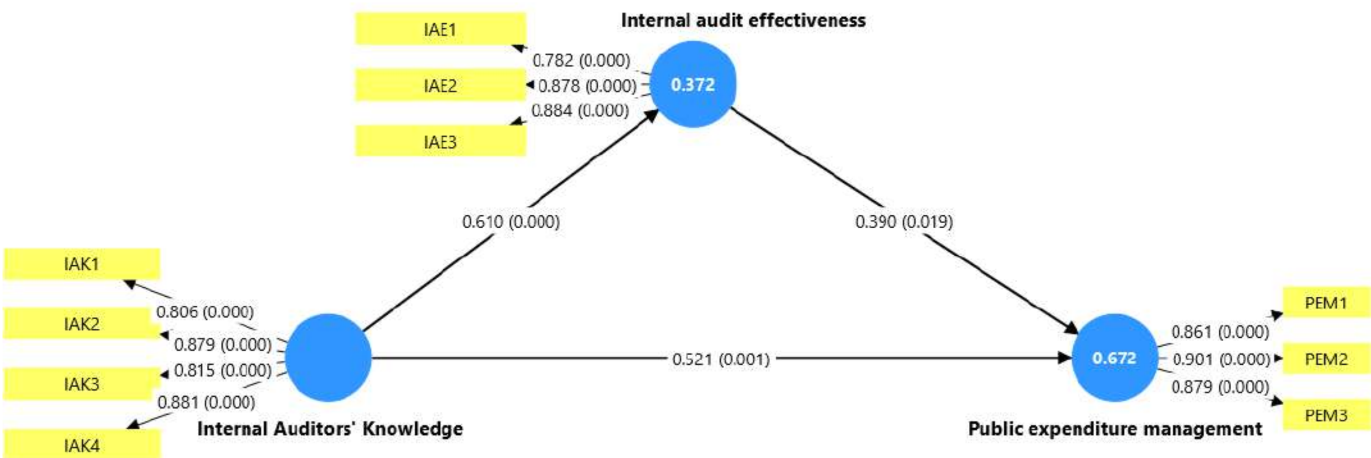

Figure 2
PLS-SEM bootstrapping results for structural model assessment

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This study hypothesized that internal auditors' knowledge positively affects public expenditure management. The results in Table 5 provide strong support for this hypothesis, as the relationship between internal auditors' knowledge and public expenditure management was found to be both positive (β = 0.522) and statistically significant ($t = 3.244$, $p = 0.001$), with a confidence interval between 0.250 and 0.856 that does not cross zero. Therefore, hypothesis H1 is accepted. The results in Table 5 demonstrate that internal auditors' knowledge and internal audit effectiveness are positively and significantly related (β = 0.610, $t = 5.753$, $p < 0.0001$), supporting H2. Therefore, internal auditors' knowledge positively affects public expenditure management. Furthermore, H3 is supported as the relationship between internal audit effectiveness and public expenditure management was positive and significant (β = 0.390, $t = 2.296$, $p = 0.022$). On the other hand, the results unveiled a significant mediating effect of internal audit effectiveness on the relationship between internal auditors' knowledge and public expenditure management (β = 0.238, $t = 2.547$, $p = 0.011$). Therefore, H4 is accepted. Furthermore, the confidence intervals ranged from 0.028 to 0.398, suggesting that greater internal auditors' knowledge is associated with improved internal audit effectiveness, which in turn positively influences public expenditure management.

Table 5

The direct and mediating (indirect) effects of internal auditors' knowledge

Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	LCI	HCI	p-values
Direct effect							
H1	0.522	0.538	0.161	3.244	0.250	0.856	0.001
H2	0.610	0.619	0.106	5.753	0.386	0.797	0.000
H3	0.390	0.375	0.17	2.296	0.039	0.669	0.022
Mediating (indirect) effect							
H4	0.238	0.222	0.093	2.547	0.028	0.398	0.011

The study assessed the model explanatory power, and predictive relevance. The findings in Table 6 presents the R- square, f-square and Q-square. According to the thresholds recommended by Cohen (1988), i.e., 0.02 for a small effect size, 0.15 for a medium effect size, and 0.35 for a large effect size, the results of the analysis in the current study indicate that internal auditors' knowledge exhibits a large effect on both internal audit effectiveness ($f^2 = 0.593$) and public expenditure management ($f^2 = 0.521$), highlighting its critical role in enhancing effectiveness of internal audit and public expenditure management. On the other hand, internal audit effectiveness itself demonstrated a medium effect on public expenditure management ($f^2 = 0.290$).

Regarding the R^2 value of 0.372 for internal audit effectiveness, it reveals that 37.2% of the variation in internal audit effectiveness is explained by internal auditors' knowledge. On the other hand, public expenditure management was substantially explained by the model, with 67.2% of its variation accounted for by internal auditors' knowledge and internal audit effectiveness as predictors. The predictive relevance of the model was confirmed with Q^2 values of 0.334 for internal audit effectiveness and 0.558 for public expenditure management, indicating that the model is robust in predicting outcomes. All these values of Q^2 are above 0 which shows that the model predictive relevancy is achieved (Changalima & Chuwa, 2025; Hair et al., 2019).

Table 6

R-square, f-square and Q-square

Constructs/Hypothesised relationships	R-square
Internal audit effectiveness	0.372
Public expenditure management	0.672
	f-square
Internal auditors' knowledge → Public expenditure management	0.521
Internal auditors' knowledge → Internal audit effectiveness	0.593
Internal audit effectiveness → Public expenditure management	0.290
	Q-square
Internal audit effectiveness	0.334
Public expenditure management	0.558

4.4 Discussion

The current study reveals that internal auditors' knowledge is a significant determinant of public expenditure management. Therefore, knowledge of internal auditors contributes to strengthening financial governance in the public

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sector, especially in LGAs. The study strongly supports the implication that internal auditors' knowledge plays a critical role in enhancing effective public expenditure management in the public sector. More specifically, the study suggests that investing in mentoring internal auditors on performance standards, empowering them to reject situations that may lead to fraud, ensuring that audit findings are grounded from reliable documents, and equipping auditors with comprehensive knowledge of the entity's transaction systems (Kabuye et al., 2017), is crucial for strengthening public expenditure management in LGAs. This supports the RBV as knowledge is part of competences which is regarded as crucial resources that attribute which in internal auditors' functions. The finding is supported by Krichene and Baklouti (2020) who opined that knowledge is among the crucial competences that enables an auditor to develop creativity and ultimately accumulates in performance achievements. The finding is also supported by previous research such as Nurdiono and Gamayuni (2018) who found that internal auditors' knowledge as part of competence attribute has a significant effect on LGAs internal auditors' performance in Indonesia.

Additionally, internal auditors' knowledge positively affects internal audit effectiveness which supports the fact that effectiveness of audit functions in LGAs is attributed by internal auditors' knowledge. The result is supported by Alqudah et al. (2019) and Turetken et al. (2020) who highlighted that knowledge is important in determining effectiveness of internal audit. Thus, outcomes related to the effectiveness of internal audit in LGAs, such as the execution of audit plans on schedule, providing technical advice and instructions, and the implementation of audit recommendations (Mahyoro & Kasoga, 2021), are contributed to by the knowledge that internal auditors possess. Also, the study examined the mediating effect of internal audit effectiveness on internal auditors' knowledge and public expenditure management. Therefore, the study tested the hypothesis that centre in examining the indirect effect of internal auditors' knowledge on public expenditure management via internal audit effectiveness.

The study's findings confirmed the mediating effect of internal audit effectiveness in the main relationship. These findings emphasise the relevance of internal audit effectiveness (Alqudah et al., 2023; Chi et al., 2024; Mahyoro & Kasoga, 2021), especially in LGAs. The results imply that investing in knowledge of internal auditors can improve audit processes and outcomes in LGAs and hence, enhancing public expenditure management. Given, the fact that the direct effect of internal auditors' knowledge on public expenditure management is significant and the indirect effect is also significant, the study confirms the partial mediation role of internal audit effectiveness. Therefore, the study stresses on the role of internal audit effectiveness (mediator), which acts as a mechanism through which internal auditors' knowledge relates to public expenditure management. Past studies such as Thuy (2025) confirmed the significant mediating role of internal audit effectiveness. In this regard, LGAs may achieve better public expenditure management directly by utilizing internal auditors' knowledge and indirectly through internal audit effectiveness.

The study's results reveal a significant partial mediation effect, whereby internal audit effectiveness mediates the relationship between internal auditors' knowledge and public expenditure management ($\beta = 0.238$, $t = 2.547$, $p = 0.011$, 95% CI [0.028, 0.398]). However, the direct effect of internal auditors' knowledge on public expenditure management ($\beta = 0.522$) is substantially stronger than the indirect effect channelled through audit effectiveness. The total effect is approximately 0.760. This indicates complementary partial mediation, suggesting that while internal audit effectiveness represents a meaningful transmission mechanism, the primary influence of auditors' knowledge operates through direct pathways. Knowledgeable internal auditors appear to enhance public expenditure management not only by enhancing the overall effectiveness of the audit function but also through independent channels. These may include direct advisory roles, enhanced professional judgment, and informal consultations with management that influences decision-making beyond formal auditing processes.

The finding that only about one-third of the total effect is mediated by audit effectiveness highlights the relevance of auditors' individual competencies. Even within organizational constraints that may limit full audit effectiveness, highly knowledgeable auditors can still contribute substantially to better public expenditure management. This aligns with the RBV in public sector auditing, which emphasize that individual expertise remains a potential resource for achieving a desired outcome. The 95% confidence interval for the indirect effect, while excluding zero and thus confirming statistical significance, is relatively wide [0.028, 0.398]. This indicates moderate precision in estimating the strength of the mediation pathway and suggests that the true proportion of the mediated effect may vary across contexts. Such variability is common in PLS-SEM studies involving complex behavioral constructs and calls for cautious interpretation regarding the magnitude of mediation.

In these regards, these results suggest that capacity-building initiatives should prioritize the development of internal auditors' technical knowledge, professional skills, and competencies. Such investments yield substantial direct returns on public expenditure management while simultaneously generating secondary benefits through improved audit function effectiveness. Therefore, the surveyed LGAs should therefore pursue strategies such as enhancing auditors' knowledge base and, concurrently, addressing structural and organizational factors that determine overall internal audit effectiveness.

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V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study developed and tested a conceptual model showing that internal auditors' knowledge has both direct and indirect effects on public expenditure management in the surveyed Tanzanian LGAs, with internal audit effectiveness serving as a partial mediator. Findings from 49 internal auditors highlight that stronger auditor knowledge enhances audit effectiveness, which in turn improves expenditure management outcomes. Therefore, continuous professional training and capacity-building programs for internal auditors are essential to strengthen public financial governance in the surveyed LGAs.

5.2 Recommendations

The current study has several implications to managers, practitioners and internal auditors in LGAs. First, LGAs and oversight agencies should prioritize capacity building and training programs that strengthen internal auditors' knowledge. Training in financial management, risk-based auditing, and compliance with regulations will enhance auditors' ability to facilitate proper management of public funds effectively within LGAs.

Second, measures should be taken to strengthen internal audit effectiveness. This includes improving audit processes, adopting modern audit tools, ensuring auditors have access to accurate information, and providing adequate resources to support their work. An effective audit system is essential for translating auditors' knowledge into better expenditure management outcomes. Lastly, policy and institutional support must be strengthened to enable favourable environment for internal auditors, especially in LGAs. This involves ensuring independence of audit units, developing clear accountability frameworks, and institutionalizing monitoring and evaluation systems to sustain improvements in public expenditure management.

Declaration of Interest

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

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