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## Article

### The internal audit functions : competence, effectiveness and external auditors' reliance in Tanzania

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## The Internal Audit Functions: Competence, Effectiveness and External Auditors' Reliance in Tanzania

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### Abstract

*This study examines the influence of internal audit function competence on the extent of external auditors' reliance on internal audit function work and whether the internal audit function effectiveness mediates such a relationship. Data was collected from 100 external auditors of the Dar es Salaam Stock Exchange-listed companies and analysed using a Partial Least Square Structural Equation Modelling. The result indicates that internal audit function competence does not affect the external auditors' reliance on internal audit function work. Nevertheless, the result shows that the competence of internal audit function has a positive effect on the external auditors' reliance on internal audit work. Also, the result reveals that internal audit function effectiveness has a positive influence on external auditors' reliance on internal audit function work. Results suggest that internal audit function effectiveness fully mediates the relationship between internal audit function competence and the external auditors' reliance on internal audit function work. Thus, improving competence can increase internal audit function effectiveness which can also increase the external auditors' reliance on internal audit function work. The study contributes to the literature by adding a new dimension, the internal audit function effectiveness, in the external auditors' reliance on the internal audit function. The study recommends to regulators closely monitor the implementation of the guidelines for internal audit functions to improve their effectiveness.*

**Keywords:** Competence; Internal Audit Function; External auditor; Effectiveness; Reliance; Tanzanian Listed Companies

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## **Introduction**

Traditionally, the role of the internal audit function has focused on controls and asset protection (Dellai & Omri, 2016). However, changes in the business environment and the reforms that happened in the wake of accounting scandals in the 2000s elevated their role (Arens *et al.*, 2014). Today, it also evaluates governance and risk management processes (Azad, 2017). These additional activities are essential in the current business settings (Ramachandran *et al.*, 2012)

Because of the reforms, regulators in the world have increased the involvement of internal audit functions in the controls over financial reporting. The Sarbanes-Oxley Act enacted in the United States of America as a response to accounting scandals, for instance, increased the participation of internal audit functions in financial reporting (Soh & Martinov-Bennie, 2011). Section 404 of the Act requires management to evaluate the design and operation, and report on the effectiveness of its internal control over financial reporting. It also requires external auditors to evaluate such assessments and report thereon. Similarly, inspired by international trends on strengthening corporate governance, African countries' regulators, for instance in Tunisia (Oussii & Taktak, 2018) and Tanzania (CMSA, 2002), have also mandated companies to have effective internal audit functions in their corporate governance practices.

From the agency theory's view, external auditors are hired to monitor the management's actions and protect the shareholders' assets (Jensen & Meckling, 1976). However, due to continuing external audit failures in protecting assets (Pizzini *et al.*, 2015), recognition of the role of the internal audit function to enhance financial reporting and prevent such failures has increased. Consequently, there has been an emphasis on the relationship between external auditors and internal audit functions (Endaya, 2014). Audit standard setters have continued to pronounce that external auditors can rely on the internal audit function during the audit of the financial statements (IAASB, 2014). Furthermore, internal auditors and external auditors have some common audit procedures (Azad, 2017). Consistent with the audit risk model, external auditors can be expected to rely on internal audit function work to reduce repetitions of work and their audit efforts (Fowzia, 2010). Effective controls are likely to mitigate inherent risk and therefore external auditors perform fewer substantive tests (Hayes *et al.*, 2005).

As a two step-process, reliance commences with external auditors' decision to rely on the internal audit function and ends with the extent to which external auditors rely on the internal audit function work. Moreover, both steps are influenced by internal audit function competence (Bame-Aldred *et al.*, 2013). Audit standards propose that the extent of external auditors' reliance on internal audit functions' work should be related to the level of technical competence of internal audit functions (IAASB, 2014). However, studies have tended to focus on examining the impact that competence has on reliance decisions (Schneider, 1985; Margheim, 1986; Haron *et al.*, 2004; Alsukker, 2014; Azad, 2017). Generally, these studies have found that external auditors consider the competence of internal audit functions when making reliance decisions. The considerations that the external auditors give to the competence, however, appear to vary across research. For instance, while Haron *et al.* (2004) found competence influences reliance decisions, Alsukker (2014) and Mihret and Admassu (2011) reported no such impact. Variations of results have been related to items included in

the construct in a collection instrument (Schneider, 1984) and contextual factors (Margheim, 1986).

Moreover, it is claimed that external auditors can only rely on internal audit function if it is effective (Mihret & Admassu, 2011; Alsukker, 2014). The internal audit function is said to be effective if it can achieve its objectives of improving the internal control process, risk management process and governance process (Pickett, 2011). It is on these achieved objectives that the external auditors rely on, suggesting that an effective internal audit function can play a mediating role in the external auditors' reliance. Despite the seemingly mediating role, it appears that the mechanisms that mediate the link between internal audit function competence and the extent of external auditors' reliance on internal audit function work have not been adequately explored. So far, only Warongan *et al.* (2014) and Arum (2015) have examined the internal audit function effectiveness intervening role, but their focus is on financial reporting quality. Differently, Altwaijry (2017) argues that the internal audit function can be effective if its competence is at a reasonable level. Dellai and Omri (2016) point out that competent internal auditors can increase the ability of internal audit functions in ensuring the controls are operating effectively. Similarly, incompetence may lead to internal audit function ineffectiveness (Onumah & Krah, 2012) and discourage external auditors' reliance (Malaescu & Sutton, 2015).

In the agency theory's view, management forms the internal audit function to signal to shareholders that they are accountable for the entity's assets (Adams, 1994), so, management ought to ensure the internal audit function is effective. Although the management establishes the internal audit functions to help maintain internal controls, their attributes vary widely and depend on the entity's needs (Azad, 2017), suggesting that their effectiveness may vary as well. In Tanzania, the Capital Market and Security Authority has set the needed attributes of the internal audit function in the listed companies. Among others, it requires to have effective internal audit functions that perform with expertise and due professional care (CMSA, 2002). While this requirement guides the internal audit functions to be effective, it is unknown whether they are indeed competent and effective to warrant reliance.

Although theoretical literature (Bame-Aldred *et al.*, 2013, IAASB, 2014) suggests that internal audit function competence can influence the extent of external auditors' reliance on internal audit function work, limited studies (Munro & Stewart, 2011; Mihret & Admassu, 2011) have examined this relationship. These few studies do not test the internal audit function effectiveness mediation effect despite the notion that external auditors can rely on it if it is effective. Therefore, this study investigates the influence of internal audit function competence on the extent the external auditors rely on internal audit functions' work and whether their effectiveness mediates such a relationship. The rest of this paper is organised as follows: the introduction is followed by the literature supporting this study and the hypotheses of the study. Then, section three is on the methodology, section four presents the results and section five discusses the findings. The paper ends with a conclusion and implication of the study.

## **Theoretical Framework**

This study uses two theories, the agency theory supplemented by the audit risk model, to explain three matters about the extent of external auditors' reliance on internal audit function work. First, the effects the internal audit function competence has on the extent of external auditors' reliance. Second, the impacts of internal audit function competence on internal audit functions effectiveness. Third, the influence of effectiveness on external auditors' reliance. Additionally, the last two matters combine to analyse the mediation effect.

Primarily, the agency theory is concerned with the contractual relationship between the principal and the agent, such as shareholders and management, and its consequences. In the agency relationship, the shareholders hire and delegate work and authority to the managers. However, the managers' wishes and goals are likely to differ from those of the shareholders. They might misuse the authority entrusted to them (Jensen & Meckling, 1976). Thus, agency problems are likely to be inevitable (Bouaicha, 2015). The shareholders' ability to monitor the actions of managers so that they can serve their best interests becomes a big concern (Lee, 2014). Despite this concern, however, managers assure shareholders that the controls for their stakes are effective by establishing internal audit functions. Thus, managers ought to maintain competence to enrich the internal audit functions' ability to achieve their objectives (Oussii & Taktak, 2018).

Studies have used this theory to explain the monitoring mechanisms of the agent (Oussii & Taktak, 2018; Ramachandran *et al.*, 2012). One way of monitoring the managers is through financial statements audit. Hence, managers ought to produce financial reports that disclose everything (Adams, 1994). On the other side, shareholders appoint external auditors to verify the reports (Jensen & Meckling, 1976). Thus, external auditors perform several audit procedures (works) to confirm the report's fairness. However, these works are influenced by several factors, including the internal audit function. As both perform similar roles, there is a chance that external auditors can rely to some extent on the internal audit function to reduce the repetition of work (Azad, 2017). Hence, they can timely complete their work (Pizzini *et al.*, 2015). As such, it is logical for external auditors to seek evidence of competence when evaluating the internal audit functions' effectiveness and the benefit and risk of relying on internal audit functions (Alsukker, 2014). Thus, this theory addresses the influence of competence of the internal audit function on both the extent of external auditors' reliance and the effectiveness of the internal audit function.

On the other hand, studies have employed the audit risk model to explain the effort that external auditors devote in response to internal control effectiveness assessment (Hogan & Wilkins, 2008; Pizzini *et al.*, 2015). The model states that:  $\text{Audit Risk} = \text{Inherent Risk} \times \text{Control Risk} \times \text{Detection Risk}$ . In this model, both inherent risk and control risk form the clients' risks. External auditors cannot control them for the ongoing audit as omissions are already in the financial statements, they only document them based on the assessment of the client. To maintain acceptable audit risk in the face of high client risk, external auditors need to reduce detection risk. Detection risk is reduced by increasing substantive testing samples. As such, more efforts are required to ensure omissions are not in the financial statements (Hayes *et al.*, 2005). Arens *et al.* (2014) highlight that, external auditors rely on the internal audit function when using the audit risk model to evaluate the effectiveness of controls of the

client. External auditors reduce the level of control risk when the internal audit function is effective and thereby reduce substantive tests. Also, external auditors increase the Control Risk level when the internal audit function is weak and increase substantive tests. Hence, the model explains the influence of internal audit function effectiveness on the extent of external auditors' reliance on internal audit function work.

## **Hypotheses Development**

### ***Internal Audit Function Competence and External Auditors' Reliance***

External auditors' reliance is a state of dependence on audit procedures (work) already performed by the internal audit function (IAASB, 2014; Azad, 2017; Schneider, 2009), which the external auditors take as theirs. On the other side, competence is the ability of the internal audit function to achieve and keep the knowledge and skills at the level required to enable the assigned tasks to be performed carefully and follow applicable professional standards (IAASB, 2014). Studies on external auditors' reliance on internal audit functions show that internal audit function competence affects the extent the external auditors rely on internal audit function work. For instance, Schneider (1985) used a sample of 20 external auditors, findings indicated that the competence of the internal audit function was the prerequisite for external auditors' reliance. Further results indicated that the extent of external auditors' reliance on internal audit functions (declined) increased depending on the strength (weakness) of the internal audit functions. Similarly, Haron *et al.* (2004) identified competence as a criterion that external auditors consider before relying on internal auditors' work.

Pizzini *et al.* (2015) examined the influence of internal audit function competence on external auditors' reliance on the internal audit function work. Results indicated that internal audit function competence directly affects reliance. Particularly, competence reduced external audit time and hence enabled timely issues of audit reports. However, Mihret and Admassu (2011) revealed that the competence of internal audit function has no impact on external auditors' reliance on internal audit work.

Generally, empirical studies indicate that external auditors' reliance on internal audit functions is more significant when the internal audit function has higher competence. Specifically, studies show that the competence of internal audit function has a positive influence on external auditors' reliance decisions (Schneider, 1985; Haron *et al.*, 2004) as well as on reliance on internal audit function work (Pizzini *et al.*, 2015). Other studies, however, show that the competence of internal audit functions does not influence the extent to which external auditors rely on internal audit function work (Mihret & Admassu, 2011). Based on these evidences, this study hypothesised that:

***H1: Competence of internal audit function positively influences the external auditors' reliance on internal audit function work.***

### ***Competence of Internal Audit Function and Effectiveness of Internal Audit Function***

Effectiveness is the degree to which the objectives of internal audit functions are correctly attained. The audit standard identifies the internal audit function's objectives as evaluating and improving the effectiveness of governance, risk management and internal control processes (IAASB, 2014). Studies from different settings show varied results concerning the

influence of the competence of internal audit function on internal audit function effectiveness. For instance, Musah *et al.* (2018) modelled the competence of internal audit function as a factor that affects internal audit function effectiveness in Ghana. Results revealed that the competence of internal audit function has positive effects on internal audit function effectiveness. Similarly, using data from Indonesian-listed companies, Arum (2015) documented that internal audit function competence positively influences internal audit function effectiveness.

Obeid (2007) studied the factors that influence the strength of the internal audit function in Sudanese banks. Results revealed that the strength of internal audit function was influenced by its competence. Particularly, rare training opportunities appeared to be the main issue. Soh and Martinov-Bennie (2011) explored factors perceived to be necessary to ensure the effectiveness of internal audit functions, following the accounting scandals in the 2000s. Results identified competencies of internal audit function in various disciplines as one of the factors influencing internal audit function effectiveness. In another study, Cohen and Sayag (2010) argued that exploring the factors that affect the internal audit function effectiveness is crucial to improve the entity's process in Israel. Results showed that the internal audit function effectiveness is not related to professional expertise.

Overall, studies indicate mixed evidence about the influence of the competence of internal audit function on its effectiveness. For instance, both George *et al.* (2015) and Salehi (2016) showed that competence significantly affects internal audit function effectiveness. Arena and Azzone (2009)'s results disclosed that internal audit function effectiveness was determined by competence. In a study by Soh and Martinov-Bennie (2011), it was revealed that the competence of internal audit function in various disciplines was the necessary factor that contributed to internal audit function effectiveness in the aftermath of the accounting scandals in the 2000s and the global financial crisis. Ramachandran *et al.* (2012) also documented the competence of internal audit function as the cause of internal audit function effectiveness in commercial banks in Tanzania. Furthermore, Musah *et al.* (2018) concluded that improving the competence of the internal audit function can enhance the internal audit functions' effectiveness and alleviate financial scandals in Ghana's state-owned entities. Other studies, however, report the competence of the internal audit function has insignificant effects on its effectiveness in some countries such as Tunisia and Israel (Dellai & Omri, 2016; Cohen & Sayag, 2010). Based on this evidence, this study hypothesises that:

***H2: Competence of internal audit function positively influences internal audit function effectiveness.***

### ***Internal Audit Function Effectiveness and External Auditors' Reliance***

External auditors assess the control environment of the client, including the internal audit function effectiveness, to determine the audit procedures required to achieve an acceptable audit risk (Schneider, 2009). Studies that have investigated the audit efforts, and whether external auditors really change the audit tests in response to audit risk have employed various factors. They have used factors such as audit fees and time to measure the efforts that the external auditors devote to the audit and produced mixed results. For instance,

Pizzini *et al.* (2015) examined the association between internal audit function quality and audit delays. Results revealed that internal audit function quality (a prerequisite for internal

audit function effectiveness) is negatively correlated with audit delays. Internal audit function quality influences control risk and external auditors assess the control risk and consequently adjust the audit procedure. They concluded that external auditors reduce audit efforts in response to control risk reduction. In another study, Hogan and Wilkins (2008) investigated the relationship between external auditors' audit efforts, measured by audit fees, and internal control deficiencies. Results indicated that external auditors perform more substantive tests when their clients have internal control deficiencies. Consistent with the audit risk model, they concluded that external auditors respond to higher control risk by increasing their audit effort to maintain an acceptable audit risk.

O'Keefe *et al.* (1994) examined the influence of internal controls on external auditors' audit efforts, as measured by external auditors' labour hours. Results showed that internal control effectiveness was not associated with the audit effort. Similarly, Hackenbrack and Knechel (1997) examined the correlation between resources and internal control reliance. Results indicated no association between control reliance and audit effort that was caused by the substitution of internal control evaluation and testing for substantive procedures. Also, Prawitt *et al.* (2011) analysed the association between the time spent by internal auditors on activities of financial nature and external audit fees. Results indicated that no relation exists between the internal audit function work and external audit fees.

Overall, studies suggest that internal audit function effectiveness influences the extent the external auditors rely on internal audit functions. Specifically, Pizzini *et al.* (2015) indicate that internal audit function effectiveness is positively (negatively) related to internal control effectiveness (control risk). Similarly, Hogan and Wilkins (2008) document that higher control risk increases the external auditors' audit effort. However, studies (Hackenbrack & Knechel, 1997; Prawitt *et al.*, 2011) have also revealed no relationship between internal control effectiveness and external auditors' audit effort. Based on these evidences, this study hypothesised that:

*H3: The internal audit function effectiveness positively influences the external auditors' reliance on internal audit function work.*

### ***Mediation Effect of Internal Audit Function Effectiveness***

It appears that studies about the internal audit function effectiveness mediation effect on the relationship between internal audit function competence and the extent the external auditors rely on the internal audit function work are inadequate. Research (e.g. Warongan *et al.*, 2014; Arum, 2015) appears to study the internal audit function effectiveness but focuses on the financial reporting quality. Arum (2015) reported that internal audit function effectiveness partially mediates the effect of internal audit function competence on financial reporting quality. Similarly, Warongan *et al.* (2014) documented that internal control effectiveness partially mediates the relationship between human resources competence and financial report quality

Despite the lack of research on the mediation effect of internal audit function effectiveness on the relationship between competence and reliance, several works theorise it. For instance, Arens *et al.* (2014) state that external auditors rely on internal audit functions when using the audit risk model to assess control risk. When the internal audit functions are effective, external



auditors increase reliance on internal audit functions, by reducing substantive testing. They also state that external auditors regard internal audit functions as effective if they possess the competence. In another theoretical work, Johnstone *et al.* (2014) state that external auditors assess the client's internal audit function competence to determine its relevance to the external audit. In addition, external auditors evaluate the effectiveness of internal auditors' work to support the use of their work.

Hall (2011) points out that the competence of internal audit functions determines the extent of external auditors' reliance on their work. However, external auditors need to ensure the internal controls available are adequate and working correctly before relying on the internal auditors' work. Effective controls lower control risk and, therefore, external auditors increase reliance. The weaker control results in greater control risk and reduce reliance.

From the literature above, this study advocates a causal sequence relationship from internal audit function competence to internal audit function effectiveness to reliance on internal audit function. Specifically, the higher the level of internal audit function competence, the more the effectiveness of the internal audit function, and the high the likelihood of external auditors' reliance on the internal audit function work. This suggests that the internal audit function effectiveness carries the effect of internal audit function competence on the external auditors' reliance on internal audit function work. Based on these arguments, it was hypothesized that:

*H4: Internal audit function effectiveness mediates the influence of competence on external auditors' reliance on internal audit function work.*

## **Methodology**

### ***Population, Sample and Data Collection***

The study's population was the external auditors from audit firms that were identified to audit the Tanzanian listed companies. These firms were identified through annual reports available on the Dar es Salaam Stock Exchange (DSE) website. However, the total population is undefined due to a lack of a sampling frame because audit firms are restricted to provide their information. As such, a purposive selection of a sample was appropriate, where the researcher used judgement to choose useful cases to achieve the objectives (Saunders *et al.*, 2009). Purposively, the participants are identified and requested to participate until enough sample is obtained (Johnson & Christensen, 2014). As the study aimed to investigate issues that can influence the audit process, a goal was to find experts who decide on the audit approach. External auditors with high seniority were considered suitable, similar to Haron *et al.* (2004) and Alsukker (2014). A pre-survey to establish the possible number of senior external auditors who can participate in the study suggested a sample of 125. A survey strategy was used to collect the actual data based on its ability to collect data more quickly (Singleton & Straits, 2009). In the audit firm, the questionnaires were delivered to a contact person. The contact person was asked to identify and give questionnaires to the right participants: partner, manager and senior auditor. The filled questionnaires were returned to a researcher via email or the contact person.

A total of 125 questionnaires were distributed, and 105 were returned. Questionnaires were checked to ensure the right participants' participation and no missing information. Out of the

returned questionnaires, 100 were valid. In partial least square-structural equation modelling (PLS-SEM) analysis, a sample size should be greater than 10 times the number of paths in the structural model (Hair *et al.*, 2017; Kock & Hadaya, 2018). The model for this study has three paths (Figure I), which shows the sample size is sufficient for analysis.

### ***Measurement of Variables***

The study's variables were captured using a 5-point Likert scale, strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5), due to its ability to simplify the process of responding (Kothari, 2004). These variables were adapted from earlier studies. The dependent variable, the extent of external auditors' reliance on the internal audit function (REL) was measured using nine audit procedures from Azad (2017). These procedures are tests of balances, tests of transactions, design of controls evaluation, tests of controls, substantive tests that involve narrow judgement, testing on regulatory compliance, observation of stocktaking, audit of equity and audit of fixed assets. Following a debate in the literature about how to measure the internal audit function effectiveness, the mediating variable, the study chose to measure it using five items from Dellai and Omri (2016). These items are connected to improving the governance process, risk management processes, internal control processes and regulatory compliance, and the fifth on the timely implementation of recommendations of the internal auditors. The independent variable, internal audit function competence (COM), was measured using four items from Azad (2017). These items are internal auditors' educational background, professional certification, continuing professional seminars and experience.

## **Analysis and Results**

### ***Profile of Respondents***

Table I indicates the respondents' descriptive statistics. Statistics show that the male external auditors dominated the sample of the study, males were 68%, and the rest (32%) were female. Results indicate that most of the participants were senior auditors (62%), followed by audit managers, 33%. The rest group was the audit partners, at 5%. This result indicates that the respondents had the appropriate seniority requirements and were expected to decide about the audit approach during an engagement. The qualifications of respondents included a bachelor's degree, master's degree and Doctoral degree. In addition to the degree, many respondents possessed professional qualifications (CPA, ACCA).

The majority of respondents, 84%, had both bachelor's degrees and professional qualifications. However, it was surprising that some respondents had a bachelor's degree alone, 13%, without professional qualifications despite the law in Tanzania requiring every external auditor to have professional qualifications. Further, some participants had master's degrees and professional qualifications, at 2% and others had both a PhD and professional qualifications, at 1%. As for the experience, results show that no one had less than 2 years of experience, 44% had 2 to 5 years, 35% had 6 to 10 years, and 21% had more than 10 years of experience. These statistics show that respondents had the appropriate experience and skills to understand the subject matter of the study. With such experience, a high level of validity and consistency in the respondents' replies was expected. Overall, the respondents' characteristics suggest that they were senior external auditors in the audit firms. Further, they were sufficiently qualified and experienced to judge the matters for this study, and therefore meet the objective of the study.

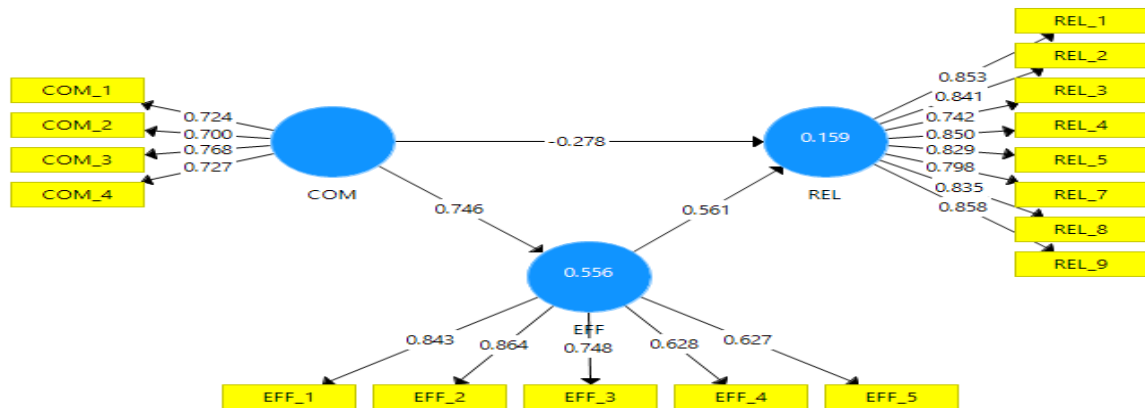
**Table I: Profile of Respondents**

Variable	Classification	Frequency	Percentage
Gender	Male	68	68
	Female	32	32
	Total	100	100
Job Position	Audit Partners	5	5
	Audit Managers	33	33
	Senior Auditors	62	62
	Total	100	100
Qualification	PhD and professional qualification	1	1
	Master's Degree and professional qualification	2	2
	Bachelor's Degree and Professional	84	84
	Bachelor Degree alone	13	13
	Total	100	100
Experience	Under 2 years	0	0
	From 2 to 5 years	44	44
	From 6 to 10 years	35	35
	Above 10 years	21	21
	Total	100	100

**Hypotheses Tests**

A Partial Least Square-Structural Equation Modeling (PLS-SEM) was used to examine the relationship between variables. It can simultaneously evaluate the association of variables, both constructs and indicators (Nitzl *et al.*, 2016; Hair *et al.*, 2017). Moreover, it can handle distribution issues such as data non-normality and small sample sizes (Hair *et al.*, 2019).

**Figure I: Measurement Model**



**Validity and Reliability**

Evaluating the validity and reliability of the variables is necessary to ensure that all indicators represent the construct intended to measure. In PLS-SEM, the study can determine the variables' validity and reliability by assessing the measurement model (Hair *et al.*, 2019). One of the aims of assessing the measurement model is to establish how well each indicator is loaded in a construct. A minimum recommended indicator's loading is 0.708, though lenient values below 0.708 are accepted (Hair *et al.*, 2017). In this study, Figure I indicates the measurement model with indicators' loadings ranging from 0.627 to 0.870, suggesting that the constructs' indicators were acceptable to be included in the data analysis.

Construct reliability was assessed by using composite reliability (CR). Table II indicates the CR values that range between 0.820 and 0.945, which exceed the CR minimum value of 0.700 (Hair *et al.*, 2019). These results indicate good internal consistency among observed variables in measuring each construct.

**Table II: Composite Reliability and AVE**

<b>Construct</b>	<b>CR</b>	<b>AVE</b>
COM	0.820	0.533
EFF	0.862	0.561
REL	0.945	0.683

Construct validity was evaluated using convergent and discriminant validities. Convergent validity was assessed using the Average Variance Extracted (AVE). Table II shows that the AVE values for the constructs ranged between 0.533 and 0.683, which are above the recommended AVE values of 0.500 (Hair *et al.*, 2017). This suggests that the indicators closely measured the intended construct. Moreover, the discriminant validity was assessed by the heterotrait-monotrait (HTMT) ratio of correlations. Table III shows the HTMT ratio values were less than a cutoff of 1.00 (Hair *et al.*, 2020), indicating that each construct is distinct from the other. Overall, the results suggest that the constructs of the study were valid and reliable.

**Table III: Heterotrait-Monotrait Ratio**

	COM	EFF	REL
COM			
EFF	0.868		
REL	0.194	0.399	

**Common Method Variance**

The consequences of common method bias can be damaging to a study's validity. As such, common method variance was checked. Harman's single-factor test was evaluated to confirm if it is lower than 50% of the total variance (Podsakoff *et al.*, 2012). The result indicated a 26% variance. Moreover, VIFs lower than or equal to 3.3 in the inner model (see Table IV)

resulting from a full collinearity test can be considered free of common method bias (Kock, 2015). This means that common method bias has no impact on the study

**Structural Model**

The structural model was assessed to estimate the relationship between the variables of the study. High multicollinearity can undermine the statistical significance of the independent variable(s). Multicollinearity is a problem when the indicators' Variance Inflation Factor (VIF) values are above 5.0 (Hair *et al.*, 2019). Table IV indicates the VIF values, COM was assessed as a predictor of EFF and REL, the VIF values of 1.000 and 2.251, respectively. EFF was assessed as a predictor of REL, and the VIF value was 2.251. Overall, results show that multicollinearity was not a problem in any of the constructs.

**Table IV: Variance Inflation Factor Values**

	EFF	REL
COM	1.000	2.251
EFF		2.251

The structural model was assessed to determine its capabilities to predict target constructs as an alternative to measuring the goodness of fit (Hair *et al.*, 2017). The model's capability is assessed using the coefficients of determination ( $R^2$ ), which evaluates the model's accuracy to predict the dependent variable(s). Table V indicates that the EFF has an  $R^2$  value (0.556), and REL has an  $R^2$  value (0.159). This means that 55.6% of the internal audit function effectiveness can be explained entirely by competence, while 15.9% of the external auditors' reliance is explained by effectiveness and competence.  $R^2$  above 26% and  $R^2$  higher than 13% can be interpreted as large and medium, respectively (Cohen, 1988). Moreover, the effect size ( $f^2$ ) was evaluated to confirm the hypothesised relationships. This checks the effect that an exogenous construct has on an endogenous latent construct (Hair *et al.*, 2020). Table V indicates an  $f^2$  value of 1.251 and 0.166, suggesting that COM and EFF have a significant effect on EFF and REL, respectively, while COM has a weak effect on REL, with an  $f^2$  of 0.041. These results suggest the model has predictive capability.

**Table V: Model Capability Assessment**

	R square	f square	
		EFF	REL
EFF	0.556		
REL	0.159		
COM		1.251	0.041
EFF			0.166

**Hypotheses Test Results**

The study had four hypotheses. Table VI indicates the path coefficient ( $\beta$ ) results along with the p-values in brackets.

**Table VI: Hypotheses Testing Results**

Hypotheses	Path Coefficients $\beta$	p values	= Supported?
		0.05	
H <sub>1</sub> : COM → REL	-0.278	0.070	No
H <sub>2</sub> : COM → EFF	0.746	0.000	Yes
H <sub>3</sub> : EFF → REL	0.561	0.000	Yes
H <sub>4</sub> : COM → EFF → REL	0.418	0.000	Yes

**H<sub>1</sub>:** It was hypothesised that the competence of the internal audit function positively influences external auditors' reliance on internal audit function work. Test results for path COM → REL (Table VI) indicated a direct negative path coefficient ( $\beta$ ) = -0.278 and p-value = 0.070. The results suggested that the competence of internal audit function does not influence the external auditors' reliance on the internal audit function work. The hypothesis was not supported.

**H<sub>2</sub>:** It was hypothesised that the competence of internal audit function positively influences the Effectiveness of internal audit function, i.e., COM → EFF (Table VI). The test result showed a positive path coefficient ( $\beta$ ) = 0.746 and p-value = 0.000. The results suggested that the competence of internal audit function has a significant positive influence on internal audit function effectiveness. The hypothesis was supported.

**H<sub>3</sub>:** It was hypothesised that internal audit function effectiveness positively influences the external auditors' reliance on internal audit function work, i.e., EFF → REL (Table VI). Statistical test results revealed a strong positive path coefficient ( $\beta$ ) = 0.561 and p-value = 0.000. The result suggested that the internal audit function effectiveness has a significant positive influence on the internal audit function work. The hypothesis was supported.

**H<sub>4</sub>:** It was hypothesised that internal audit function effectiveness mediates the relationship between internal audit function competence and the external auditors' reliance on internal audit function work, i.e., COM → EFF → REL (Table VI). Results indicated a strong positive path coefficient ( $\beta$ ) = 0.418 and p-value = 0.000. The results indicated that internal audit function effectiveness mediates the relationship between internal audit function competence and the external auditors' reliance on internal audit function work. The hypothesis was supported.

## Discussion

The study aimed to examine the influence of the competence of internal audit function on the extent the external auditors rely on internal audit function work and whether internal audit function effectiveness intervenes in such a relationship. As such, four hypotheses were developed and tested. The first hypothesis examined the influence of competence on reliance. Results revealed that the level of competence in the listed companies was comparatively average, while the extent of reliance on internal audit function was low. The association between these variables was not significant. The possible explanation for the lack of association between the variables is that external auditors do not see the educational background, professional certification, experience and continuous professional education as

important factors for them to rely on internal audit functions. Further, it could be due to perceiving average competence in the internal audit function, as reported by descriptive statistics, which can be construed as dissatisfaction with the competence of the internal audit function. This result, however, contradicts many findings that indicate that competence influences external auditors' reliance on internal audit function (Pizzini *et al.*, 2015; Alsukker, 2014) and violates the agency theory. Nevertheless, these findings are similar to Haron *et al.* (2004)'s study conducted in Malaysia, which found that internal auditors' professional certification has no significant influence on external auditors' reliance decisions. It is also consistent with Mihret and Admassu (2011), who reported competence of internal audit function does not determine the extent of external auditors' reliance on internal audit work in Ethiopia.

The second objective relates to the effect of competence of internal audit functions on internal audit functions' effectiveness. Results revealed that external auditors perceived both the competence of internal audit functions and internal audit functions' effectiveness to be average. Consistent with the agency theory, their relationship showed that competence has a significant positive influence on internal audit function effectiveness. These results mean that increasing the competence of the internal audit function improves their roles, hence increasing internal audit functions' effectiveness. This means that addressing internal audit function competence issues and maintaining them at a higher level can raise internal audit functions' effectiveness in DSE-listed companies. Compared with other studies, the findings are consistent with the results of Alsukker (2014) and Arum (2015) that saw a significant positive effect of competence on the effectiveness of internal audit function. Also, the results are in line with Warongan's *et al.* (2014) study that reported human resources' competence is needed to enhance internal control effectiveness. But it contradicts Dellai and Omri (2016), who found little relation between competence and effectiveness of internal audit function and they attributed results to low professional certification in the data.

The third objective is concerned with the influence of the effectiveness of internal audit functions on external auditors' reliance. Results revealed that the internal audit function effectiveness has a significant positive influence on the external auditors' reliance on internal audit function work. Thus, external auditors will increase reliance on internal audit function as the internal audit function effectiveness increase and vice versa. This implies that external auditors behave according to the audit risk model, they change their audit efforts (measured by reliance) in response to the internal audit function effectiveness (or control risk). This finding supports the earlier evidence (Hogan & Wilkins, 2008; Pizzini *et al.*, 2015) that confirmed the audit risk model.

The fourth objective is related to the mediation effect. Results showed that internal audit function effectiveness has a significant mediation effect on the relationship between internal audit function competence and the external auditors' reliance on internal audit function work. This suggests that the influence of competence on reliance is higher if the internal audit function is effective. Therefore, when the competence of internal audit functions can be used to improve their roles, such as the internal control process, then external auditors are likely to rely more on the internal audit functions. This evidence is consistent with the theoretical literature (Arens *et al.*, 2014; Johnstone *et al.*, 2014). Overall, results indicate that the competence of internal audit function alone does not influence the extent of external auditors'

reliance on internal audit function work. However, competence that influences the internal audit function effectiveness has as well an impact on the extent of external auditors' reliance on internal audit function work.

## **Conclusions**

This study has examined the influence of the competence of internal audit function on the extent the external auditors rely on internal audit function work and whether internal audit function effectiveness mediates such a relationship, in Tanzanian listed companies. Results show that the competence of internal audit function alone does not affect reliance. But, the competence that improves the roles of internal audit function influences the external auditors' reliance on internal audit function work. Thus, the results prove that the internal audit function effectiveness entirely facilitates the influence of competence on reliance. This study contributes to the existing external auditors' reliance literature (Mihret & Admassu, 2011; Alsukker, 2014) by adding a new dimension, the internal audit function effectiveness. The mediation effect of internal audit function effectiveness on reliance had not been examined in earlier studies. The study also contributes to the audit risk model by testing new variables, effectiveness and reliance.

The findings provide information that is helpful to management and regulators, such as DSE and CMSA. The former can invest in competence to improve internal audit function effectiveness while the latter can closely monitor the implementation of the guidelines for good corporate governance (CMSA, 2002) to improve the internal audit functions' effectiveness and eventually increase trustfulness in terms of reliance.

This study employed a purposive sampling method to select the respondents, the audit firms, and the external auditors. According to Johnson and Christensen (2014), a purposively chosen sample can limit generalising from a sample to a population. Further studies can use different sampling methods and expand the sample to generalise the conclusion to the population.

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