BOARD AUDIT COMMITTEE SUPPORT, CHIEF EXECUTIVE OFFICERS' OPENNESS, INTERNAL AUDITORS' MORAL COURAGE, AND EFFECTIVENESS OF INTERNAL AUDITORS IN FINANCIAL INSTITUTIONS IN UGANDA

BY

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DECLARATION

Declaration by Candidate

This Ph.D. research is my original work and has not been presented for a degree in any other university. No part of this report may be reproduced without the prior written permission of the author and/or Moi University.

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DEDICATION

This work is dedicated to my family and friends especially my late dad Keith Isingoma and my late Mum Prudence Isingoma. Continue to rest in peace!

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ABSTRACT

Internal auditors' effectiveness (IAE) is critical to preventing and detecting risks such as fraud. Despite the presence of internal auditors, fraud persists in Ugandan financial institutions. Existing research suggests that board audit committee support (ACS) influences internal auditors' effectiveness. However, support-employee outcome findings are often mixed, suggesting the need to explore mediators and moderators. The general objective of this study is to investigate the effects of audit committee support (ACS) and CEO openness on internal auditors' effectiveness directly and through internal auditors' moral courage to speak up about ethical issues (MC), and the moderating effect of CEO openness in the ACS-IAE relationship. The specific research objectives were to examine the effects of ACS on IAE, ACS on MC, MC on IAE, the mediating effect of MC in the ACS-IAE link, CEO openness on IAE, CEO openness on MC, the mediating effect of MC in the CEO openness-IAE link, and the moderating influence of CEO openness in the ACS-IAE link. A positivist paradigm underpins this study using an explanatory quantitative research design. Agency, social power, and upper-echelon theories grounded the study. A sample of 135 out of a population of 203 internal auditors in financial institutions in Uganda was randomly selected through multistage sampling. Primary data were collected using a structured questionnaire from 128 internal auditors. The hypotheses were tested using structural equation path modelling. The study findings indicated a positive relationship among the following variables: ACS and IAE (β=0.520; t =6.793; P < 0.01); ACS and MC (β=0.56; t = 10.981; P < 0.01); and total effect of CEO openness on IAE (β = 0.193; t =2.935; P< 0.05; MC and IAE (β=0.483; t =6; P < 0.01); ACS*CEO openness and IAE (β=0.297; t =2.744; P < 0.01). ACS affects IAE directly and indirectly through MC while CEO openness affects IAE on through MC since the direct effect of CEO openness on IAE was insignificant. Conclusively, audit committee support and CEO openness influence internal auditors' moral courage and, ultimately, internal audit effectiveness. Additionally, CEO openness moderates the audit committee support-internal audit effectiveness link such that the board audit committee support-internal audit effectiveness effect is higher with more open CEOs. Theoretical contributions include demonstrating internal auditors' moral courage as a mediator; CEO openness as a predictor of internal auditors' moral courage and, ultimately, internal audit effectiveness, and as a moderator; the wider application of the upper-echelon theory that posits that effectiveness in organisations reflects CEOs 'values; and the power-dependence theory of responses to whistleblowing, which posits that whistleblowers are likely to be more effective when supported by superiors. Policymakers and regulators should encourage openness, courageous behaviour, and caring boards. In addition, board support for internal auditors. Country-specific regulations and cultures may limit this study's generalization; thus, comparative studies are recommended.

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OPERATIONAL DEFINITIONS OF KEY TERMS

Audit Committee Support: This refers to the perception by internal auditors that the Audit Committee of the Board cares about them and their well-being (Khelil *et al., 2018*).

Board audit committee: This is the independent committee of the board that supervises internal auditors (Financial Institutions (Corporate Governance) Regulations, 2005).

Board: The board is the "board of directors" of a financial institution that is charged with overseeing the work of management, internal auditors, employees, and external auditors on behalf of the stakeholders (Financial Institutions (Corporate Governance) Regulations, 2005)

CEO Openness: as deduced from the definition of managerial openness (Detert *et al*., 2007) refers to subordinates' perception that the CEO listens to them, is interested in their ideas, gives fair consideration to ideas presented, and at least sometimes takes action to address the matter raised.

Chief Executive Officer (CEO) is the dominant member of the Top Management Team and the overall leader of the organization (Hambrick, 1984).

Courage refers to a willful, intentional act, executed after mindful deliberation, about a noble good or worthy end (Rate, Clarke, Lindsay, & Sternberg, 2007).

Financial Institution (FI) refers to an entity that engages in the business of dealing with financial and monetary transactions like loans, deposits, currency, insurance, and investments.

Internal Auditors' Effectiveness refers to the value-added by the internal audit function. In this study, it is measured by the extent of the internal audit recommendations on Business process improvement, governance process improvement, internal control, and managerial decision making similar to Barišić & Tušek (2016).

Moral Courage refers to a "moral willful, intentional act, executed after mindful deliberation, involving a substantial risk to the actor, primarily motivated to bring about a noble good or worthy end"(Rate *et al.*, 2007)

"Moral Courage of Internal Auditors" is the behaviour of internal auditors that involves confronting peers and managers when the peers and managers violate ethical standards, stating views about ethical issues, and going against a group's decision if the group violates ethical standards (Khelil *et al., 2018*).

ABBREVIATIONS AND ACRONYMS

ACS	:	Board audit committee support
BOU	:	Bank of Uganda
CAE	:	Chief Audit Executive
CEO	:	Chief Executive Officer
CB-SEM	:	Covariance-based structural equation modeling
CFA	:	Confirmatory Factor Analysis
CFO	:	Chief Finance Officer
CMB	:	Common Methods Bias
CMV	:	Common Methods Variance
EFA	:	Exploratory Factor Analysis
FI	:	Financial Institution
IAE	:	Internal Audit Effectiveness
IAF	:	Internal Audit Function
IIA	:	Institute of Internal Auditors
IV	:	Independent variable
MC	:	Moral courage
OLS	:	Ordinary Least Squares
POS	:	Perceived Organizational Support
PLS	:	Partial Least Squares

PLS	:	Partial Least Squares
PLS-SEM	:	Partial Least Square structural equation modelling
PSS	:	Perceived Supervisor Support
SEM	:	Structural Equation Modeling
SPSS	:	Statistical Package for the Social Sciences
Std.Dev	:	Standard deviation
VIF	:	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background of the study, the statement of the problem, the objectives of the study, the hypotheses, the significance, and the scope of the study.

1.1 Background of the Study

Corporate scandals have necessitated the implementation of effective corporate governance globally (Endaya & Hanefah, 2016; Coram *et al*., 2008), and effectiveness of internal auditors is a component of effective governance. Internal auditors, along with management, the board's audit committee, and external auditors, are considered the pillars of corporate governance (Gramling *et al*., 2004). Internal auditors contribute to enhancing internal controls, managerial decision-making, business processes, and governance by performing the oversight function on behalf of the board's audit committee and providing consulting services to management (Barišić & Tušek, 2016). Internal auditors ensure that internal controls are effective and function as intended, making them the "eyes and ears of the audit committee and senior management" (Arena & Sarens, 2015, p. 1). This way, they are expected to contribute to reducing or eliminating waste and preventing or detecting risks, such as fraud (Dzikrullah *et al*., 2020; Mihret & Grant, 2017). Thus, enhancing the effectiveness of internal auditors is of interest to both scholars and practitioners (Vadasi *et al*. 2019). Internal auditors' effectiveness refers to internal auditors' value addition by strengthening business processes, managerial decision-making, internal controls, and governance (Barišić & Tušek, 2016.

Despite the importance of internal auditors' effectiveness, concerns over internal auditors' ineffectiveness persist among practitioners and scholars alike. For example, during corporate scandals, internal auditors, who are often referred to as the watchdogs of the audit committee, have been reported to remain silent or some of their recommendations have often not been implemented (Bananuka *et al*., 2017). This raises questions about internal auditors' contribution to internal controls, managerial decision-making, governance, and business processes. The accounting fraud at Enron and WorldCom brought to light the value of internal auditors (Carcello *et al*., 2005). Moreover, corporate failures have been attributed to ineffective internal auditors, particularly in their inability to establish sound internal controls (Christopher, 2015). Thus, the effectiveness of internal auditors remains a relevant and ongoing topic (Lenz, 2013), with calls for more empirical studies to understand the drivers of the effectiveness of internal auditors (Coetzee & Erasmus, 2017; Khelil, 2022).

Existing studies emphasize the need for empirical research on the effectiveness of internal auditors, but scant evidence exists, especially regarding drivers of internal auditors' effectiveness (Khelil, 2022; Ndukwe, 2016). Recent research (Weekes-Marshall, 2020) highlights the need for studies examining the effect of interactions between audit committees and top executives on internal auditors' effectiveness.

Existing research on the role of audit committees' actions on the effectiveness of internal auditors has so far examined the effect of the support from audit committees. For instance, Alzeban and Sawan (2015) revealed a positive relationship between board audit committee support and the implementation of internal auditors' recommendations. However, such relationships between support from a supervisors and their outcomes are often inconsistent due to the influence of third variables in form of behaviours of other organisational actors (Yang *et al*., 2020). Therefore, examining the main, mediating and moderating variables that interact with audit committee support to affect internal auditors' effectiveness is of theoretical and practical significance. Thus, this study proposes main, mediating, and moderating variables that could interact with audit committee support to affect internal auditors' effectiveness,

This study introduces CEO openness as a potential independent variable that can influence internal auditors' effectiveness, alongside the audit committee of the board. CEO openness refers to the perception of subordinates that the CEO listens to them, considers their ideas, and occasionally acts to resolve issues. Previous research has suggested the need for studies on how internal auditors serving two masters affect their effectiveness and how executive behaviors affect internal auditors' effectiveness. Related to this, Lenz and Hahn requested for studies on the effects of executive behaviours on internal auditors' effectiveness, Bananuka *et al*. (2017) found that CEO openness behaviour is a concern in Ugandan financial institutions, but its effect on internal auditors' effectiveness has not been empirically examined. This study argues that open CEOs can positively influence internal auditors' effectiveness, drawing on Morrison's (2011) theoretical literature that suggests leader openness positively impacts employee outcomes such as error correction by fostering a sense of psychological safety.

Additionally, this study proposes internal auditors' moral courage to speak about ethical issues, as a mediating variable in the relationships between audit committee support and internal auditors' effectiveness. Internal auditors' moral courage to speak about ethical issues is a soft skill. Numerous studies stress the value of internal auditors' soft skills (O'Leary & Stewart, 2007; Mihret *et al*., 2010; Soh & Martinov-Bennie, 2011; Lenz & Hahn, 2015; Türetken *et al*., 2020), yet the effects of some soft skills on internal audit effectiveness have not yet been adequately empirically investigated to our knowledge. For instance, the success of an internal audit is anticipated to be greatly influenced by the courage to speak up in contentious situations (Lenz & Hahn, 2015;

Türetken *et al*., 2020). Therefore, some research (Türetken *et al*., 2020) recommends that future empirical studies focus more on the effect of such ethical behaviours on internal audit effectiveness. A few studies (Khelil *et al*., 2018; Khelil *et al*., 2016) have thus far examined internal auditors' moral courage, although the focus of existing research is on the antecedents of internal auditors' moral courage but not the consequences of internal auditors' moral courage. Moral courage is a virtue that motivates and enables people to act morally following the standards of their professions (Sekerka *et al*., 2009; Khelil *et al*., 2018), and speaking up is a type of moral courage behaviour (Khelil *et al*., 2018; Morales-Sánchez & Cabello-Medina, 2013). However, to the researcher's knowledge, no empirical research has been done on how and why the moral courage of internal auditors affects internal auditors' effectiveness.

Furthermore, this study proposes internal auditors' moral courage as a mediating variable in the relationship between CEO openness and internal auditors' effectiveness for the same reason of exploring the role of soft skills such as speaking behaviour on internal auditors' effectiveness.

Additionally, in addition to proposing CEO openness as an independent variable, this study further proposes CEO openness as a potential moderator in the relationship between audit committee support and internal auditors' effectiveness. Although internal auditors are assumed independent of the CEO, evidence shows that CEOs still influence internal auditors through affecting internal auditors' tenure and pay (Bananuka *et al*., 2017). It is therefore arguable that as a supportive audit committee positively affects internal auditors' effectiveness, the openness of the CEO is likely to enhance the benefits by creating an environment that encourages internal auditors to feel psychologically safe to make constructive recommendations that positively affect tangible internal auditor effectiveness, in addition to making implementors of recommendations safe to implement internal auditors' recommendations.

Additionally, this study aims to broaden the existing body of knowledge by combining theories that have not been thoroughly explored in previous studies on internal auditor's effectiveness. Most studies have either disregarded theories or heavily relied on agency theory without integrating insights from other disciplines (Kotb *et al*., 2020) despite the calls by Christopher (2019) and Endaya and Hanefah (2013) to use multiple theories to examine additional explanatory variables, such as behavioral and social factors .To address these gaps, this study employs the power-dependence theory of organizational responses to whistleblowing (Casal & Zalkind, 1995; Near & Miceli, 1985; Near & Miceli, 1987; Miceli & Near, 1992; Miceli & Near, 1994) to explain the mediating effects of internal auditors' moral courage and the upper echelon theory to explain the effects of CEOs

Lastly, this study aims to use evidence from financial institutions in Uganda, with a view of extending the body of knowledge by increasing empirical evidence from a developing country context. Internal auditing research conducted in developing countries is limited (Mihret & Yismaw, 2007; Onumah & Krah, 2012; Alzeban & Gwilliam, 2014; Alzeban, 2015; Sakour & Laila, 2015; Dellai & Omri, 2016; Dicle & Usluer, 2016; Endaya & Hanefah, 2016; Khlif & Samaha, 2016; Asiedu & Deffor, 2017; Kabuye *et al*., 2017; Dal Mas & Barac, 2018; Erasmus & Coetzee, 2018; Khelil *et al*., 2016; Khelil *et al*., 2018; Oussii & Klibi, 2019; Khelil *et al*., 2019; Mubako & Klibi, 2019; Plant *et al*., 2020; Mahyoro & Kasoga, 2021; Nalukenge *et al*., 2021; Although some studies (Lenz & Hahn, 2015) have called for studies on the effects of internal auditors' characteristics, only a few studies in the developing world have examined how internal auditor characteristics, such as leadership style (transactional or transformational) (Dal Mas & Barac, 2018) and gender (Oussii & Klibi, 2019), impact internal auditors' effectiveness. None of the studies in the developing world has examined the effects of CEO characteristics on internal auditors' moral courage or internal audit effectiveness. By 2020, 75.5% of global internal auditing research had been conducted in highly regulated developed countries such as North America, Europe, and Australia (Kotb *et al*., 2020), and a small percentage of this internal auditing research had been conducted in the developing world. It is difficult to generalize these findings to the developing world because of differences in cultures, regulations, and levels of corporate governance development. Kotb *et al*. (2020) further recommended more internal auditing studies in developing countries. Thus, this study fills the gaps in internal auditing research in the developing world.

1.1.1 The Ugandan Context

The Ugandan formal financial services sector presents is an ideal testing ground for this study on the effectiveness of internal auditors due to the history of the ineffectiveness of the internal auditors in the sector.

The financial sector is essential to Uganda's development since it makes a significant contribution to the country's national income. For instance, according to László *et al*. (2021), the financial sector's total assets at the end of December 2018 were 45.81 trillion US dollars or 44.3% of Uganda's gross domestic product (GDP). However, a significant portion of Uganda's financial institutions have closed (Sendyona, 2020), and some are poorly run and lack accountability (Irbad & Jayaprakash, 2018). Moreover, several financial institutions closed in the last decade (Bank of Uganda, 2022; Sendyona, 2020); Bank of Uganda Annual Supervision Reports, 2016; 2014; 2012).

Table 1.1: Some financial institutions in Uganda that closed

Financial institution	Year of closure
Afriland First Bank	2022
Imperial Bank (Uganda) Limited	2016
Crane Bank	2016
Global Trust Bank Limited	2014
National Bank of Commerce Limited	2012
Trust Bank Limited	1999
Cooperative Bank Limited	1999
Greenland Bank Limited	1998
International Credit Bank Limited	1998
Trans-Africa Bank Limited	1998
Teefe Bank Limited	1994

Sources: *Bank of Uganda (2022); Sendyona (2020); Bank of Uganda Annual Supervision Reports, 2016; 2014; 2012.*

Banks lose between $1 and $10 million due to fraud, while the insurance sector loses an annual revenue of between 15 and 25 percent (Kabuye *et al.,* 2017; KPMG, 2015; Deloitte, 2013). Fraud is considerably more pervasive in Uganda's financial sector than in other industries.

With such risks in the financial services sector, the ability of internal auditors to achieve the goal of strengthening internal controls is key. Moreover, institutional failures have been attributed to internal audit failures (Tumusiime-Mutebile, 2012). Internal auditors in Ugandan institutions often remain silent, or some internal auditors' recommendations are often not implemented (Bananuka *et al*., 2017), raising concerns about internal auditors' value addition to business processes, internal controls, governance, and managerial decision-making, which are essential for fraud and waste mitigation. Tumusiime-Mutebile (2012) attributes institutional failures to ineffective internal auditing and argues that internal auditors' effectiveness needs to be enhanced.

Motivated by internal audit challenges among other governance challenges in Financial Institutions in Uganda, and the need to strengthen internal auditor effectiveness, regulators in Uganda enacted laws and regulations in the form of the Financial Institutions (Corporate Governance) Regulations, 2005, to improve internal auditors' effectiveness, among other aspects of effective corporate governance. The Financial Institutions (Corporate Governance) Regulations, 2005, under Section 131(1)(k) of the Financial Institutions Act No. 2 of 2004, provide for a board or board's audit committee, top management, and internal auditors in each financial institution, and spell out how top management and the board or board's audit committee are expected to relate to internal auditors. The board or board's audit committee is the ultimate supervisor of internal auditors, and internal auditors are expected to be independent of top management when reporting to the board or the board's audit committee.

As one of the ways to ensure internal auditors' effectiveness, the Financial Institutions (Corporate Governance) Regulations, 2005, require internal auditors to abide by their codes of ethics. According to the code of ethics of internal auditing, one of the expectations of internal auditors is to discuss risks, such as fraud. However, Bananuka *et al*. (2017) reveal that some internal auditors in Ugandan institutions lack the motivation to perform their duties. Bananuka *et al*. (2017) further reveal that several auditees in Uganda are hostile to internal auditors because auditees view internal auditors as fault finders (Bananuka *et al*., 2017). This raises questions about when internal auditors' moral courage can achieve the intended objectives. Furthermore, internal auditors must have the moral courage to speak up because of the personal risks that the internal auditors face. Therefore, it is important to understand the factors that motivate internal auditors to express their ethical concerns. The Financial Institutions (Corporate Governance) Regulations, 2005, attempt to motivate internal auditors to speak up by enhancing the internal auditors' independence. The 2005 Financial Institutions (Corporate Governance) Regulations attempt to ensure the independence of internal auditors in two ways. First, the Financial Institutions (Corporate Governance) Regulations, 2005, require that the board or board's audit committee, rather than management, appoint internal auditors. Second, the Financial Institutions (Corporate Governance) Regulations, 2005, require that top management and the board ensure internal auditors' independence through internal auditors' direct access to and reporting to the board or the board's audit committee. An empirical study by Khelil *et al*. (2016) in Tunisian companies supports the positive role of internal auditors' private access to the audit committee by revealing that internal auditors' moral courage is positively influenced by the availability of confidential access to the board or the board's audit committee. Other research on the drivers of internal auditors' moral courage has revealed that a supportive board or board's audit committee positively impacts internal auditors' moral courage; therefore, all available research on the drivers of internal auditors' moral courage has examined the role of the board or board's audit committee. Less attention is paid to the role of chief executive officers and the fact that internal auditors serve two masters: the board or board's audit committee and top management. Researching the effect of top management would thus add to "serving the two masters' research.

The reality of internal auditors' "serving two masters" and the need to acknowledge the influence of CEO behaviour in addition to the board or board's audit committee in the same model are not adequately addressed by the 2005 regulations of Financial Institutions (Corporate Governance). The Financial Institutions (Corporate Governance) Regulations, 2005, try to ensure that internal auditors are independent of management by reporting directly to the board or the board's audit committee. Contrary to expectations that internal auditors are independent of management when reporting directly to the board or the board's audit committee, senior management influences internal audits at several financial institutions in Uganda. For instance, internal auditors reported a lack of independence from chief executive officers in a study on internal audit challenges in Ugandan institutions by Bananuka *et al*. (2017), as revealed in this quotation by Bananuka *et al*. (2017): "We do not have independence. My CEO personally has the last say regarding my stay". Thus, the findings suggest that contrary to the expectations of the Financial Institutions (Corporate Governance) Regulations, 2005, that some internal auditors are independent of top management, in some financial institutions in Uganda, there is no internal auditor independence in reality. Moreover, some financial institution managers are so powerful and unethical that these managers even usurp the authority of the board (Bank of Uganda Annual Supervision Report, 2020). Because of the lack of independence from top management, internal audits are potentially affected by managers' behaviours, and it is important to ascertain which managerial behaviours impact internal audit effectiveness. Managers' lack of appreciation for the work of internal auditors is a managerial behaviour that has been cited as a problem in internal audits in Uganda (Bananuka *et al*., 2017). The idea of a leader being open to recommendations is part of the concept of leader openness (Detert *et al*., 2007). Since prior studies (Lenz & Hahn, 2015) call for research on the influence of leaders' behaviours on internal audit effectiveness, this study explores the effect of CEO openness on internal audit effectiveness directly and through the mediation mechanism of internal auditors' moral courage in Ugandan financial institutions.

Furthermore, reports show that several internal audit suggestions in Ugandan institutions are often not implemented promptly (Bananuka *et al*., 2017; Bank of Uganda Annual Supervision Report, 2020). Therefore, encouraging internal auditors to speak up on risks is insufficient if internal audit recommendations are not implemented. Therefore, it is important to understand managerial and board or board audit committee behaviours that can positively influence internal auditors' moral courage to speak up about ethical issues and internal audit effectiveness. For this reason, this study draws on the power-dependence theory of responses to whistleblowing to contend that perceived board audit committee support and CEO openness both positively affect internal audit effectiveness through a mediation mechanism of the internal auditor's moral courage. The study also hypothesizes that CEO openness moderates the link between perceived board audit committee support and internal audit effectiveness.

1.2 Statement of the Problem

Internal auditors' effectiveness, which is the contribution by internal auditors to the strength of business processes, managerial decision-making, internal controls, and governance, is ideal as it can mitigate fraud and waste. However, the ineffectiveness of internal auditors is a concern. For instance, reports of fraud in financial institutions in Uganda (Irbad HM & MG, 2018; Kabuye et al., 2017) raise a red flag regarding the internal auditors' contribution to the strength of internal controls. Internal auditors who are supposed to act as watchdogs often remain silent, or even when they speak up, their recommendations are often not implemented (Bananuka et al., 2017). Internal auditors' value addition to business processes and internal controls necessitate that internal auditors speak up and their ideas be implemented. Thus, understanding the drivers of internal auditors' effectiveness is of both theoretical and practical significance.

Despite calls for empirical studies on the factors influencing internal auditors' effectiveness, empirical evidence remains scarce, especially in developing countries (Vadasi et al., 2019). Some studies examining the factors that impact the effectiveness of internal auditors have largely ignored the integration of agency theory with other theories (Kotb et al., 2020).

The available empirical evidence reveals a positive relationship between audit committee support and internal auditors' effectiveness (Abdulaziz & Nedal, 2015). However, there are inconsistencies in the relationship between supervisors' support and their outcomes, necessitating an exploration of how other main, mediating, and moderating variables interact with audit committee support to influence internal auditors' effectiveness.

We propose CEO openness as another independent variable that interacts with audit committee support to explain internal auditors' effectiveness. CEO openness is a behaviour of a top executive, and Lenz and Hahn (2015) proposed studies on the effects of executive behaviours on internal auditors' effectiveness. However, although CEO openness is a challenge for internal auditors (Bananuka et al., 2017), its effect on internal auditors' effectiveness is yet to be examined.

Furthermore, we propose internal auditors' moral courage to speak about ethical issues as a mediating variable in the relationship between audit committee support and internal auditors' effectiveness, and between CEO openness and internal auditors' effectiveness. Empirical evidence on the effectiveness of internal auditors' soft skills, such as speaking up about ethical issues, is scarce (Lenz & Hahn, 2015; Türetken et al., 2020).

Lastly, this study proposes CEO openness as a moderating variable in the audit committee support-internal auditors' effectiveness relationship. This is motivated by Lenz and Hahn's call for studies on how the interaction between the two masters of internal auditors, namely, the audit committee of the board and the CEO, affects the effectiveness of internal auditors.

In sum, this study tests the effects of both audit committee support and CEO openness on internal auditors' effectiveness directly and indirectly through the mediating effect of internal auditors' moral courage and the moderating effect of CEO openness on the relationship between audit committee support and internal auditors' effectiveness, proposing CEO openness as both a main and moderating variable.

1.3 Objectives of the Study

1.3.1 General objective of the study

The general objective of this study is to investigate the effects of audit committee support and CEO openness on internal auditors' effectiveness, directly and indirectly, through internal auditors' moral courage, as well as the moderating effects of CEO openness on the relationship between audit committee support and internal auditors' effectiveness. CEO openness is anticipated to have both the main and moderating effects.

1.3.2 Specific Objectives of the Study

The following objectives guide the study:

1. To examine the effect of board audit committee support on internal auditors' effectiveness.
2. To examine the effect of CEO openness on internal auditors' effectiveness
3. To examine the effect of board audit committee support on the internal auditors' moral courage.
4. To examine the effect of internal auditors' moral courage on internal auditors' effectiveness.

5. To examine the mediating effect of internal auditors' moral courage on the relationship between perceived board audit committee support and internal auditors' effectiveness.
6. To examine the effect of CEO openness on internal auditors' moral courage
7. To examine the mediating effect of internal auditors' moral courage on the relationship between CEO openness and internal auditors' effectiveness.
8. To examine the moderating effect of CEO openness on the relationship between perceived board audit committee support and internal auditors' effectiveness.

1.4 Research Hypotheses

The following null hypotheses guided the study:

H_{01}: Board audit committee support has no significant effect on internal auditors' effectiveness.

H_{02}: CEO openness does not affect internal auditors' effectiveness

H_{03}: Board audit committee support has no significant effect on internal auditors' moral courage.

H_{04}: Internal auditors' moral courage does not significantly affect internal auditors' effectiveness.

H_{05}: Internal auditors' moral courage does not mediate the relationship between perceived board audit committee support and internal auditors' effectiveness.

H_{06}: CEO openness does not affect internal auditors' moral courage.

H_{07}: Internal auditors' moral courage does not mediate the relationship between CEO openness and internal auditors' effectiveness.

H_{08}: CEO openness does not moderate the relationship between board audit committee support and internal auditors' effectiveness.

1.5 Significance of the Study

Several parties are likely to benefit from this study in different ways

First, scholars in the field of internal auditing can benefit from a comprehensive understanding of the impact of internal auditors' moral courage on their effectiveness. By examining moral courage as a mediating variable, this study addresses the gap in the existing knowledge about the mechanisms through which audit committee support and CEO openness affect internal auditors' effectiveness.

Furthermore, this study responds to calls in the literature to investigate how internal auditors' dual reporting structure, to both the audit committee and the CEO, affects their effectiveness. By incorporating audit committee support and CEO openness into the same framework, scholars interested in the dynamics of this dual reporting structure can gain valuable insight into the challenges and implications of this scenario.

Additionally, the hypothesized moderating role of CEO openness adds complexity to the relationship between audit committee support and internal auditors' effectiveness. This provides a novel perspective on how CEO behavior influences the effectiveness of internal auditors, filling a gap in the literature.

This study offers a holistic framework by integrating audit committee support, internal auditors' moral courage, and CEO openness into a single model. Scholars can benefit from a more nuanced understanding of how these factors interact and collectively contribute to internal auditors' effectiveness.

Second, the board or its audit committee is likely to use the findings to design appropriate interventions to enhance internal auditors' psychological resources, such as moral courage, to enhance internal auditors' effectiveness. Additionally, the study enlightens the board or the board's audit committee on executive behaviours that affect the effectiveness of internal auditors. The board or the board's audit committee can, therefore, include behaviours such as CEO openness and moral courage on a behavioral-performance appraisal checklist.

Third, policymakers can use these findings to design appropriate policies regarding human resource planning to have CEOs and internal auditors with behavioural qualities that matter for internal auditors' effectiveness.

Fourth, chief executive officers can appreciate the importance of CEO openness and respond appropriately to internal audit recommendations.

Fifth, regulators can use these findings to update corporate governance guidelines by including recommendations for behaviors that matter for internal auditors' effectiveness.

1.6 Scope of the Study

In terms of content, the study examined the effects of chief executive officers' openness, board audit committee support, and internal auditors' moral courage on internal auditors' effectiveness.

In terms of disciplines from which variables were picked, the study was conceptualized in two disciplines, namely: corporate governance, organisational behaviour, and strategic management. Internal audit effectiveness is currently a topic in internal auditing, and internal auditors are the pillars of a wider area of corporate governance. Because of recommendations from existing internal auditing studies to study behaviour that matters for internal auditors' effectiveness, this study examines board audit committee support, CEO openness, and internal auditors' moral courage in organisational behaviour.

In terms of geographical scope, this study was limited to formal financial institutions in Uganda. Uganda was chosen because there are calls for more internal auditing studies in a developing country context, and Uganda is a developing country. Financial institutions in this study include commercial banks, microfinance deposit-taking institutions (MDIs), insurance companies, development banks, pension funds, and capital market brokers and agencies. Financial institutions in Uganda were selected as testing grounds because they contribute significantly to national income but continue to face internal audit challenges, such as internal auditor silence and unimplemented internal auditors' recommendations. The selected formal financial institutions are limited to those that have internal auditors, audit committees or boards, and CEOs, which are of interest to the researcher. Foreign exchange bureaus were not selected because of the general lack of internal auditors in foreign exchange bureaus, as internal auditing is the focus of this study.

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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a critical review of the literature on the major concepts, theories underpinning the study, empirical literature, and hypothesized conceptual framework.

2.1 The Concept of Internal Auditors' Effectiveness

The definition of internal auditors' effectiveness is derived from the definition of effectiveness. Effectiveness is the ability to produce results that are consistent with objectives (Arena & Azzone, 2009a). Arena and Azzone's definition is consistent with the goal model of organisational effectiveness. According to Cameron (1986), the goal model of organisational effectiveness contends that organisations attain effectiveness if a goal is attained. Consistent with the goal model of effectiveness, internal audit effectiveness is defined as the ability of an internal auditors to attain internal auditing objectives. The general objectives of contemporary internal auditing are the "three E's": effectiveness, efficiency, and economy (Lenz *et al*., 2018; Ridley, 2008). Effectiveness is doing the correct thing, whereas efficiency means doing things well, and economy means doing things cheaply (Lenz *et al*., 2018; Chambers, 1992). Lenz *et al*. (2018) and Bednarik (2018) argue that effectiveness is the most important of the "three Es." Lenz *et al*. (2017) argued that if an internal audit is ineffective, it does not matter how efficiently or economically the service is rendered.

Because of the importance of internal audit effectiveness, existing internal auditing studies have paid attention to the meaning of internal audit effectiveness and the variables that influence internal audit effectiveness. The Institute of Internal Auditors (IIA) published a widely accepted definition of internal auditing (Turetken *et al*., 2020). Internal auditing is "an independent, objective assurance and consulting activity designed to add value and improve an organisation's operations." It helps an organisation accomplish its objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, control, and governance processes (Institute of Internal Auditors (IIA), 2000; IIA, 2017). To assess effectiveness, the objective should be stated clearly, and the means for achieving the objective should be identified (Badara & Saidin, 2013; Dittenhofer, 2001). Therefore, the definition of internal auditing highlights internal control, risk management, and corporate governance as areas in which internal auditing should help improve.

The concept of internal auditors’ effectiveness evolved with the evolution of internal auditing. Since June 1999, when the Institute of Internal Auditors (IIA) adopted the current definition of internal auditing, internal auditors' responsibilities have expanded from performing the traditional role of assurance to adding value to the organisation through consulting (Brody & Lowe, 2000; Selim *et al*., 2009; Abuazza *et al*., 2015). Internal audit effectiveness has been the subject of numerous studies since the expansion of internal auditors' responsibilities in 1999 (Dittenhofer, 2001; Al-Twaijry *et al*., 2003; Mihret & Yismaw, 2007; Mizrahi and Ness-Weisman, 2007; Rupsys & Boguslauskas, 2007; Ahmad *et al*., 2009; Arena & Azzone, 2009; Bota-Avram & Stefanescu,2009; Bota-Avram *et al* ., 2010; Cohen & Sayag, 2010; Mihret *et al* .,2010; Shu *et al* .,2010; Al Matarneh, 2011; Karagiorgos *et al* .,2011; Soh & Martinov-Bennie,2011; Badara & Saidin, 2013; Endaya & Hanefah,2013; Alzeban & Gwilliam,2014; Badara & Saidin,2014; Alzeban,2015;D'Onza *et al* .,2015;enz & Hahn.,2015; Dejnaronk *et al*.,2016; Barisic & Tusek, 2016; Dellai *et al* .,2016; Ndukwe, 2016; Tackie, *et al*., 2016; Alshbiel, 2017; Baheri *et al* .,201 The existing internal audit effectiveness studies following the redefinition of internal auditing in 1999 continue to focus mainly on three themes: how to operationalize internal audit effectiveness, the appropriate respondent to evaluate internal audit effectiveness, and the variables that impact internal audit effectiveness.

Regarding the operationalization of internal auditors’ effectiveness, existing research has not yet agreed on a common set of internal audit effectiveness indicators. Nevertheless, extant studies (Arena & Azzone, 2009; Lenz *et al*., 2014; Türetken *et al*., 2020) operationalize internal audit effectiveness as an input, process, output, or outcome variable, depending on the research objective.

Internal auditors’ effectiveness, as an input variable, is the capacity to obtain appropriate resources for the internal auditors. The dimensions of internal auditors’ effectiveness as an input variable include components such as appropriate personnel with suitable skills and personal attributes (Lenz *et al*., 2014). Lenz and Hahn (2015) refer to internal auditors' behaviours and other personal attributes as soft factors of internal audit effectiveness". Lenz and Hahn (2015) contend that the soft attributes of internal audit effectiveness should receive more scholarly attention. Accordingly, internal auditors’ moral courage is a "soft attribute "of internal audit effectiveness, which is hypothesised as a mediating variable to explain internal audit outputs in this study. Internal audit effectiveness in terms of inputs is in line with the system-resource-model view of organisational effectiveness (Cameron, 1986), which views organisational effectiveness as the ability to acquire the required resources. Cameron (1986) further noted that conceptualising effectiveness in terms of the ability to acquire resources is appropriate if there is a clear relationship between outputs and inputs. This study tests the link between input in the form of internal auditors’ moral courage and internal audit effectiveness as an output.

Internal audit effectiveness as a process variable refers to the extent to which the internal audit objective of complying with the recommended procedures is achieved, such as internal audit standards in the Professional Practice Framework (PPF) for the Institute of Internal Auditors (Fadzil *et al*., 2005), the audit plan, the budget, techniques, and technology (Lenz *et al*., 2014). Studies of internal audit effectiveness in terms of complying with the requirements of the internal auditing process have examined objective measures, such as the extent to which the internal audit plan has been implemented (Bota-Avram & Stefanescu, 2009; Bota-Avram *et al*., 2010; Soh & Martinov-Bennie, 2011) and the time needed to execute the audit plan (Bota-Avram *et al*., 2010; Soh & Martinov-Bennie, 2011). The proportion of internal audit activities carried out per internal audit plan over a specified period to those that are scheduled is the fulfilment degree of the internal audit plan (Bednarek, 2018; Türetken *et al*., 2020). Internal audit effectiveness as an extent of compliance with the process is not an appropriate measure in the present study because the focus is on internal audit effectiveness in terms of value added by internal auditors following the internal auditors' moral courage in speaking up about ethical issues.

Internal auditors' effectiveness as an output is a deliverable from the internal auditors such as an internal audit report (Lenz *et al*., 2017). However, focusing on reports without focusing on the implemented recommendations is inadequate because the recommendations in the internal audit report add value after being implemented. Therefore, internal auditors' effectiveness in terms of outputs is often evaluated in terms of the usefulness of these deliverables, measured by, for example, by the percentage of recommendations implemented (Lenz *et al*., 2014). This percentage reflects the extent of the perceived quality that auditees perceive in the recommendations. Although internal auditors have only partial control over the internal audit recommendation implementation rate, the measure shows the extent to which auditees are satisfied with the quality of internal audit recommendations. This is because the more satisfied the auditees are with the recommendations, the more likely they are to implement them. Studies on internal audit effectiveness in terms of output have focused on objective or perceived measures (Türetken *et al*., 2020).

Internal auditors' effectiveness, in terms of objectively measured outputs in previous studies, includes the rate of implementation of internal audit recommendations (Mizrahi and Ness-Weisman, 2007; Arena & Azzone, 2009; Bota-Avram *et al*., 2010; Soh & Martinov-Bennie, 2011; Barisic & Tusek, 2016; Bednarek,2018; Erasmus & Coetzee, 2018), time to issue a report on an internal audit (Bota-Avram & Stefanescu, 2009; Bota-Avram *et al*., 2010), and time to address internal audit findings(Bota-Avram & Stefanescu, 2009; Bota-Avram *et al*., 2010; Shu *et al*., 2010), time management (Bota-Avram & Stefanescu, 2009) and several findings(Dittenhofer, 2001; Bota-Avram *et al*., 2010; Shu *et al* ., 2010; D'Onza *et al*., 2015; Nurdiono & Gamayuni, 2018; Oussii & Taktak, 2018; Chang *et al*., 2019). According to the rate of implementation of the internal audit recommendation indicator, the number of audit recommendations implemented after receiving approval or agreement from auditees or management is divided by the total number of recommendations made by the internal auditor (Bednarek, 2018; Türetken *et al*., 2020). Studies of internal audit effectiveness in terms of time to issue an internal audit report focus on the time lag between the day fieldwork is completed and the day the internal audit report is issued (Türetken *et al*., 2020). It is argued that the issuance of an audit report must occur within ten days of the final day of fieldwork for an effective internal audit (Bota-Avram *et al*., 2010; Türetken *et al*., 2020). Studies on internal audit effectiveness in terms of time to address internal audit findings focus on the number of findings that were resolved in a specific amount of time, the number of findings that were resolved late, and the number of findings that were left unresolved. Similarly, studies (Shu *et al*., 2010; Türetken *et al*., 2020) divide the time required to solve internal audit **discoveries into** two categories: analysing and validating the findings until they become a real problem, and solving the real problem.

Objective measures of internal audit effectiveness

Internal auditors' effectiveness is the extent to which internal auditors achieve the set objectives (Tackie *et al*., 2016). Studies of internal audit effectiveness in terms of outputs have previously focused on audit stakeholders' perceptions of the extent to which internal auditors contribute to the assessment and enhancement of the governance process (Barisic & Tusek, 2016; Dellai *et al*., 2016); assessment and enhancement of the performance of risk management (Alzeban and Gwilliam, 2014; Barisic & Tusek, 2016); enhancement of internal control; internal audit recommendation implementation rate; contribution to managerial decision-making; and business process improvement (Barisic & Tusek, 2016). Studies argue that, whereas an internal audit report is an output of an internal audit, the report adds value if internal audit recommendations are implemented (Barisic & Tusek, 2016).

The outcome measures represent the impact of internal audit deliverables. Examples of outcome measures include improvements in the share price and profit due to implemented internal audit recommendations (Arena & Azzone, 2009) and cost savings brought about by the adoption of internal auditors' suggestions (Cashell & Aldhizer III, 2002; Arena & Azzone, 2009). The challenge of using outcome measures is the difficulty of assessing the actual impact of each internal audit deliverable, such as the percentage of audit recommendations implemented on an outcome. One reason is that it may be difficult to isolate the impact of internal audit deliverables from that of other organisational variables on outcomes. The other challenge is the long time lag between producing internal audit deliverables, such as recommendations in an internal audit report, and the occurrence of an outcome.

Since the extent to which internal audit recommendations are implemented is considered an indicator of the usefulness of the internal audit report (Barisic & Tusek, 2016), the current study operationalizes internal audit effectiveness as an output variable. Additionally, this study operationalizes internal audit output in terms of the perceived contribution of internal audit recommendations to the improvement of corporate governance, internal control, managerial decision-making, and business process improvement, similar to Barisic and Tusek (2016). The literature reveals that internal audit effectiveness is a multidimensional construct consisting of input, process, output, and outcome dimensions; however, studies have often measured the internal audit effectiveness construct using partial measures (Arena & Azzone, 2009; Barisic & Tusek, 2016). The choice of operationalization of internal audit effectiveness depends on the independent variables of the study and the research question (Barisic & Tusek, 2016). This study examines the impact of CEO openness and board audit committee support on internal auditors' moral courage and, ultimately, internal auditors' value addition. Therefore, this study operationalizes internal audit effectiveness as an output measure. Since the internal audit report is an output that adds value when recommendations are implemented, the present study operationalizes the internal audit output in terms of perceptions of the extent to which internal auditors' recommendations are implemented. Additionally, this study operationalizes internal audit effectiveness as the perceived contribution of internal auditors' recommendations to managerial decision-making, internal control, and corporate governance, similar to Barisic and Tusek (2016).

For this study, the implicit operational definition of internal audit effectiveness is the perceived value addition of internal auditors to internal control, governance, and managerial decision-making.

Finally, the gaps in the literature on variables that influence internal audit effectiveness warrant an examination of the effects of CEO openness, board audit committee support, and internal auditors' moral courage on internal audit effectiveness. There is inadequate evidence on the influence of CEO behaviours such as CEO openness, internal auditors' ethical behaviours such as the moral courage to speak up, and the interactions among the board audit committee, CEO, and internal auditors on internal audit effectiveness. A review of the literature on the concepts of CEO openness, board audit committee support, internal auditors' moral courage, and the hypothesised relationships follows.

2.2 The Concept of Board Audit Committee Support

The term "board audit committee support" refers to the degree to which internal auditors believe the board audit committee values internal auditors' efforts and is concerned about internal auditors' well-being (Khelil *et al*., 2018).

Previous research, such as Khelil *et al*. (2018), deduced the definition of board audit committee support from the definition of perceived supervisor support, and the definition of perceived supervisor support was also deduced from the definition of perceived organisational support.

Perceived organisational support (POS) refers to the employees' perception of "the extent to which the organisation values their contributions and cares about their well-being" (Eisenberger *et al*., 1986, p. 1).

Perceived supervisor support is employees' perception of "the degree to which the supervisor values employees' contributions and cares about employees' well-being"

(Deconinck, 2010; Rhoades & Eisenberger, 2002). By substituting "supervisor" for "organisational" in the definition of perceived organisational support (POS) in studies such as Deconinck (2010) and Rhoades and Eisenberger (2002), the definition of perceived supervisor support was derived. Perceived supervisor support is in the form of benefits and social rewards that employees receive from supervisors in the form of gratitude, concern for employees' welfare, assistance to employees when needed, availability of supervisors when needed by employees, a strong commitment to employees' values, forgiving employees honest mistakes, and considering employees' opinions (Rhoades & Eisenberger, 2002). The assumption underlying the derivation of the perceived supervisor support definition from the perceived organisational support definition was that followers would interpret supervisors' activities as organisational acts. The assumption that the actions of supervisors are treated as actions of the organisation in Rhoades and Eisenberger's (2002) study was based on the work of Levinson (1965), who observed that the behaviours of an organisation's agents are frequently interpreted as evidence of the organisation's intent as opposed to being attributed simply to the agents' motivations. As such, this study treats the actions of the board or board audit committee as actions of the organisation.

Internal auditing research such as Khelil *et al*. (2018) defined perceived board audit committee support by replacing "supervisor" in the definition of perceived supervisor support with "board audit committee." According to Khelil *et al*. (2018), a board or board audit committee is a supervisor of internal auditors; therefore, the operationalization of perceived board audit committee support is the operationalization of perceived supervisor support.

Previous studies have revealed that perceived supervisor support is positively related to employees' ethical behaviour (Sguera *et al*., 2018). In agreement with Sguera *et al*.

(2018), internal auditing research revealed that perceived board audit committee support positively influences internal auditors' moral courage and employees' behaviours (Khelil *et al*., 2018). The effect of perceived supervisor support on employee outcomes is explained using the Social Exchange Theory (Blau, 1964; Cheung, 2013). Social exchange theory posits that in a social setting, meaningful relationships arise from social exchange. People engage in reciprocal behaviour in exchange for rewards (Blau 1964). In an organisational setting, employees trade reciprocal behaviour for support from the organisation in the form of benefits and social rewards, such as appreciation, caring for their well-being, giving aid when needed, being available when needed, strongly caring about their values, being forgiven for honest mistakes, and caring about their opinions.

2.3 The Concept of Internal Auditors' Moral Courage

Moral courage refers to the expression of personal beliefs and values in the face of dissent and rejection, as well as instances in which a person stands up to a superior for the common good (Lopez *et al*., 2003). The extant literature argues that courage is one of the soft skills required for successful internal auditing departments (Adamec *et al*., 2009).

Research on internal auditors' moral courage, such as Khelil *et al*. (2018), adopts the definition of moral courage from Lopez *et al*. (2003). Existing internal auditing research has examined internal auditors' moral courage, which is expressed in terms of the ability to speak up about peers' engagement in unethical behaviour, managers' engagement in ethical behaviour, and group decisions that contradict ethical standards and always express ethical concerns to supervisors. This study focuses on the moral courage of internal auditors and, as such, utilises the definition of moral courage from Khelil *et al*. (2018).

Over the years, scholars have debated the numerous interpretations of "courage." Murray (2010) noted how ancient Greek philosophers, like Aristotle and Plato, frequently used the concept of courage regarding military conduct. Plato and Aristotle considered courage to be an attribute reserved for people who feared death. Aristotle defined courage as the capacity to conduct war while cognizant of the risk of harm or death. According to Aristotle, bravery enabled Greek soldiers to respond appropriately to the fear of battle. While ancient Greek philosophers defined courage as the desired response to physical risk, contemporary researchers have defined courage as the determination to stand up for or act on one's ethical values (Clancy, 2003; Day, 2007; Kidder, 2005; Lachman, 2009; 2007a; Purtilo, 2000; Murray, 2010; Khelil *et al*., 2018). The determination to stand for or act on one’s ethical values is necessary for internal auditors to voice their ethical concerns and eliminate wrongdoing.

Moral courage is a dimension of courage. Studies view moral, physical, and social courage as key dimensions of courage (Hannah *et al*., 2011; Howard *et al*., 2017; Howard, 2018). Research has distinguished the dimensions of courage based on the risks associated with a behaviour. Thus, social courage refers to behaviour that risks destroying social relationships, whereas physical courage refers to behaviour that may result in bodily harm (Howard, 2018). Moral courage is a courageous act that has all the risks, but the act is moral. This study focuses on professional moral courage, which is a psychological strength that enables an actor to do the right thing in conformity with the expectations of professional ethics, despite consequential risks on the part of the actor (Sekerka *et al*., 2009).

Although there are several forms of courage, research has revealed that the dimensions of courage have similarities. According to Rate *et al*. (2007), people’s definitions of courage share four keywords. Rate *et al*. (2007) used four keywords to derive a definition of a courageous act: (a) willful, intentional act; (b) executed after mindful deliberation; (c) involving a substantial risk to the actor; and (d) primarily motivated to bring about a noble good or worthy end" (Howard, 2018). Subsequent research supports this definition (Sekerka & Bagozzi, 2009; Howard & Alipour, 2014; Koerner, 2014; Schilpzand *et al*., 2015; Howard, 2018).

Internal auditing studies have described internal audit executives' behaviour in speaking out about ethical issues as courageous (Everett & Tremblay, 2014). Everett and Tremblay (2014) conclude that internal auditors' behaviours are courageous when documenting the behaviour of Cynthia Cooper, WorldCom's former Vice President of Internal Audit. According to Tremblay (2014), Cynthia Cooper led the corporate group to investigate and discover the WorldCom scam in 2002 and decided to come out as a corporate whistleblower. However, the internal auditor's whistleblowing behaviour was risky because it resulted in severe damage to the internal auditor due to the auditee's retaliation. Nevertheless, Cynthia's behaviour was described as courageous and admirable. The determination displayed by internal auditors in speaking up about risks despite likely repercussions is a display of courageous behaviour. Internal auditors' speaking-out behaviour is risky due to the possibility of auditee reprisal, yet the behaviour is noble because it is intended to reduce risks such as fraud.

The nature of courage—whether it is a state or a personality trait—is a topic of debate in courage studies (Howard, 2018). Personality traits are consistent patterns of behaviour, thought, and emotion (McCrae & Costa, 2003; Parks-Leduc *et al*., 2015). On the other hand, behaviours, thoughts, and emotions can be state-like (Howard, 2018). States are continuously manifested in response to situations (Fridhandler, 1986), unlike traits that remain relatively stable. It is important to differentiate between traits and states because states can be influenced by contextual variables, whereas traits tend to be more stable. There is an emerging consensus in internal auditing research that internal audit executives' moral courage is a state and can, therefore, be influenced by variables in the immediate environment. For instance, Khelil *et al*. (2016) and Khelil *et al*. (2018) treated internal auditors' moral courage as a dependent variable that can be motivated by contextual variables such as a supportive board or the board's audit committee. Therefore, this study also treats internal auditors' moral courage as a state that can be influenced by organisational variables.

Two factors drive the investigation of the mediating effect of internal auditors' moral courage on the perceived board audit committee support for internal audit effectiveness and CEO openness-internal audit effectiveness relationships. First, prior studies on the factors influencing internal auditors' moral courage behaviour have examined only the effect of the board or the board's audit committee (Khelil *et al*., 2018; Khelil *et al*., 2016). To the researcher's knowledge, the effects of CEO behaviours, such as CEO openness, on the moral courage of internal auditors have yet to be studied. Bananuka *et al*. (2017) reveal that top management's openness to internal auditors' ideas is viewed as a challenge to internal audits. Nonetheless, studies call for more research on how serving two masters, the board and top management, and the behaviours of executives affect internal audits (Lenz & Hahn, 2015). Second, to the researcher's knowledge, the research on the effect of internal auditors' moral courage on internal audit effectiveness and when moral courage influences internal audit effectiveness is scant. The examination of the mediating effects helps explain situations in which moral courage behaviours are effective in positively contributing to internal audit effectiveness.

2.4 The Concept of CEO Openness

Existing internal audit studies advocate examining the effects of leaders’ behaviours and CEO attributes on internal audits (Lenz & Hahn, 2015; Lin *et al*., 2014). Therefore, the study of the effect of CEO openness on internal auditors’ moral courage behaviour and, ultimately, internal audit effectiveness is consistent with recommendations for additional research on the effects of leaders' behaviours on internal audit effectiveness.

The definition of CEO openness is deduced from the definition of managerial openness by replacing the word "managerial" with "CEO." Managerial openness is defined as "subordinates’ perception that their boss listens to them, is interested in their ideas, gives fair consideration to ideas presented, and at least sometimes takes action to address the matter raised" (Detert *et al*., 2007, p. 3). Therefore, CEO openness is defined as the perception of subordinates that the supervisor listens to subordinates, is interested in subordinates’ views, gives subordinates’ ideas fair consideration, and at least occasionally takes action to address the issues raised.

This study hypothesises that CEO openness is an antecedent to internal auditors' moral courage to speak out about ethical issues and, ultimately, internal audit effectiveness. Research like that of Lenz and Hahn (2015), which calls for more studies on the effects of leaders' behaviours and the effect of "serving two masters" on internal audit effectiveness, is what inspired the study of the effect of CEO openness. Internal auditors have two masters: the board and top management (Abbot *et al*., 2010). Existing research on the antecedents of internal auditors’ moral courage examined the effect of only one master, the board, on internal auditors’ moral courage, revealing a positive relationship between perceived board or board audit committee support and internal auditors’ moral courage (Khelil *et al*., 2018). Company scandals highlight the necessity of understanding how CEO behaviour influences workplace ethical behaviour (Matzek, 2002; Schmitt, 2002; Tolson, 2002; Hood, 2003). However, present researchers are unaware of empirical studies of CEO behaviours that impact internal auditors' moral courage. Therefore, a study of the effects of CEOs' behaviours on internal auditors' moral courage and ultimately internal audit effectiveness contributes to the understanding of how dual masters, such as the board and top management, impact internal audit effectiveness.

One of the difficulties faced by internal auditors is getting top executives to listen to their suggestions (Bananuka *et al.*, 2017). Some top executives often do not implement internal auditors' recommendations. The theoretical literature on the effect of leaders' openness on employees' suggestions suggests that leaders' openness positively impacts employees' speaking-up behaviour (Yin *et al.*, 2021). The theoretical explanation for the positive relationship between leader openness and employees' speaking-up behaviour is that leaders' openness to employees' suggestions signals to employees that speaking up is acceptable, and employees' perceived costs of speaking up, such as retaliation, are reduced (Detert *et al.*, 2007). Based on the theoretical explanation of the effect of leader openness, it is arguable that CEO openness positively affects internal auditors' moral courage to speak up. On the other hand, the literature that draws on agency theory to explain internal auditing such as Adams (1994), assumes that internal auditors are independent of top management and as such, CEO openness should not significantly impact internal auditors' moral courage to speak up. Drawing on the view that the CEO is principally responsible for establishing the organisation's ethical orientation (Hanson and Valasquez, 1988; Hood, 2003) and that CEO behaviours impact workplace ethical behaviours (Hood, 2003), the present study hypothesises that CEO openness positively impacts internal auditors' moral courage behaviour and ultimately internal audit effectiveness.

Thus, since existing research on the antecedents of internal auditors' moral courage has thus far demonstrated only the effect of a board or board’s audit committee on internal auditors’ moral courage (Khelil *et al*., 2018) and has not yet paid adequate attention to the effects of CEO behaviours on internal auditors’ moral courage and, ultimately, internal audit effectiveness, the present study focuses on the influence of CEO openness on internal auditors' moral courage and, ultimately, internal audit effectiveness, contributing to calls for research on the consequences of executives’ behaviours and internal auditors serving dual masters on internal audit effectiveness. Additionally, the study demonstrates a mechanism through which CEOs impact internal audit effectiveness.

2.5 The Theoretical Framework

The main theory that underpins this study is the agency theory (Jensen & Meckling, 1976). This is because the theory explains the rationale for having internal auditors in an entity where ownership and management differ. However, because of the inadequacies of solely relying on agency theory in internal auditing studies, the present study draws on theories from other disciplines to explain how and why the study variables are hypothesised to relate, including social power theory (French & Raven, 1959; Friedkin, 1986), social cognitive theory (Bandura, 1991), upper echelons theory (Hambrick & Mason, 1984), and the power-dependence theory of responses to whistleblowing (Casal & Zalkind, 1995; Near & Miceli, 1985; Near & Miceli, 1987; Miceli & Near, 1992; Miceli & Near, 1994). Agency Theory (Jensen & Meckling, 1976) is the primary theory because it explains the existence of internal auditing.

2.5.1 Agency Theory

According to agency theory, a firm can be reduced to two contracting parties: a principal who owns the resources and an agent who manages the resources on the principal's behalf (Jensen & Meckling, 1976). The agent has more information about the firm than the principal does, a challenge called information asymmetry. Since an agent is considered a rational, self-seeking party, the agent may use the information asymmetry advantage to maximise personal gains at the expense of the principal. An agent's self-seeking behaviour is why the principal implements governance mechanisms to monitor the agent's behaviour (Jensen & Meckling, 1976). Therefore, an internal audit is a cost-effective monitoring and governance mechanism that assists principals in monitoring and overcoming the information asymmetry problem (Adams, 1994; Sarens and Abdolmohammadi, 2011). In financial institutions, the board or board’s audit committee represents the owners of the firm, and the owners of the firm are the principals, whereas the management is viewed as the agent. Therefore, internal auditors are expected to report agent behaviour to principals via an audit committee. Objective reporting by internal auditors to an audit committee is achievable if the internal auditors are independent of management.

The classical agency theory, as proposed by Jensen and Meckling (1976), contends that principals resort to monitoring, bonding, and financial incentives to ensure that agents act in their best interests. Audit committees play a crucial role in overseeing internal auditors, ensuring that their performance aligns with the board's and shareholders' interests. Audit committee expenses are often considered bonding costs, as per Adams (1994). On the other hand, behavioural agency theory, which is rooted in behavioural economics and psychology, recognizes that monitoring, bonding, and financial incentives are insufficient to motivate agents to act in the principals' interests. This theory posits that agents might not always act rationally and that cognitive biases, emotions, and social norms can result in actions that are detrimental to either the agents or the principals. Consequently, this theory argues that principals must take into account the psychological and behavioral aspects while designing mechanisms to align agents' outputs with their interests (Wiseman & Gomez-Mejia, 1998). This study explores supervisor support, such as audit committee support for internal auditors, as a potential psychological mechanism for enhancing internal auditor effectiveness. Employees tend to reciprocate supervisor support by improving effectiveness (Ebrahimi *et al.,* 2022). Therefore, it is plausible that audit committee support may have a positive association with internal auditor effectiveness.

The significance of agency theory in internal auditing research is demonstrated by its widespread application to explain variables such as internal audit effectiveness (Oussii & Boulila, 2020; Endaya & Hanefah, 2016; Mihret & Yismaw, 2007); internal auditors' involvement in corporate governance (Martino *et al*., 2021; Vadasi *et al*., 2019); internal audit Shariah auditing effectiveness (Khalid & Sarea, 2020); perceptions about internal audit quality (Krichene & Baklouti, 2020); quality of internal control; voluntary usage of internal audit services (Ronkko *et al*., 2018); and internal audit's role in enhancing accountability (Bananuka *et al*., 2018). Internal auditing quantitative studies that use agency theory draw on Adams' (1994) theoretical literature, which views internal auditors as monitoring agents of the board who are independent of top management while disclosing risk. Moreover, when ownership and management are separated, internal auditors reduce the agency's knowledge asymmetry by providing risk assurance services to the board. Since agency theory explains why an internal auditor are necessary, it is a central theory in the present study. The behavioural agency theory complements the classical agency theory by explaining the rationale of behavioural and psychological factors in explaining the effectiveness of internal auditors.

Although the significance of agency theory is widely acknowledged in studies on internal auditing, it is not sufficient to explain the effectiveness of internal auditing. Agency theory assumes that internal auditors are independent of top management and employees when reporting to the board's audit committee. However, this theory ignores the social realities of internal auditors. Unlike external auditors, internal auditors work with top management and employees daily. Because of familiar workplace social ties, internal auditors may not be as independent as envisaged, and CEOs could influence internal auditors' behaviour and output. Indeed, several corporate governance scholars recognize the limitations of the agency theory paradigm (Berle & Means, 1932; Jensen & Meckling, 1976), arguing that agency theory is too limited to provide a broader set of variables that influence corporate governance outcomes (Christopher, 2019; Aguilera, Filatotchev, Gospel, & Jackson, 2008; Daily *et al.*, 2003; Filatotchev, 2008; Young & Thyil, 2008). For instance, agency theory disregards the influence of social variables on internal auditors' behaviour, although it is impossible to separate an individual's behaviour from the social context in which the behaviour occurs (Mihret, 2014). Therefore, a multi-theoretical approach is essential in internal auditing research because of the shortcomings of agency theory (Christopher, 2018).

In summary, two tenets of the traditional agency theory are relevant for explaining the hypothesized relationship between audit committee support and internal auditor effectiveness. First, is the principal –agent problem. The principal, such as a board of directors, assigns the agent, such as an internal auditor, to act in their best interests. However, due to information asymmetry and conflicting objectives, the agent (Internal auditor) may act in their self-interest, leading to reduced effectiveness. The second is the need to monitor and incentivize agents. Audit committees need to monitor internal auditors and also provide incentives to motivate internal auditors to increase their effectiveness. However, the incentives suggested by the classical agency theory such as performance-based pay and bonuses assume agents are rational, ignoring the role of cognitive biases. That is why the behavioural agency theory is used to complement the classical agency theory.

Two tenets of behavioural agency theory are relevant for explaining the relationship between audit committee support and internal auditor effectiveness. First, is the recognition that behavioural agency theory challenges the assumptions of rationality and argues that cognitive biases and the need to consider psychological factors. Thus, audit committee support is expected to influence internal auditor effectiveness by increasing internal auditors' perception of a safe environment in which their work is done.

The present study, therefore, adopts agency theory (Jensen & Meckling, 1976) as the main theory but adopts a multi-theoretical approach by integrating agency theory (Jensen & Meckling, 1976) with social power theory (French & Raven, 1959; Friedkin, 1986), social cognitive theory (Bandura, 1991), upper echelon theory (Hambrick & Mason, 1984), social exchange theory (Blau, 1964; Cheung, 2013), organisational support theory (Rhoades & Eisenberger, 2002), and contingency theory to incorporate CEO openness as a mechanism for the perceived board audit committee support-internal audit effectiveness relationship.

2.5.2 Social Power Theory

According to social power theory, a member of a population has social power over another member if the former can influence the latter's psychological state in terms of behaviour, opinions, attitudes, goals, and other psychological states (French & Raven, 1959; Friedkin, 1986).

Social power theory (French & Raven, 1959; Friedkin, 1986) is used in the present study to explain the influence of the CEO on internal auditors' moral courage and, ultimately, internal audit effectiveness.

Social power theory was previously used in internal auditing research to explain the relationship between tone at the top in terms of the values and motives of leaders and internal auditing outcomes (Wang & Fargher, 2015). Wang and Faragher (2015) drew on social power theory to explain the effect of the tone at the top and the internal auditors' fraud risk assessment and revealed that a good tone at the top in terms of leaders' good motives and values is positively related to the internal auditors' assessment of fraud risk.

As a result, the present study, which is based on social power theory, considers the CEO's openness to internal auditors' views as a top-down tone and investigates how the tone affects internal auditors' moral courage to speak out about ethical issues.

2.5.3 Power-Dependence theory of Organizational Responses to Whistle-Blowing

The power-dependence theory of organisations' responses to whistle-blowing argues that whistle-blowers experience better success and fewer negative consequences if the whistle-blowers hold positions of organisational power or have the support of superiors (Near & Miceli, 1985; 1987; Miceli & Near, 1992; Casal & Zalkind, 1995).

The power-dependence theory of organisations' responses to whistleblowing provides antecedent conditions for the effectiveness of whistleblowing in terms of achieving whistleblowing goals. The power-dependence theory of organisations' responses to whistle-blowing is consistent with Near and Miceli's (1995) view that encouragement of whistle-blowing is inappropriate unless the encourager is aware of the factors that increase the likelihood that the whistleblower's disclosure will achieve the intended goals. Due to the enormous risks involved, whistleblowing is regarded as a morally courageous action (Wiisak *et al*., 2022). Thus, it may be argued, using the power-dependence theory of organisations’ responses to whistleblowing, that the success of morally courageous acts' in achieving the desired goals depends on the antecedent variables of superior support and the power that superiors provide to courageous actors such as internal auditors.

The present study employs the power-dependence theory of organisations’ responses to whistleblowing to explain the hypothesised mediating effects of internal auditors' moral courage behaviour in the relationships between perceived board audit committee support and internal audit effectiveness and between CEO openness and internal audit effectiveness.

Extant theoretical literature views internal auditors as change agents (Lenz & Hahn, 2015), and the ability to influence change is power (Turner, 2005). One of the questions in the extant theoretical internal auditing literature is how the internal auditors’ power within the organisation affects their ability to influence internal audit effectiveness (Kotb *et al*., 2020). As a result, the current study makes use of the power-dependence theory of organisational responses to whistleblowing (Casal & Zalkind, 1995; Near & Miceli, 1985; Near & Miceli, 1987; Miceli & Near, 1992; Miceli & Near, 1994) to contend that the vicarious power held by internal auditors as a result of support from the board or the board's audit committee, as well as CEO openness to internal auditors’ recommendations, positively impacts internal audit effectiveness.

Power is the "capacity to impact, change, or influence things in the physical or social world" (Anvari *et al*., 2019; Turner, 2005). In a social setting such as an organisation, effectiveness is achieved by influencing other people’s behaviours and attitudes

(Martin, 1978) through control and persuasion (Anvari *et al*., 2019). Drawing on the theory that influencing effectiveness is achieved through influencing behaviours and attitudes, internal auditors will positively influence the effectiveness of internal audits in the form of influencing internal controls, risk management, managerial decision-making, and corporate governance through the successful persuasion of auditees to adopt internal audit recommendations. There are bases of power that underpin the influence process (French and Raven, 1959).

According to French and Raven (1959), legitimate, coercive, reward, expert, and referent power are the bases of power that underpin the capacity for influence. Legitimate power arises if others believe that one has the right to control their behaviour. For example, a board has legitimate power to oversee the work of top management, a CEO has legitimate power to lead an organisation, and internal auditors have legitimate power to render consultancy services to top management and assurance services to the board or audit. Coercive power arises when one can influence another's behaviour by having the capacity to punish for non-compliance. Reward power arises if one can reward those who comply. Expert power arises if one influences others' behaviours because they possess the skills and knowledge that others need or want. Referent power arises when one can influence others because they possess values that make others want to identify with them, such as the value of care. The board uses all sources of power to influence top management. For example, a board that cares about internal auditors' well-being and opinions has referent power, which can make internal auditors want to identify with the board and engage in behaviours that benefit the organisation. A CEO who is open to the suggestions of internal auditors has referent power because it creates a feeling that making suggestions is safe and can make internal auditors identify with the CEO. Consultants, on the other hand, mainly draw on expert and referent power to influence (Martin, 1978). For instance, internal auditors draw on their accounting and financial expertise to persuade implementers of their recommendations on risk management, internal controls, managerial decision-making, and corporate governance.

The power bases proposed by French and Raven (1959) explain influence in dyadic interactions, such as those between supervisors and subordinates. French and Raven's forms of power were utilised to explain the influence of dyadic interactions between consultants and consulting clients on the effectiveness of consulting services (Martin, 1978). Thus, the influence of the board or board audit committee on internal auditors, the influence of the chief executive officer on internal auditors, and the influence of internal auditors on implementers of internal audit recommendations can be explained using French and Raven's forms of power. However, knowledge of power relations should also include triads, such as a board influencing the internal auditor and the internal auditor ultimately influencing the implementers of the recommendations; the chief executive officer influencing the internal auditor; and the internal auditor ultimately influencing the implementers of internal audit recommendations.

Increasing scholarly attention is being paid to the influence process that involves more than two parties, such as in a triadic relationship using vicarious intergroup power (Anvari *et al*., 2019). However, to our knowledge, there is scant evidence of the use of vicarious intergroup power theory in empirical internal auditing research. Vicarious intergroup power refers to one's ability to influence an ingroup's actions using the influence of a third party outside the group (Anvari *et al*., 2019). With intergroup vicarious power, the perceived ability to influence is more closely tied to the external agency's desire and capacity to end the wrongdoing. The actions of a third party outside a group can either increase or decrease group members' potential to influence change.

For example, a third person outside a group that shields a whistleblower from perceived consequences of whistleblowing, such as income loss and retaliation by the whistleblower's group mates, demonstrates whistleblowers' utilisation of vicarious power (Anvari *et al*., 2019).

Vicarious power logic has been used to explain whistleblowing effectiveness using the power-dependence theory of organisational responses to whistleblowing (Casal and Zalkind 1995; Near and Miceli 1985; Near and Miceli 1987; Miceli and Near 1992; Miceli and Near 1994). Near and Jensen (1983) argued that employees' power in an organisation increases with an increase in support from superiors. Using the power-dependence theory of organisational reactions to whistleblowing, Casal and Zalkind (1995) surveyed members of the Institute of Management Accountants and observed that superiors' support for whistleblowers increased their likelihood of success in terms of achieving whistleblowing objectives. Superior support is evidence of vicarious power.

Using vicarious power theory, this study employs the power-dependence theory of organisational responses to whistleblowing to explain the hypothesised mediating effect of internal auditors' moral courage on the relationship between perceived board audit committee support and internal audit effectiveness and between CEO openness and internal audit effectiveness.

The current study utilises the power-dependence theory of organisational responses to whistleblowing logic (Casal & Zalkind, 1995; Near & Miceli, 1985; Near & Miceli, 1987; Miceli & Near, 1992; Miceli & Near, 1994) to argue that internal auditors' vicarious power as a result of board or board audit committee support enables internal auditors 'moral courage behaviours" to positively impact internal audit effectiveness.

Furthermore, openness to new ideas indicates a positive environment (Beck 2010). As a result, the current study hypothesises that because CEO openness to internal auditors' ideas is an indicator of support from the superior, the moral courage behaviours of internal auditors are likely to positively contribute to internal audit effectiveness when CEOs are open to internal auditors' ideas.

The study further argues that CEO openness fosters a less daunting atmosphere for internal auditors. However, in the absence of moral courage, internal auditors may hesitate to address sensitive issues or fully utilise the favourable environment created by an open CEO. Moral courage empowers them to seize the opportunity provided by an open environment and execute their responsibilities effectively.

2.5.4 Social Cognitive Theory

According to social cognitive theory, various contextual elements in an organisation influence organisational outcomes by influencing actors' self-regulated behaviour (Bandura, 1991).

Social cognitive theory was previously used to explain the effects of organisational contextual variables on moral courage behaviours. Khelil *et al*. (2018) used social cognitive theory to explain the relationship between a supportive board or board’s audit committee and internal auditors’ moral courage, revealing a positive relationship. Hannah *et al*. (2011) used social cognitive theory to explain the positive effect of authentic leadership on followers’ moral courage.

According to social cognitive theory-based research, followers participate in activities after establishing a sense of self-efficacy to engage in actions because of the motivating effect of contextual factors such as a supportive environment (Khelil *et al*. 2018).

Perceived self-efficacy refers to beliefs in one's capabilities to organise and execute the courses of action required to produce attainments' (Bandura, 1997, p. 3).

This study investigates the mediating effect of internal auditors' moral courage on the relationship between perceived board audit committee support and internal audit effectiveness. One condition for mediation is that the independent variable must have a significant effect on the mediator (Zhao *et al*., 2010). Therefore, the current study examines the effect of perceived board audit committee support on the moral courage of internal auditors as a condition for mediation. In addition, the current study utilises social cognitive theory to explain the effect of perceived board audit committee support on the moral courage of internal auditors.

2.5.5 Upper-Echelon Theory

According to upper-echelon theory, both organisational results in the form of strategies and effectiveness are seen as reflections of the values and cognitive foundations of the organisation's powerful actors (Hambrick & Mason, 1984, p. 193).

In the present study, upper echelon theory explains the influence of CEO openness on internal auditors' moral courage behaviour.

Upper echelon theory was first suggested and is frequently utilized by management researchers, although accounting researchers have paid less attention to upper echelon theory (Liu & Ji, 2022). In internal auditing research, the scant evidence reveals a study by Ludin *et al*. (2017) that examined the effect of the CEO's risk-taking propensity on risk management implementation in the Malaysian public sector, which reveals a positive relationship between risk-taking propensity and risk-management implementation. Top executives, specifically CEOs and CFOs, are involved in the majority of financial statement fraud cases, according to a COSO study. The study also found significant disparities in personality attributes between fraudulent and non-fraudulent organisations' chief executives (COSO, 2010; Liu & Ji, 2022). According to Liu and Ji (2022), the findings of COSO (2010) suggest that the top executives of an organisation can determine several accounting outcomes.

The executive attributes that have so far been empirically researched utilising upper echelon theory are classified into two categories: demographic and psychological characteristics (Liu & Ji, 2022). Top executives' Big Five personality characteristics are part of their psychological characteristics. Openness to change is one of the Big Five personality attributes that requires empirical examination in accounting research (Liu & Ji, 2022).

The present study uses upper echelon theory to explain the effect of CEO openness on internal auditors' moral courage and, ultimately, internal audit effectiveness. Openness to ideas is one of the big five personality attributes.

Two gaps in the literature motivated the use of upper echelon theory to explain the impact of CEO openness on internal auditors' moral courage in this study. First, Lenz and Hahn (2015) called for studies on the consequences of executive behaviours and how serving two masters—the board or board's audit committee—and top management impact internal audit effectiveness. Research on the influence of CEO openness demonstrates how another master's behaviour, in addition to that of a board or board's audit committee, impacts internal auditors' moral courage and, ultimately, internal audit effectiveness. Second, Liu and Ji (2022) called for research on the effects of psychological attributes such as the Big Five personality attributes, which include openness to experience, on accounting outcomes, utilising the upper echelon theory. Kotb *et al*. (2020) noted the limited use of theories from other disciplines in studies of internal auditing as a gap in the literature. The application of upper-echelon theory to explain the effect of CEO openness partly responds to calls for the use of upper-echelon theory in accounting research and responds to Kotb *et al*.'s (2020) call for internal auditing studies to use theories from other disciplines.

2.5.6 Organizational Support Theory

Organisational support theory defines perceived organisational support (POS) as the employees' perception of "the extent to which the organisation values their contributions and cares about their well-being"(Eisenberger *et al*., 1986, p. Organisational support theory further asserts that to the extent that the actions of supervisors are perceived to be the actions of the organisation, perceived supervisor support is perceived to be organisational support.

The present study uses organisational support theory to explain how and why a supportive board or supportive board's audit committee influences the internal auditors' 'moral courage behaviour and ultimately internal audit effectiveness.

Although organisational support theory was developed in the organisational behaviour literature, there is increasing usage of the theory in internal auditing studies (Khelil *et al*., 2018; Liu *et al*., 2020). Internal auditing studies have used organisational support theory to explain the effect of perceived support on different internal audit outcomes, such as internal auditors' moral courage (Khelil *et al*., 2018) and the voice of internal auditors on environmental-related issues (Liu *et al*., 2020).

The central argument in the studies that use the organisational support theory to explain the effect of supervisor support on organisational outcomes is that the feeling of being supported motivates followers to engage in reciprocal behaviours such as moral courage to show concern about ethical issues.

Since the present study examines the relationship between board audit committee support and internal auditors' moral courage and internal audit effectiveness, the organisational support theory is appropriate for the study and, as such, is used. Organisational support theory is reinforced by social exchange theory.

2.5.7 Social Exchange Theory

According to social exchange theory, in the social interaction of at least two parties, a party could be motivated to act or react in a certain way because of the expected benefits from the other party (Blau, 1964; Cheung, 2013).

In a social exchange relationship, resources are shared through a reciprocal process in which one party tends to return the good (or sometimes negative) conduct of the other party (Gouldner, 1960; Gergen, 1969; Cropanzano *et al*., 2017). Social exchanges differ from economic exchanges in that economic exchanges are characterized by less trust and closer monitoring to ensure that the other party reciprocates. On the other hand, in a social exchange relationship, one party's good deeds build trust in the other party, motivating the other party to participate in reciprocal beneficial behaviours (Organ, 1988; Organ, 1990; Cropanzano *et al*., 2017).

Cropanzano *et al*. (2017) developed a general model of social exchange to summarise the hypothesised directions of reciprocal reactions of one party in response to the actions of an initiating actor. According to Cropanzano *et al*. (2017), when one party's actions benefit a targeted party, a high-quality social exchange connection is established, and the resulting high-quality social exchange relationship ultimately stimulates the targeted party to behave in a manner that benefits the actor. However, when one party's actions negatively impact the targeted party, the resulting connection between the acting party and the targeted party is merely an economic one, where the only connection between the two parties is one of economic gain. Consequently, the targeted party may behave in a way that disadvantages the actor.

Previous research has demonstrated how social exchange theory accounts for the effects of organisational and supervisory support (Ladd & Henry, 2000; Cropanzano *et al*., 2017). Employees' perception of a highly supportive organisation or supervisor creates trust in the supervisor or organisation and motivates employees to reciprocate by engaging in organisational citizenship behaviours (Cropanzano *et al*., 2017). On the other hand, employees' perception of low support from the supervisor or organisation reduces their trust in the supervisor, which could lead to negative reactions by engaging in counterproductive work behaviours (Cropanzano *et al*., 2017). Organisational citizenship behaviours are behaviours that are likely to be helpful to the organisation and/or its members (Organ *et al*., 2006), whereas counterproductive work behaviours (CWB) are behaviours that have the potential to be detrimental to the organisation and/or its members (Spector & Fox, 2005).

Internal auditing studies are increasingly using social exchange theory to explain the influence of leaders on audit outcomes (Khelil *et al*., 2018; Liu *et al*., 2020; Ma'Ayan & Carmeli, 2016). Existing internal auditing studies employ social exchange theory to explain a variety of relationships between variables, including audit committee support and internal auditors' moral courage (Khelil *et al*., 2018), top management support and audit learning (Ma'Ayan & Carmeli, 2016), and organisational support and internal auditors' voices on environmental issues (Liu *et al*., 2020). The central argument in internal auditing studies that employ social exchange theory is that internal auditors supported by supervisors are more inclined to reciprocate by engaging in behaviours beneficial to the organisation.

In sum, social exchange theory has several tenets that help explain the hypothesized relationships between audit committee support and internal auditors' moral courage to speak about ethical issues, as well as CEO openness and internal auditors' moral courage to speak about ethical issues. These are the norms of reciprocity, trust and obligation, social reward and cost, and fairness. On the norm of reciprocity, this study argues that when audit committees actively support internal auditors by caring about internal auditors' opinions and well-being, internal auditors are likely to feel obliged to reciprocate by fulfilling their role effectively, including raising concerns about potential risks, such as ethical issues. Regarding the tenet of trust and obligation, when CEOs demonstrate openness to internal auditors' ideas, this demonstration may foster trust among internal auditors and a sense of obligation to internal auditors. Internal auditors may feel valued and respected, which may increase their willingness to raise sensitive concerns. On the norm of social costs and rewards, whereas internal auditors face the costs of retaliation and harmed relationships due to raising ethical concerns, this study argues that the openness of CEOs to internal auditors' ideas as well as the audit committee’s support creates a rewarding environment that could make internal auditors forget about the costs of their boldness in raising ethical issues, which may encourage internal auditors to speak up about ethical issues.

The present study, therefore, uses social exchange theory to account for the effects of board audit committee as well as the effect of CEO openness.

2.5.8 Contingency Theory

Contingency theory is commonly used to explain moderation relationships; however, evidence of its use in internal auditing studies is still limited to the best of the researcher’s knowledge.

An interaction perspective of contingency theory argues that organisational performance differentials can be explained by the interaction between organisational structure and context (Donaldson, 2001; Drazin & Van de Ven, 1985). In terms of reporting structure, internal audit executives report to the board's audit committee. As such, the board or the audit committee of the board should have some influence on internal audit behaviour. On the other hand, internal auditors serve two masters: the board or audit committee of the board and top management (Abbott *et al*., 2010; Lenz & Hahn, 2015). Because of this dual reporting structure, audit committee and CEO variables could interact to influence internal audit effectiveness, and the effects of audit committee variables could be contingent on CEO variables.

Contingency theory is a newer theory in the field of internal auditing research that has seen minimal use in internal auditing studies (Kotb *et al*., 2020). A few internal auditing studies (Badara & Saidin, 2013; Hutchinson & Zain, 2009) have drawn on contingency theory to explain the moderating effects. For instance, an empirical study by Hutchinson and Zain (2009) used contingency theory to explain the moderating effects of growth opportunities and audit committee independence in the relationship between internal audit quality and firm performance of companies in Malaysia. The study by Hutchinson and Zain (2009) reveals that a variable relating to one corporate governance party, such as the audit, modifies the effect of another corporate governance party, such as the audit committee, on the firm's performance. The study by Badara & Saidin (2013) is a conceptual paper that developed propositions on the relationships between internal audit effectiveness and performance measurement, internal auditor-external auditor cooperation, audit experience, risk management, and an effective internal control system.

The literature review demonstrates that the use of contingency theory in internal auditing studies is limited. Nonetheless, as the understanding of independent variables in internal auditing studies increases, it is essential to understand contingency variables that could modify bivariate relationships. Therefore, the present study contributes to the scant evidence on the application of contingency theory to internal auditing research by elucidating the moderating influence of CEO openness on the association between perceived board audit committee support and internal audit effectiveness.

In summary, there are two key tenets of the contingency theory that are important in applying the contingency theory to answering the research question of whether CEO openness moderates the relationship between audit committee support and internal auditor effectiveness. The first tenet is that of interaction: The central principle of contingency theory (Donaldson, 2001; Drazin & Van de Ven, 1985), is the interdependence of variables. The level of CEO openness, which may represent organisational openness and collaboration, can interact with audit committee support to impact the effectiveness of internal auditors. In essence, the effectiveness of the internal audit may depend on the degree of CEO openness. The second tenet is that one of “fit”. The contingency theory suggests finding the optimal "fit" between organisational strategies and contextual factors. In this study, CEO openness can be considered a contextual factor that may influence the alignment between audit committee support and the effectiveness of internal auditors.

2.6 The Relationship between Board Audit Committee Support and Internal Auditors’ Effectiveness

This study hypothesizes that perceived board audit committee support and chief internal audit effectiveness are positively related.

Drawing on social cognitive theory, contextual factors in an organisation positively influence organisational outcomes (Bandura, 1991). In line with this logic, perceived board audit committee support is a contextual factor in an organisation that could influence internal audit effectiveness. The explanation for the link draws on organisational support theory (Eisenberger *et al*., 1986), which posits that organisational support is positively associated with employee behaviour and work outcomes (Malik, 2018). This is because when employees feel supported through appreciation and care for their well-being, the feeling creates a sense of belonging and commitment to the organisation. Consequently, employees who feel supported reciprocate by engaging in beneficial behaviours that positively influence organisational outcomes (Malik, 2018). Employees who feel supported by their supervisors are motivated to reciprocate good deeds by engaging in behaviours that could lead to improved extra-role and intra-role organisational performance (Rhoades and Eisenberger 2002). In addition, using social cognitive theory, the support of a supervisor, such as a board or a board's audit committee, gives subordinates, such as internal auditors, a sense of self-efficacy to engage in behaviours (Khelil *et al*., 2018). Self-efficacy refers to "beliefs in one’s capabilities to organise and execute the courses of action required to produce given attainments’ (Bandura, 1997, p. 3).

Indeed, empirical internal auditing studies utilising the organisational support theory have demonstrated evidence of a positive relationship between organisational support and internal audit effectiveness. For instance, studies reveal that management support in the form of creating good social relationships with internal auditors creates a sense of independence for internal auditors to work objectively, leading to internal audit effectiveness (Christopher *et al*., 2009). This is in agreement with Cohen and Sayag (2010), who contend that support for quality influences work quality. Alzeban and

Sawan (2015) found that more supportive board audit committees are more likely to promote better risk management because they motivate internal auditors to engage in more risk management activities. A supportive environment influences effectiveness by influencing the acceptance of internal auditors' recommendations and ultimately their implementation (Ahmad *et al*., 2009). In conclusion, studies agree that support for internal auditors positively influences their effectiveness.

This study hypothesises that perceived board audit committee support is positively associated with internal audit effectiveness in light of the organisational support theory, which states that perceived supervisor support positively influences organisational outcomes (Eisenberger *et al*., 1986).

This study extends the research by refining the instrument for measuring board audit committee support, evaluating the protection of internal auditors from retaliation as a potential component of board audit committee support, and examining the influence of the revised board audit committee support construct on internal audit effectiveness. Internal auditing research employing organisational support literature, such as Khelil *et al*. (2018), acknowledges retaliation as an obstacle to internal auditors' jobs. Further, Khelil *et al*. (2018) argue that supporting internal auditors encourages them to overcome anxiety and speak up about ethical issues, which would have a positive effect on firms. However, the existing board audit committee support tool utilised by Khelil *et al*. (2018) does not provide for internal auditors' protection from retaliation. Anvari *et al*. (2019) believe that since retaliation is a significant barrier that courageous actors such as whistleblowers encounter, protecting courageous actors from retaliation could be a strategy for empowering courageous actors such as whistleblowers to affect change. Similarly, Lee and Xiao (2018) recommend that future research investigate the variables likely to impact retaliation against accountants' courageous actions.

Consequently, this study hypothesises that internal auditors' protection from retaliation is one of the factors that might load highly on the board audit committee support instrument, which could significantly explain internal audit effectiveness.

2.7 The Relationship between CEO Openness and Internal Audit Effectiveness

The study hypothesises that there is a positive relationship between CEO openness and internal audit effectiveness.

The upper echelons theory underpins the explanation of the effect of powerful organisational actors, such as CEOs, on organisational outcomes. The upper echelons theory posits that "both organisational results in the form of strategies and effectiveness are seen as reflections of the values and cognitive foundations of the organisation's powerful actors" (Hambrick & Mason, 1984, p. 193), and CEOs are viewed as such powerful actors (Hambrick, 2007).

CEOs in organisations set the "tone at the top. The tone at the top refers to the organisation-wide dispositions of integrity and control awareness demonstrated by an organisation's most senior executives" (Association of Certified Fraud Examiners [ACFE], 2006). Thus, top executives provide an example that is likely to inspire employees to engage in organizationally beneficial behaviours. This is because positive examples established by top executives in terms of behaviours that benefit the organisation are likely to influence employees to engage in such behaviours (Wang & Fargher, 2015).

The empirical literature on internal auditing supports the influence of CEO characteristics on internal auditing variables. A study by Ludin *et al*. (2017) revealed that CEOs' risk-taking propensity positively influences risk management implementation in the Malaysian public sector. Furthermore, Lin *et al*. (2014) revealed that CEO entrenchment is positively related to internal control quality. Thus, existing empirical studies agree that CEO attributes affect internal auditing.

Using upper-echelon theory and previous empirical findings and recognising that CEO openness sets the tone at the top, this study argues that when CEOs are receptive to the recommendations of internal auditors, the rest of the organisational actors are more likely to be receptive to the recommendations of the internal audit. Consequently, responsiveness may have a positive effect on the effectiveness of internal auditing in the form of positive contributions to managerial decision-making, internal control, corporate processes, and governance. Therefore, this study hypothesises a positive relationship between CEO openness and internal audit effectiveness.

Lenz and Hahn (2015) urged research on the effects of executive behaviours on internal audit effectiveness and the consequences of serving two masters, the board or board's audit committee and the top executives, on internal audit effectiveness. Similarly, Liu and Ji (2022) urged research on the implications of the Big Five personality traits, including openness, and the use of upper-echelon theory to explain accounting outcomes.

This study examines the relationship between CEO openness and internal audit effectiveness in response to requests for research on the effects of executive characteristics and how upper-echelon theory explain accounting-related outcomes.

2.8 The Relationship between Board Audit Committee Support and Internal Auditors' Moral Courage

This study hypothesises that perceived board audit committee support and internal audit effectiveness are positively related.

Drawing on social cognitive theory, contextual factors in an organisation positively influence organisational outcomes (Bandura, 1991). In line with this logic, perceived board audit committee support is a contextual factor in an organisation that could influence internal audit effectiveness. The explanation for the link draws on organisational support theory (Eisenberger *et al*., 1986), which posits that organisational support is positively associated with employee behaviour and work outcomes (Malik, 2018). This is because when employees feel supported through appreciation and care for their well-being, the feeling creates a sense of belonging and commitment to the organisation. Consequently, employees who feel supported reciprocate by engaging in beneficial behaviours that positively influence organisational outcomes (Malik, 2018). Employees who feel supported by their supervisors are motivated to reciprocate good deeds by engaging in behaviours that could lead to improved extra-role and intra-role organisational performance (Rhoades and Eisenberger 2002). In addition, using social cognitive theory, the support of a supervisor, such as a board or a board's audit committee, gives subordinates, such as internal auditors, a sense of self-efficacy to engage in behaviours (Khelil *et al*., 2018). Self-efficacy refers to "beliefs in one's capabilities to organise and execute the courses of action required to produce given attainments' (Bandura, 1997, p. 3).

Indeed, empirical internal auditing studies utilising the organisational support theory have demonstrated evidence of a positive relationship between organisational support and some aspects of internal audit effectiveness. For instance, studies reveal that management support in the form of creating good social relationships with internal auditors creates a sense of independence for internal auditors to work objectively, leading to internal audit effectiveness (Christopher *et al*., 2009). This is in agreement with Cohen and Sayag (2010), who contend that support for quality influences work quality. Alzeban and Sawan (2015) found that more supportive board audit committees are more likely to promote better risk management because they motivate internal auditors to engage in more risk management activities. A supportive environment influences effectiveness by influencing the acceptance of internal auditors' recommendations and ultimately their implementation (Ahmad *et al*., 2009). In conclusion, studies agree that support for internal auditors positively influences their effectiveness.

This study hypothesises that perceived board audit committee support is positively associated with internal audit effectiveness in light of the organisational support theory, which states that perceived supervisor support positively influences organisational outcomes (Eisenberger *et al*., 1986).

This study extends the research by refining the instrument for measuring perceived board audit committee support, evaluating the protection of internal auditors from retaliation as a potential component of board audit committee support, and examining the influence of the revised board audit committee support construct on internal audit effectiveness. Internal auditing research employing organisational support literature, such as Khelil *et al*. (2018), acknowledges retaliation as an obstacle to internal auditors' jobs. Further, Khelil *et al*. (2018) argue that supporting internal auditors encourages them to overcome anxiety and speak up about ethical issues, which would have a positive effect on firms. However, the existing board audit committee support tool utilised by Kheli *et al*. (2018) does not provide for internal auditors' protection from retaliation. Anvari *et al*. (2019) believe that since retaliation is a significant barrier that courageous actors such as whistleblowers encounter, protecting courageous actors from retaliation could be a strategy for empowering courageous actors such as whistleblowers to affect change. Similarly, Lee and Xiao (2018) recommend that future research investigate the variables likely to impact retaliation against accountants' courageous actions. Consequently, this study hypothesises that internal auditors' protection from retaliation is one of the factors that might load highly on the board audit committee support instrument, which could significantly explain internal audit effectiveness.

2.9 The Relationship between the Internal Auditors' Moral Courage and Internal Audit Effectiveness

The present study hypothesises that internal auditors' moral courage in speaking up about ethical issues is positively related to internal audit effectiveness, as measured by enhancements in managerial decision-making, business processes, internal controls, and governance.

Moral courage is the courage to act ethically (Lachman, 2007a), and existing research has requested studies on the effect of ethical behaviours on internal audit effectiveness (Kotb *et al*., 2020). Thus, studying the effect of internal auditors' moral courage in speaking up about ethical issues on internal audit effectiveness is in line with this call.

According to the extant theoretical literature, speaking-up behaviour may explain organisational outcomes such as improved managerial decision-making, error correction, and learning and improvement (Morrison, 2011). However, Morrison (2011) contends that the effect of speaking up depends in part on the substance of the message and how others react to the message. For example, an organisation can be adversely affected when good ideas are not implemented or when poor ideas are implemented (Morrison, 2011). Thus, organisational citizenship behaviours, as opposed to counterproductive behaviours, could potentially have a positive effect on organisational outcomes if the response to the organisational citizenship behaviours is favourable. Organisational citizenship behaviours are likely to benefit the organisation (Organ *et al*., 2006; Cropanzano *et al*., 2017). In contrast, counterproductive work behaviours are likely to adversely affect an organisation (Cropanzano *et al*., 2017; Spector & Fox, 2005).

Speaking up behaviours aimed at positively impacting organisations are promotive-supportive and promotive-constructive behaviours (Maynes & Podsakoff, 2014). Supportive speaking-up behaviour is the intentional communication of approval for worthwhile work-related ideas as well as the defence of ideas when those ideas are unfairly challenged by others, while constructive speaking-up behaviour is the voluntary communication of ideas, facts, or opinions aimed at making organizationally effective changes to the workplace setting (Maynes & Podsakoff, 2014). Employees' assertions expressing concerns regarding work processes, incidents, or employee behaviour or employees' voicing of new thoughts or suggestions on how to improve the general functioning of a work unit or organisation are instances of constructive speaking-up behaviour (Liang *et al*., 2012; Maynes & Podsakoff, 2014). Thus. Internal auditors' moral courage in speaking up about ethical issues is promotional and constructive, as it is intended to eliminate errors and fraud.

It is suggested that when an organisation is receptive to change, courageous behaviours such as whistleblowing will potentially positively affect future organisational performance as a result of eliminating wrongdoing (Near & Miceli, 1995). Existing empirical evidence supports the hypothesis that courageous acts such as whistleblowing may have a positive effect on organisations. For instance, an examination of the relationship between employees' external whistleblowing and financial reporting quality indicated that employees' external whistleblowing enhances financial reporting quality by eliminating accounting-related misconduct (Wilde, 2017).

Based on the literature, this study hypothesises that when internal auditors' recommendations are positively accepted and implemented, their moral courage in expressing ethical concerns is likely to be positively related to internal audit effectiveness, as measured by enhancements in managerial decision-making, business processes, internal controls, and governance.

This study is a partial response to requests for research on the influence of executive behaviours (Lenz & Hahn, 2015), such as ethical practices (Kotb *et al*., 2020), on internal audit effectiveness.

2.10 The Mediating Effect of Internal Auditors' Moral Courage in the Relationship between Board Audit Committee Support and Internal Audit Effectiveness

The current study hypothesises that internal auditors' moral courage mediates the association between board audit committee support and internal audit effectiveness.

Existing research has examined the effect of board audit committee support on internal auditors' moral courage (Khelil *et al*., 2018). However, the available research has yet to examine situations in which internal auditors' moral courage behaviours positively impact internal audit effectiveness, to the researcher's knowledge. Therefore, the mediating effect of internal auditors' moral courage on the perceived board audit committee support-internal audit effectiveness relationship tests a situation in which moral courage behaviours impact internal audit effectiveness.

Research on the effect of perceived board audit committee support on internal audit executives' moral courage reveals a positive relationship (Khelil *et al*., 2018). A board audit committee that is supportive of internal auditors strongly considers the goals and values of internal auditors, solves internal auditors' problems, cares about internal auditors' well-being, tends to ignore internal auditors' honest mistakes, assists internal auditors that require special favours, and values their opinions (Khelil *et al.*, 2018). As a result, internal auditors reciprocate support by demonstrating moral courage by speaking up about ethical issues. This is consistent with social exchange theory-related literature, which argues that supervisor support motivates followers to engage in organisation-beneficial behaviour (Riggle *et al*., 2009; Cropanzano *et al*., 2017).

Moral courage is an ethical virtue, and previous research has called for empirical studies of the effect of ethical behaviours on the effectiveness of internal auditing (Kotb *et al*., 2020). Available evidence shows that the effects of moral courage behaviours are likely to be mixed. For instance, rather than acting on the internal auditors' suggestions, WorldCom management and staff colluded against the company's courageous internal audit vice president, who alerted the company to fraud (Khelil *et al*., 2018). In contrast, some research suggests a link between courageous actions, such as whistleblowing, and beneficial organisational outcomes, such as better financial reporting (Lee & Xiao, 2018). The contradictory outcomes of moral courage behaviours raise questions about the conditions under which internal audit executives' moral courage positively affects internal audit outcomes. Further, how internal auditors' power affects their ability to positively impact internal audit effectiveness has not been given adequate empirical attention (Kotb *et al*., 2020). Therefore, drawing on the social power theory by French and Raven (1959), the present study hypothesises that because of the internal auditors' vicarious power due to the support from the board or board's audit committee, the internal auditors' moral courage positively mediates the relationship between the perceived board audit committee support and internal audit effectiveness.

Internal auditors are consultants and change agents (Lenz & Hahn, 2015). Consultation is a means of influencing change, which requires power (Martin 1978). Power is the capacity to change or impact things in the physical world or society (Turner 2005). Power can be vicarious; vicarious power is the ability of a change agent to influence in-group behavioural change as a result of a change agent's relationship with a more powerful and influential party outside the group of change agents (Anvari *et al*., 2019). Vicarious power is illustrated by the whistleblower power dependence theory of responses to whistleblowing. According to the whistleblowers' power-dependence theory of responses to whistleblowing, whistleblowers who have the support of superiors may be more successful in influencing positive organisational change than whistleblowers who are not supported by superiors (Casal & Zalkind, 1995; Near & Miceli, 1985; Near & Miceli, 1987; Miceli & Near, 1992; Miceli & Near, 1994). Supportive supervisors influence not only whistleblowing but also the implementation behaviour of those who receive whistleblowers' ideas. Supervisors who are viewed as more supportive influence the transformation of the employee's work environment to be more supportive of idea implementation (Škerlavaj *et al*., 2014). Supervisors' ability to influence is partly based on their power to reward and reprimand (French & Raven, 1959). The power dependence theory of organisational responses to whistleblowing was supported by an empirical study of management accountants, which showed that people who reported misconduct while being supported by superiors were more likely to succeed in achieving whistleblowing objectives (Casal & Zalkind, 1995).

Based on the theoretical literature and treating the board as superior, this study argues that a supportive board or board's audit committee potentially influences internal auditors' moral courage to speak up about ethical issues because the internal auditors return the support. Internal auditors' ideas impact managerial decision-making, internal control, and governance if internal audit recommendations are implemented. Internal auditors' ability to influence the implementation of internal audit ideas is partly due to their vicarious power arising from being supported by a board or board's audit committee and the board's influence on a work environment that supports the implementation of internal auditors' ideas. This is because it is possible to see support for internal audits as a signal from the top that everyone else should implement internal audit ideas.

In sum, this study argues that when an audit committee is supportive, it bolsters internal auditors' power. However, without moral courage, internal auditors may still refrain from confronting powerful individuals or reporting ethical issues. In this context, moral courage is crucial in transforming the power conferred by committee support into tangible effectiveness.

Accordingly, drawing on the power-dependence theory of organisational responses to whistleblowing, this study hypothesises that internal auditors' moral courage mediates the relationship between audit committee support and internal auditors' effectiveness.

2.11 The Relationship between CEO Openness and Internal Auditors' Moral Courage

The present study hypothesizes that CEO openness and internal auditors' moral courage behaviours are positively and significantly related.

Existing research on the drivers of internal auditors' moral courage to speak up about ethical issues has thus far focused on the effect of a supportive board or a supportive board's audit committee (Khelil *et al.*, 2018). However, internal auditors serve two masters: the board or the board's audit committee and executive leadership (Abbot *et al.*, 2010). Researchers have sought to investigate the effects of serving dual masters and leadership behaviours on internal audits (Lenz and Hahn, 2015). Thus, examining the effect of CEO openness on internal auditors' moral courage is consistent with calls for research on the effects of leader behaviours and the implications of serving two masters.

Theoretical literature proposes leader openness as a driver of employees' speaking-up behaviour (Morrison, 2011). An open leader is interested in the suggestions of followers, listens to followers, gives followers' suggestions due consideration, and acts accordingly to address the issue presented (Ashford *et al*., 1998; Detert & Burris, 2007; Grant *et al*., 2011). A leader's receptivity to followers' ideas conveys to followers that the leader values the followers' speaking up and that it is safe for followers to speak up (Detert and Burris, 2007; Morrison, 2011). Additionally, a leader's openness to followers' suggestions gives followers the impression that speaking up is effective. Because a leader's openness increases followers' perceptions of safety in speaking up relative to the risks and perceived effectiveness of speaking up, followers may be encouraged to speak up (Morrison, 2011). Indeed, related empirical evidence from management literature reveals that managerial openness positively influences employees' voice behaviour by reducing employees' perceived costs of voice (Yin *et al*., 2021), such as retaliation and loss of jobs.

Morrison's (2011) conceptual model of the relationship between supervisor openness and speaking-up behaviour relates to employees and supervisors in general, in dyadic supervisor-follower relationships. To the best of the researcher's knowledge, the model has not been tested in the internal auditors 'unique context of reporting to two masters, the board or the board's audit committee, and top management with the CEO at the helm to determine whether CEO openness influences internal auditors' moral courage to speak up.

Drawing on agency theory, the supervisor of the internal auditor is the board or the board's audit committee, and internal auditors are assumed to be independent of management (Adams, 1994). If internal auditors are independent of management in substance and form, then CEO openness or lack of openness would potentially not significantly impact internal auditors' moral courage to speak up about ethical issues. However, in reality, internal auditors serve two masters: the board or the board's audit committee and top management (Abbot *et al*., 2010). As such, CEOs have the potential to influence internal auditors' behaviours. Indeed, the literature reveals that internal auditors sometimes tend to side with top management more than the audit committee of the board and even become keepers of the CEO's secrets rather than independently reporting to the audit committee of the board (Roussy, 2013). Based on the literature, it is arguable that CEOs have the potential to influence internal auditors' moral courage.

Based on upper-echelon theory and the reviewed literature on leader openness, the current study hypothesises that chief executive officers' openness to internal auditors' recommendations is positively associated with internal auditors' moral courage to speak up about ethical issues.

The central tenet of upper echelon theory is that the values and biases of senior executives are reflected in organisational behaviour (Hambrick & Mason, 1984). Based on the upper-echelon argument, internal auditors' moral courage to speak up on ethical issues is potentially influenced by CEO openness. Deducing from the literature in Morrison's (2011) voice behaviour conceptual model, the present study argues that CEO openness to the recommendations of internal auditors is a signal that the CEO values speaking-up behaviour and that it is safe for internal auditors to speak up about ethical issues. Furthermore, a CEO's openness to internal auditors' recommendations signals to internal auditors that speaking up will not be in vain. Thus, it is hypothesised that CEO openness is positively related to internal auditors' moral courage to speak up about ethical issues.

2.12 The Mediating Effect of the Internal Auditors' Moral Courage in the Relationship between CEO Openness and Internal Audit Effectiveness

To the best of the researcher's knowledge, mediating variables in the relationship between CEO openness and internal audit effectiveness have not been empirically examined. Therefore, this study proposes internal auditors' moral courage in speaking up about ethical issues as a mediating variable in the relationship between CEO openness and internal audit effectiveness.

The hypothesised mediating effect of internal auditors' moral courage on the relationship between CEO openness and internal audit effectiveness is explained using Morrison's (2011) theoretical voice behaviour model. Morrison's (2011) voice-behaviour model proposes relationships between supervisor openness, employees' speaking-up behaviour, and organisational outcomes.

According to Morrison (2011), openness from supervisors encourages employees to speak up because it gives employees the impression that it is safe to speak up and that speaking up will not be in vain, and ultimately speaking up positively influences organisational outcomes such as correction of errors, managerial decision-making, and learning and improvement. However, in internal auditing research, the issue of debate is who the internal auditors' supervisor is, and thus which supervisor's openness is referred to in the present study. According to Eulerich *et al*. (2019), the audit committee of a board is the supervisor of internal auditors. Consequently, according to internal auditing standards, internal auditors are presumed to be independent of executive leadership and not swayed by executive leadership (Roussy, 2013). On the other hand, other research shows that internal auditors serve two masters, the top managers and the board (Abbott *et al*., 2010), and chief executive officers often influence internal auditors to the extent that internal auditors end up serving as the custodians of secrets that the chief executive officers desire to protect from audit committee members (Roussy, 2013). Thus, the literature shows that in practice, CEOs influence internal auditors, contrary to the expectation that internal auditors are independent of top management. Cohen *et al*. (2008) draw on institutional theory from the sociology of organisations and organisational behaviour to argue that it is vital to comprehend the substance of the interactions between various governing actors rather than the form. Consequently, drawing on the substance rather than the form, the present study argues that although the audit committee of the board is recognized as the supervisor of the board according to auditing standards, in substance, the CEO also supervises the internal auditors. Thus, it is arguable that, drawing on Morrison's voice behaviour model, when CEOs demonstrate openness to the ideas of internal auditors, internal auditors are likely to feel safe to speak about ethical issues, knowing that CEOs will not retaliate. Therefore, CEO openness is likely to positively influence internal auditors' moral courage to speak about ethical issues.

Internal auditors' moral courage when speaking about ethical issues is likely to positively influence internal audit effectiveness. Ethical internal auditors improve corporate governance by preventing theft and financial reporting scandals (Khelil, 2022). Furthermore, speaking-up behaviour positively influences organisational outcomes such as better decision-making, correction of errors, learning, and improvement (Morrison, 2011). In contrast, Khelil's (2022) empirical results on the relationship between internal auditors' moral courage and internal audit effectiveness reveals an insignificant relationship. The finding by Khelil (2022) is consistent with Morrison’s (2011) argument that speaking out may not always positively influence organisational outcomes, for instance good ideas may not always be implemented. Therefore, Morrison (2011) argued that contextual factors that influence the association between speaking up and unit-level results should be examined.

This study argues that CEO openness influences both internal auditors’ moral courage and internal audit effectiveness and that internal auditors’ moral courage mediates the relationship between CEO openness and internal audit effectiveness, drawing on the power-dependence theory of organisations' responses to whistle-blowing and the upper-echelon theory.

The power-dependence theory of organisations' responses to whistleblowing posits that whistleblowers experience better success and fewer negative consequences if they hold positions of organisational power or have the support of superiors (Near & Miceli, 1985, 1987; Miceli & Near, 1992; Casal & Zalkind, 1995). Whistleblowing success implies that if wrongdoing is reported, action is taken to correct the wrongdoing (Near & Miceli, 1996). Among the forms of support from superiors is supervisor openness (Govaerts *et al*., 2018); thus, CEO openness is a type of supervisor support. A more supportive supervisor distributes more resources for the implementation of ideas and offers the political backing necessary to overcome resistance, tensions, and any other barriers that endanger the implementation of ideas. Additionally, supervisors’ openness to ideas fosters a workplace that is more receptive to idea implementation and problem-solving (Škerlavaj *et al*., 2014). Moreover, as CEOs set the tone at the top (Zengin-Karaibrahimoglu *et al*., 2021), it is conceivable that CEOs who are open to the internal auditor's recommendations set an example for potential implementors of the chief internal auditors' recommendations to be receptive to the ideas. The hypothesised influence of CEOs on internal audit behaviours and outcomes is further explained by the upper-echelon theory.

According to the upper echelon theory, "organisational outcomes—both strategies and effectiveness—are considered reflections of the values and cognitive underpinnings of powerful players in the organisation" (Hambrick & Mason, 1984, p. 1), and the top executives are powerful actors (Hambrick, 2007). Thus, in relation to the present study, CEOs' value of openness is likely to influence both internal auditors' moral courage to speak out about ethical issues and the environment that implements internal auditors' suggestions.

Based on the literature, this study hypothesises that CEO openness and internal auditors' moral courage are positively associated because CEO openness promotes an internal auditor's perception of safety to speak up and a sense that speaking up is not in vain. In addition, because an open CEO fosters an environment that is receptive to the ideas of the internal auditors, the internal auditors' expression of concern about ethical issues contributes positively to the effectiveness of internal auditing by enhancing managerial decision-making, internal control, and governance as the internal audit recommendations are implemented due to the CEOs' influence.

Therefore, this study hypothesises that moral courage among internal auditors positively mediates the relationship between CEO openness and internal audit effectiveness.

Examining the mediating effect of the internal auditors' moral courage in the relationship between CEO openness and internal auditors' effectiveness is important for several reasons: first, the study partially responds to Lenz and Hahn's (2015) call for research on the effects of executives' behaviours and serving two masters on internal audit effectiveness. Second, the present study partly responds to calls by Kotb *et al.* (2020) for studies on the effects of ethics on internal audit effectiveness, and internal auditors' moral courage behaviour is ethical behaviour. Third, by drawing on the power-dependence theory of organisational responses to whistleblowing to explain the mediating effect of the internal auditors' moral courage in the relationship between CEO openness and internal audit effectiveness, the present study responds to calls for studies on how internal auditors' power affects internal audit effectiveness. Fourth, Namazi and Namazi (2016) argue that research models without mediators and/or moderators are likely to be incomplete and less informative. Thus, the mediating effect of internal auditors' moral courage in the relationship between CEO openness and internal audit effectiveness potentially adds to knowledge on mechanisms through which CEO openness affects internal audit outcomes.

2.13 The Moderating Effect of CEO Openness in the Relationship between Board Audit Committee Support and Internal Auditors' Effectiveness

The present study hypothesises that CEO openness positively moderates the relationship between perceived board audit committee support and internal audit effectiveness, such that the effect of perceived board audit committee support on internal audit effectiveness is greater with more open CEOs.

The board or the board's audit committee supervises internal auditors (Eulerich *et al.*, 2019); hence, perceived board audit committee support is deemed supervisor support. The effects of supervisor support on organisational employee outcomes are often inconsistent because the perceived supervisor support-organisational outcome linkages are contingent on the behaviours of organisational actors (Yang *et al.*, 2020). This suggests that the effects of perceived board audit committee support on internal audit effectiveness are potentially inconsistent because of the behaviours of organisational actors, and this necessitates the exploration of moderators in the board audit committee support-internal audit effectiveness relationship. The exploration of moderators in the board audit committee support-internal audit effectiveness relationship is consistent with Namazi and Namazi's (2016) argument that research models without mediators and/or moderators are likely to be incomplete and less informative.

Drawing on organisational support theory, a positive association between perceived board audit committee support and internal audit effectiveness is expected. Supervisory support positively impacts organisational outcomes by motivating organisational actors' behaviours that are beneficial to their organisations. The employee's perception of a highly supportive organisation or supervisor creates an employee's trust in the supervisor or organisation and motivates the employee to reciprocate by engaging in organisational citizenship behaviours (Cropanzano *et al*., 2017). An organisational citizenship behaviour is a behaviour that is helpful to the organisation and/or the members of the organisation (Organ *et al*., 2006; Cropanzano *et al*., 2017). On the other hand, employees' perception of low support from the supervisor or organisation reduces the employees' trust in the supervisor, which could lead to negative reactions through engagement in counterproductive work behaviours (Cropanzano *et al*., 2017). Counterproductive work behaviours (CWB) are behaviours that have the potential to be detrimental to the organisation and/or its members (Spector & Fox, 2005). Empirical research on internal auditing is beginning to utilise organisational support and social exchange theories to explain the effectiveness of internal auditing. Empirical research on internal auditing utilising organisational support theory and social exchange theory demonstrates a positive relationship between support from the organisation and internal audit effectiveness (Lenz & Hahn, 2015; Khelil *et al*., 2016; Mihret & Yismaw, 2007; Cohen & Sayag, 2010). For instance, Abdelaz-iz and Nedal (2015) reveal that perceived board audit committee support is positively related to the implementation of internal auditors' recommendations. Therefore, drawing on the discussion above, it is hypothesised that there is a positive relationship between perceived board audit committee support and internal auditors' contribution to internal audit effectiveness in terms of improved internal control, managerial decision-making, governance, and business process improvement.

Furthermore, as hypothesized, we expect a positive relationship between CEO openness and internal auditors' effectiveness. This draws on the upper-echelon theory, which posits that "both organisational results in the form of strategies and effectiveness are seen as reflections of the values and cognitive foundations of the organisation's powerful actors" (Hambrick & Mason, 1984, p. 193), and CEOs are viewed as such powerful actors (Hambrick, 2007). CEOs have the power to reward and punish, which enables them to influence organisational actions and outcomes (Detert *et al*. 2007). The CEO's openness is expected to influence internal auditing results. Leaders who are open to employees' ideas create the impression that it is safe to speak up and that there are no repercussions to speaking up (Morrison, 2011). Additionally, leaders who are open to employees' ideas are considered supportive (Govaerts *et al*., 2018). Supportive leaders are likely to provide more resources that are necessary for the implementation of ideas and offer the political backing necessary to overcome resistance, tensions, and any other barriers that endanger the implementation of ideas. Additionally, supervisors' openness to ideas fosters a workplace that is more receptive to idea implementation and problem-solving (Škerlavaj *et al*., 2014). Therefore, based on the literature, it is arguable that an open CEO has the potential to positively impact internal audit effectiveness by creating a feeling of safety in making constructive recommendations and providing the resources and support necessary for the implementation of internal auditors' recommendations. Moreover, as CEOs set the tone at the top (Zengin-Karaibrahimoglu *et al*., 2021), it is conceivable that CEOs who are open to the internal auditor's recommendations set an example for possible implementers of the recommendations to be receptive to the ideas, which could positively impact internal audit effectiveness through impacting business processes, managerial decision-making, and internal control and governance. To the best of the researcher's knowledge, the effect of CEO openness on internal audit effectiveness has not been empirically examined. Drawing on the above discussions, this study argues that CEO openness is positively related to internal audit effectiveness.

To the best of the researcher's knowledge, studies that combine the actions of the board and CEO into one model to explain internal audit effectiveness are scarce. Studies continue to call for research on the consequences of serving two masters on the effectiveness of internal auditing (Lenz & Hahn, 2015) and the consequences of executive behaviours on organisational behaviour and output (Nguyen *et al*., 2015; O'Leary & Stewart, 2007). This study examines the moderating effect of CEO openness on the relationship between perceived board audit committee support and internal audit effectiveness.

Internal auditors, as viewed from the agency theory lens, are monitors on behalf of the board's audit committee and the owners of the firm and are independent of top management (Adams, 1994). The audit committee strives to safeguard the independence of internal auditors by selecting internal auditors rather than handing the selection responsibility to management, allowing internal auditors private access, and supporting internal auditors (Khelil *et al*., 2016). This perspective could suggest that internal auditors are free from the influence of CEOs. Thus, from this perspective, CEO openness may not significantly affect internal auditing results.

However, internal auditors have two masters: the top management and the board or the board's audit committee (Abbot *et al*., 2010). Therefore, CEOs' behaviours have the potential to affect internal auditing results and significantly modify the effect of a supportive board audit committee on internal audit effectiveness. Bananuka *et al*.'s (2017) empirical study in Uganda confirms that internal auditors do not feel independent of top executives. Evidence of CEOs' influence is further supported by a study that revealed that internal auditors tend to favour top management more than the audit committee, where internal auditors filter information sent to the audit committee to protect the interests of the CEOs (Roussy, 2013).

This study draws on the discussions above to argue that since internal auditors report to two influential parties, the CEO and the board's audit committee, internal auditors are likely to be effective if CEOs want the internal auditors to be. CEO openness is a way to demonstrate that CEOs want effective internal audits. This study argues that an open CEO and a supportive board audit committee are complementary in positively influencing internal audit effectiveness. As the board's audit committees support internal auditors to positively influence internal auditors' results, open CEOs help overcome resistance to internal auditors' ideas and positively influence the implementation of internal auditors' ideas. Therefore, this study hypothesises that a supportive board is positively associated with internal audit effectiveness, and CEO openness modifies the effect of perceived board audit committee support on internal audit effectiveness such that the effect of the board's audit committee support on internal audit effectiveness is higher with more open CEOs.

The addition of the moderating effect of CEO openness to the perceived board audit committee support-internal audit effectiveness relationship contributes to research on the effects of "serving two masters' and executive behaviours on internal audit effectiveness. Furthermore, this study responds to Namazi and Namazi's (2016) call for research with moderators that is more informative than direct relationships.

2.14 Summary of Key Articles Reviewed

Table 2.1 Summary of Key Articles Reviewed

Author/Title	Key research issue	Methodology	Context/ Setting/ sample	Findings	Future research
Adams, M. B. (1994). Agency theory and the internal audit.	The paucity of studies using Agency Theory in Internal auditing research	Literature Review		The theory explains the rationale for the existence of an internal audit department -it also assumes internal auditors are independent of top management.	Limitation of using the agency theory alone in IA studies with the unrealistic assumption of independence from CEOs -Need for a multi-theoretical approach to explaining IAE -The potential influence of CEO characteristics on internal audit is unexplored
Arena, M., & Azzone, G. (2009a). Identifying organizational drivers of internal audit effectiveness.	Identification of organizational drivers of IAE in light of changes to the IA definition and how to measure internal audit effectiveness	Cross-sectional empirical study	Top 300 Italian companies	Drivers: The ratio of internal auditors to employees, CAEs' professional affiliation to the IIA, adoption of risk self-assessment techniques, AC involvement in activities of internal auditors IAE was measured using a percentage of internal audit recommendations.	-Input, process, output, and outcome measures of IAE are available -Percentage of recommendations implemented (Output measure). Looks like a realistic measure for this study
Becker, T. E., Atinc, G., Breaugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2016). Statistical control in correlational studies: 10 essential recommendations	-The possibility of uninterpretable parameter estimates, erroneous inferences, results that cannot be replicated, & other barriers to scientific progress due to "statistical control".	Literature Review		Several recommendations on control variable usage. One that is emphasized: "When not sure, leave them out". -If the theory test doesn't provide for CVs, leave them out.	-Use of guidelines to retest previous relationships with theoretically unjustified inclusion of control variables -To improve replication of these For example, audit committee support and moral courage

for organizational researchers.	-Methodology articles provide guidelines, but the difficulty is in summarizing them. The paper brings them together				
Detert, J. R., & Burris, E. R. (2007). Leadership behavior and employee voice: Is the door really open?	Whether perceived managerial openness influences subordinates' voice behavior		3,153 servers, cooks, and hosts/hostesses of 100 casual dining restaurants, part of a chain	It influences subordinates' voice behavior because it signals psychological safety when subordinates speak up	Whether CEO openness influences the audit committee support- internal auditors' moral courage relationship
Khelil, I., Akrout, O., Hussainey, K., & Noubbigh, H. (2018). Breaking the silence: An empirical analysis of the drivers of internal auditors' moral courage	Scarcity of empirical studies that examine internal auditors' moral courage.	Cross-sectional empirical study	81 companies (77 listed) & 4 non- listed. In both the financial and non-financial sectors.	Audit committee support and moral courage are positively related. However, statistical control of variables is flawed according to some methodology literature	Controlled for extraneous variables despite previous contradictions and no theoretical justification for including them in the study. Need to align the hypotheses to the theories used.
Nguyen, D. D., Hagendorff, J., & Eshraghi, A. (2015). Which executive characteristics create value in banking? Evidence from appointment announcements.	Existing debate: -Whether executive characteristics matter for firm performance and behavior. -How they matter	Event study methodology to study market reactions to appointments	252 announcements of executive appointments	While CEO Xtics matter, no empirical evidence of the influence of executive characteristics on functional level performance for example Internal audit effectiveness. -Other characteristics like CEO Openness could be examined	Examination of CEO openness to contribute to the debate of how CEO characteristics matter.

Rainer Lenz and Ulrich Hahn (2015). A synthesis of empirical internal audit effectiveness literature pointing to new research opportunities.	What are the new research opportunities in internal audit effectiveness since the last review of 2003?	Literature review	Conceptual paper based on literature review	-Much work on the supply side and demand side perspectives of IAE but more research on independent variables is warranted some of which include -Internal audit relationships (with Top Mgt, Board, IA staff) -IA resources such as the behaviors of internal auditors.	IAE predictors to consider to fill the gap --Relationships of IAF with AC and CEO in one model. -CEO characteristics that could enable the IA to speak up, for example, CEO Openness
Rate, C. R., Clarke, J. A., Lindsay, D. R., & Sternberg, R. J. (2007). Implicit theories of courage.	So many definitions of courage. What do they have in common?	Implicit Theory methodology	Undergraduate and graduate students at Yale University	Elements in a definition of courage -willful, intentional act, - mindful deliberation, (-involving a substantial risk to the actor, - motivation: noble good or worthy end' -Therefore, elements are used in the moral courage definition.	To adopt a moral courage definition with these elements.
Rhoades, L. Eisenberger, R. (2002). Perceived organizational support: a review of the literature.	Antecedents and consequences of perceived organizational support.	Literature review	Masters, Ph.D. Theses and published work with the concept of perceived organizational support	-Actions of supervisors are equated to the actions of organizations -Therefore, support from supervisors is equated to organizational support -Supportive actions of supervisors motivate subordinates' reciprocation behavior - -Reciprocation behavior influences both in-role and extra-role performance	Mechanisms through which perceived supervisor support (PSS) could influence performance in internal auditing are not adequately examined. -In this study: Supervisor's support=audit committee support Reciprocation behavior= Moral courage of Internal auditors Performance=internal audit effectiveness

Table 2.2 Summary of the Key Theories Used in this Study

	Theory used	**Key Tenets of the theory relevant to this Study**	**Relevance of the Theory to this Study**	**Potential Limitations of the Theory in this Study and Way Forward**
1	Agency Theory(Berle & Means, 1932; Jensen & Meckling, 1976: Adams, (1994).	• Agents such as management possess more information about the firm than owners and the board, causing information asymmetry that could be used to maximize personal perquisites. • Need for cost efficient monitoring • Internal auditors used to represent the board and owners in monitoring • Presupposes internal auditors' independence from top management for internal auditor effectiveness	• Explains the rationale for internal auditors in organisations • Effectiveness of internal auditors is important. .	• Internal auditors are not independent of top management, as assumed by those using agency theory to explain internal auditing. • Upper echelon theory is used to explain the hypothesized CEOs's role in internal auditing.
2	**Upper-echelon theory** (Hambrick & Mason, 1984,	Behaviours and effectiveness in organisations reflect the preferences of CEOs who set a tone at the top.	This is used to explain how CEO openness is a tone at the top that could influence internal auditors' moral courage and the effectiveness of internal auditors.	Explains the influence of CEOs on internal auditors' moral courage and effectiveness.
3	Organisation support theory(Eisenberger *et al*., 1986)	Organisational support refers to the perceived organization's care about employees' opinions and well–being.	Explains beneficial employee's behaviours and outcomes in organisations Used in this study to explain the supportive board's effect on internal	• Necessary but insufficient in explaining mechanisms for organizational support effects

			auditors' moral courage and, ultimately, internal audit effectiveness in this study	• Social exchange theory complements organisational support.
4	Social exchange theory (Gouldner, 1960; Gergen, 1969; Cropanzano *et al*., 2017).	In a social exchange relationship, resources are shared through a reciprocal process, in which one party tends to return the good (or sometimes negative) conduct of the other party (Gouldner, 1960; Gergen, 1969; Cropanzano *et al*., 2017).	Explains the reciprocal effect of board audit committee support. Internal auditors are hypothesised to engage in courageous behaviour to reciprocate board support	Used to complement the organisational support theory
5	Power-Dependence theory of Organizational Responses to Whistle-Blowing (Near & Miceli, 1985; 1987; Miceli & Near, 1992; Casal & Zalkind, 1995).	Whistle-blowers experience better success and fewer negative consequences if they have the support of superiors (Near & Miceli, 1985; 1987; Miceli & Near, 1992; Casal & Zalkind, 1995).	The theory is used to explain the hypothesized mediating effect of internal auditors' moral courage in the board audit committee support-effectiveness of internal auditors' relationship.	Explains the mediating effect of moral courage
6	Interaction perspective of contingency theory (Donaldson, 2001; Drazin & Van de Ven, 1985).	Performance differentials in organisations can be explained by the interaction between organisational structure and context (Donaldson, 2001; Drazin & Van de Ven, 1985).	This study explains CEO openness as a contextual variable that potentially moderates the board audit committee support-internal auditor effectiveness relationship.	Explains the moderating effect of CEO openness

2.15 Conclusion

The review of the literature shows that much of the work on internal audit is based on the Agency Theory (Jensen & Meckling,1976) that tends to assume independence of the internal auditors from the top management and, therefore, with the hope that internal auditors are watchdogs of audit committees without fear or favor. However, the social reality of internal auditors is not adequately addressed. The fact that CEO characteristics could influence internal audit outputs has not been adequately empirically examined. Secondly, there is still limited empirical evidence of the role of the behaviors of executives. Thirdly existing studies look at governance stakeholders in isolation not taking into account the inter relationships. Fourthly studies are yet to examine the effects of internal auditors' ethical behaviors such as moral courage on internal audit effectiveness and when these moral courage behaviors matter for internal audit effectiveness. Fifthly, evidence of the role of the internal auditors' power is scant.

This study, therefore, aimed to contribute to filling this gap by examining the role of CEO openness and perceived board audit committee support on internal audit effectiveness. Additionally, the present study examines the potential of internal auditors' moral courage to mediate the effects of CEO openness and perceived board audit committee support on internal audit effectiveness and the potential for CEO openness to moderate the perceived board audit committee support-internal audit effectiveness path. Furthermore, the study fills gaps in the literature by examining the three key stakeholders; the audit committee, the Chief Executive Officer, and the internal audit executive in the same model.

2.16 The Hypothesised Conceptual Framework

Based on the theoretical and empirical review of the literature, the following hypothesized conceptual framework (Figure 2.1) and hypothesized measurement and structural models (Figure2.2) were developed to give a visual impression of hypothesised relationships, along with explanations of the hypothesised relationships. According to the conceptual framework (Figure 2.1), CEO openness and perceived board audit committee support are independent variables, internal auditors' moral courage is the mediating variable, and internal audit effectiveness is the dependent variable. Additionally, CEO openness is a hypothesised moderator in the relationship between board audit committee support and internal audit effectiveness.

It is hypothesised that a board's audit committee that supports internal auditors by caring about internal auditors' opinions and well-being motivates internal auditors' moral courage to express ethical issues due to internal auditors' feelings of protection and as a way of reciprocating the good deed by the board's audit committee. Moral courage behaviour ultimately positively influences internal audit effectiveness and the value added by internal auditors because of the internal auditors' vicarious power due to being supported by the board's audit committee. Additionally, it is hypothesised that CEOs who show openness to internal auditors' recommendations are positively associated with internal auditors' moral courage to speak out about ethical issues and, ultimately, internal audit effectiveness. Finally, the study hypothesises that the effect of a supportive board on internal audit effectiveness is higher with more open CEOs.

The hypothesised model shows the interaction effect of key stakeholders in governance, namely, the CEO and the board audit committee, on internal audit effectiveness by influencing the moral courage behaviour of another corporate governance stakeholder, the chief internal auditor.

By integrating CEO openness and audit committee support as predictors of internal audit effectiveness in the same model, the conceptual model seeks to contribute to the body of knowledge regarding how serving two masters, the board or the board's audit committee, and the CEO influence internal auditor effectiveness and how executive behaviour impact internal auditor effectiveness.

The central hypothesis of this study is that both CEO openness and board audit committee support positively influence internal auditors' effectiveness directly and through the mediating effect of internal auditors' moral courage, and that additionally CEO openness moderates the relationship between board audit committee support and internal auditors' effectiveness.

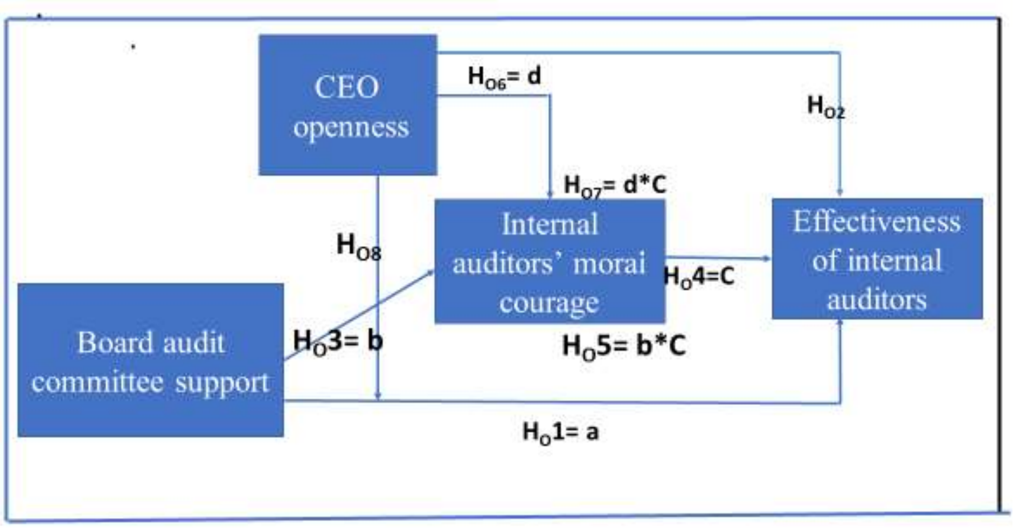

Figure 2.1: The Hypothesized Conceptual Framework

Source: A literature review (Casal & Zalkind, 1995; Cropanzano *et al., 2017*; Eisenberger *et al.*, 1990; Hambrick & Mason, 1984; Khelil *et al.*, 2018; Morrison, 2011).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter comprises the philosophical underpinnings and methodology of this study. Specifically, the methodology includes the research design, study population, sampling strategy, reliability and validity testing procedures, operationalization and measurement of variables, data sources and collection, data preparation, data analysis tools, ethical issues, and the hypothesised mathematical path model.

3.1 Research Philosophy

Research philosophy entails the ontological and epistemological stances of the study. Ontological assumptions are assumptions about the nature and structure of reality based on which knowledge is created. Epistemology addresses the central question of whether there are sufficient conditions for justifying knowledge claims (Rawnsley 1998). Ontological and epistemological assumptions are part of a researcher's paradigm. The positivist paradigm was adopted in this study. According to the positivist paradigm, reality is absolute and independent of the one who observes it. It is possible to divide reality into causes and effects, study relationships, and make statements that can be generalised across time and context (Hirschman 1986). Indeed, the focal study variables of CEO openness, audit committee support, internal auditors' moral courage behaviour, and internal audit effectiveness in this study are realities that exist independently of the researcher and can be divided into causes and effects. This study examines the relationships between these variables to explain the internal audit effectiveness differentials among internal auditors in formal financial institutions. This justifies the choice of the positivist paradigm.

3.2 Research Design

Research designs are strategies of inquiry employed to provide specific directions for procedures (Creswell, 2014). This study adopts an explanatory design. Explanatory studies test why events occur or test and build social theory (Lawrence, 2007). Since this study uses theory to explain internal audit effectiveness differentials, an explanatory design is appropriate. The study was cross-sectional in terms of time, as it collected data from internal auditors at a point in time. A cross-sectional design is less costly than a longitudinal design and is preferred in most social research (Lawrence, 2007).

3.3 Units of Inquiry and Units of Analysis

Internal auditors are both units of inquiry (respondents) and analysis.

Internal auditors are units of analysis because this study focused on explaining the effectiveness of internal auditors as the perceived value that is added by internal auditors.

Internal auditors were chosen as units of inquiry (respondents) because they are deemed to know the variables of this study best. The independent variable of board audit committee support is the perceptual variable, and it is the internal auditors who feel or do not feel the support. The moderator variable CEO openness to internal auditors' recommendations is another perceptual variable. It is the internal auditors who give suggestions to the CEO and can judge how the CEOs often react. Additionally, the available instrument for internal auditors' moral courage, which is a mediating variable and was previously used by Khelil *et al*. (2018), is a self-report instrument meant to be filled by the potential courageous actor. Lastly, regarding the dependent variable, internal audit effectiveness, the study deemed internal auditors more knowledgeable about the effectiveness of internal auditors. This is because internal auditors know the amount of suggestions for improvement that the internal auditors make, and the number of suggestions that are implemented due to internal auditors' follow-ups, and are therefore in a good position to judge the internal auditors' perceived value-addition.

3.4 Target Population

This study targeted internal auditors employed in formal financial institutions.

The formal financial institutions comprised commercial banks, credit institutions, microfinance deposit-taking institutions, insurance firms, development banks, capital market advisors and brokerage firms, and pension funds in Uganda. The numbers of financial institutions were twenty-five commercial banks in tier 1, five credit institutions in tier 11, four micro finance deposit-taking institutions in tier 111. 32 insurance firms, 3 development banks, 3 capital market advisors and brokerage firms and one pension fund. The total number of financial institutions from which internal auditors were selected was seventy-three.

Included financial institutions were those that had boards or board audit committees, chief executive officers (CEOs), and internal auditors. Tier iv institutions such as village SACCOS were not included because of the general absence of internal audit functions and boards or board audit committees. Additionally, foreign exchange bureaus, were also excluded for the same reason of a general absence of board audit committees and internal auditors.

The targeted respondents were internal auditors of financial institutions who interacted with boards or board audit committees, as this was the focus of this study. With the help of interactions with the heads of internal audit and human resource personnel, a population of 203 internal auditors was ascertained, and this was used to compile the sampling frame. The researcher used this sampling frame to determine the sample.

3.5 Sampling Design and Size

This study used stratified random sampling to select a sample of internal auditors in formal financial institutions.

Financial institution categories were treated as strata. Thus the strata comprised commercial banks, credit institutions, microfinance deposit-taking institutions, insurance firms, development banks, capital market advisors and brokerage firms, and pension funds in Uganda.

The study then ascertained the overall population size in all the financial institutions and the population size in each stratum. The overall population of internal auditors was 203. This was broken down as follows: 76 in commercial banks, 14 in credit institutions, 12 in microfinance deposit taking institutions, 90 in insurance firms, 5 in development banks, 3 in capital markets advisors and brokerage firms, 3 in the pension fund (Table 3.1).

Based on the population of 203 internal auditors, the study calculated the sample size using Yamane's (1973) formula as shown below.

Yamane's (1973) $formula: \; n = \frac{N}{1+N(e)^2}$

Where N in this study is the population size of internal auditors of 203, n is the sample size of internal auditors, and e is the type 1 error, which, in this study, is 0.05. The type 1 error of 0.05 was chosen in line with Chin's (2010) recommendation of a type 1 error of not more than 0.05 for behavioural studies. Using Yamane's (1973) formula, the computed target sample size was 135 internal auditors.

After calculating the overall sample size, the study calculated the sample size for each stratum by dividing the number of internal auditors in a stratum (Category of financial institution) by the total population of 203, and then multiplying this ratio by the sample size of 135. The targeted sample is summarized in Table 3.1.

Table 3.1 Population and Targeted Sample Size

Financial Institution category	**Population size of Internal auditors**	**Sample size of Internal Auditors**
Commercial Banks	76	51
Credit Institutions	14	9
Micro finance Deposit Taking Institutions	12	8
Insurance	90	60
Development Banks	5	3
Capital markets advisor/	3	2
brokerage firm		0
Pension Fund	3	2
Total	203	135

Source: Chief

After calculating the sample size for each stratum, the researcher randomly selected internal auditors from each stratum using random numbers generated in Microsoft Excel. Explanations of how this study utilised Microsoft Excel to generate random samples using an example of the choice of eight internal auditors from a subpopulation of twelve internal auditors in Microsoft Deposit-Taking Institutions (MDI) follow.

A Microsoft Excel worksheet was created with four columns, with the first three columns labelled as "internal auditors", "random numbers", "sample of internal auditors, "and "respondent randomly selected."

Numbers 1–12 were assigned to the 12 internal auditors in the MDIs on a hardcopy list. In column A of the Excel spreadsheet, the first cell A1 was labelled "Internal Auditor," and the numbers 1 to 12 were entered into cells A2 to A13, representing the internal auditors in the MDIs.

In column B of the Excel spreadsheet, cell B1 was labelled "Random Numbers," and the formula "=RAND ()" was input into cell B2 to generate a random number between 0 and 1 in the cell. This formula was dragged downward in Column B to generate a random number between 0 and 1 for each internal auditor.

Since the study was choosing a sample of 8 internal auditors from a subpopulation of 12 internal auditors, in column C of the Excel spreadsheet, the first cell C1 was labelled "Sample," and numbers from 1 to 8 were input in cells C2 to C9 to represent the sample of internal auditors in MDIs.

In column D of the Excel worksheet, the formula

=INDEX ($A$2: $A$13, MATCH (LARGE (($B$2: $B$13, C2), $B$2: $B$13, 0)) was input in cell D2. The formula identifies the internal auditor associated with the nth-largest random number, where n is the number in Column C. Therefore, column D showed the sample that was selected

The process was repeated for respondents in each of the other financial institution categories. The resulting random sample sheets are on appendices v to x

3.6 Data Type, Data Collection Method, and Instrument

3.6.1 Data Type

The study utilised primary data comprising responses from internal auditors to test the hypotheses.

3.6.2 Data Collection Instrument

The data were collected using questionnaires administered to the internal auditors. The questionnaire was divided into two parts: background information and information on study variables.

The background information began with a formal request to the respondents, who were assured that the information would be purely for academic purposes and that it would be kept confidential. This was meant to achieve two objectives: the first was to ensure that the respondents were as honest as possible, and the second was to ensure that respondents answered all questions.

The questionnaires were personally administered to internal auditors in financial institutions, and polite reminders were sent after intervals of approximately four to five days for the respondents who did not respond instantly.

The questionnaire was used in line with the positivism paradigm, which assumes that reality exists, is objective and independent of the researcher. By using the questionnaire, the research responses were freed from the judgement of the researcher, consistent with the positivist paradigm feature of objectivity. The questions on the study variables were closed-ended. Closed-ended questions elicit responses that do not deviate from the study objectives in a relatively short time and are easier to compare than open-ended ones (Saunders *et al*., 2007). The items of the survey were adapted from scales that had been developed and tested before, with modifications necessary to suit the context. The items measuring audit committee support, moral courage, and CEO openness were anchored on a 5-point Likert-type scale (5 = strongly agree to 1 = strongly disagree). A 5-point (or 7-point) scale is the best choice for studies that want to relate variables and estimate linear relations using correlations, regression, and structural equation modeling (Weijters *et al*., 2010) because they improve reliability and validity (Dawes, 2008). The research instrument was divided into two sections: Sections 1 and 11. Section 1 covers background information, and Section 11 provides information about the variables. The background information covered the individual characteristics of the respondents, such as gender, age, highest education level attained, and number of years worked. The second section covered closed-ended questions on the study variables anchored on a 5-point Likert-type scale.

3.7 Common Method Bias Mitigation and Detection

Common Method Bias arises when some variance may be attributable to measurement methods rather than constructs (Podsakoff *et al*., 2003). Podsakoff *et al*. (2003) identified the following sources of common method bias, and the present study was based on these sources to mitigate the common method bias problem before and during data collection.

3.7.1 Concurrent measurement of the independent and dependent variables

This may have created bias because the rater may have tried to be consistent when answering different questions. The present study mitigated this bias by reverse-coding some of the questions.

3.7.2 Common-Rater Bias

This is because of the gathering of data on all variables from the same respondent. The memory of answers to one question may affect the response to another. This bias was mitigated by reverse-coding some questions.

3.7.3 Item Complexity/Ambiguity

This was mitigated by rewording the questions after interviewing experts, avoiding double-barreled questions, technical jargon, and unfamiliar words.

3.7.4 Social Desirability Bias

Responses do not reflect respondents' true feelings but rather the respondents' tendency to respond in such a way as to achieve social acceptance. Reverse-coding some of the questions, assuring the respondents of confidentiality, and asking respondents to be truthful were used to reduce social desirability bias.

3.7.5 Preventing and Testing for Common Methods Bias

During data collection, this study attempted to mitigate common method bias by reverse-coding some of the questions and assuring respondents of confidentiality. Confidentiality assurance was aimed at making respondents feel comfortable filling out the questionnaires without any bias.

After the data collection, common method bias was assessed as part of the data preparation stage and the details are shown in the section of data preparation. Detailed of the testing are under the section for data analysis

3.8 Measurement of Variables

This study adapted the instruments used in previous studies.

3.8.1 Internal Auditors' Effectiveness

This is operationally defined as the value added by internal auditors (Lenz and Hahn, 2015). The measures of internal audit effectiveness were adapted from Arena and Azzone (2009) and Barišić and Tušek (2016). These studies measure the output of the internal auditors in terms of the percentage of internal audit recommendations that are implemented. In Barišić and Tušek's (2016) study, the questionnaire was anchored on a 5-point Likert scale, with 1 representing strongly disagree and 5 representing strongly agree. The internal audit effectiveness questionnaire has statements like "The internal audit in this firm, voices recommendations that have a major impact on business processes", and "The recommendations of the internal audit have a major impact on the improvement of the governing process". Although the Arena and Azzone (2009) study documented actual percentages, they are equivalent to Likert scales after conversion from percentages, similar to what was done in other studies (Nalukenge, 2020; Nyahas *et al*., 2018; Kamukama *et al*., 2011; Arena & Azzone, 2009).

3.8.2 Perceived Board Audit Committee Support

This is the internal auditor's perception of the extent to which the board audit committee values their contributions and cares about their well-being. It is derived from the definition of perceived supervisor support (PSS), which is also derived from the organisational support theory (Rhoades & Eisenberger, 2002), which views perceived organisational support (POS) as "employees' perception of the extent to which the organisation values employees' contributions and cares about employees' well-being" (Eisenberger *et al*., 1990, p. 51). This study adopted the eight-item Survey of Perceived Organisational Support (SPOS) instrument by Eisenberger *et al*. (1986), which has demonstrated high loadings in internal auditing studies such as Khelil *et al*. (2018). It has statements like, "My audit committee/board of directors strongly considers my goals and values", and "My audit committee is willing to help me when I need a favour." All items were anchored on a 5-point Likert-type scale.

The first perceived organisational support (POS) measurement instruments were developed by Eisenberger *et al*. (1986) and Eisenberger *et al*. (1990). The measurement instruments were subsequently tested for internal reliability to arrive at a short-form measurement instrument with eight items with high loadings (Rhoades & Eisenberger, 2002). The items are about the extent to which employees believe the supervisor cares about their goals, is available when needed, cares about their well-being, would forgive honest mistakes, would take advantage of them, would give a special favour when in need, shows very little concern, and cares about their opinion. Some of these items were reverse-coded. In internal auditing research, the items were adopted by Khelil *et al*. (2018). In a similar vein, the present study adopted the short-form 8-item perceived supervisor support" instrument with minor modifications to suit the context of internal auditing and replaced the word "supervisor' with the word "board audit committee".

3.8.3 Moral Courage of Internal auditors

Moral courage is a "willful, intentional act, executed after mindful deliberation, involving a substantial risk to the actor, primarily motivated to bring about a noble good or worthy end" (Rate, Clarke, Lindsay, & Sternberg, 2007, p. 95).

There are vital strides in measuring professional moral courage, which would help in explanatory studies. In its measurement, the debate is on whether measurement should be from the perspective of the one observing a courageous act, for example, a subordinate observing a superior, or from the perspective of the actors using their subjective experiences. General courage is viewed from the perspective of another observer, and personal courage is measured from the perspective of courageous actors (Pury *et al*., 2007). Hannah *et al*. (2011) developed an instrument to measure general courage.

Measuring courage from the perspective of an independent observer overcomes the risk of self-reporting bias. However, the personal courage instrument developed thus far is not applicable to organisational settings. The available instrument designed for organisational settings is on personal courage, as was used in Khelil *et al*. (2018). Additionally, considering the likelihood of hostility towards internal auditors in retaliation for reporting wrongdoing, an assessment of internal auditors' behaviour by other organisational actors may not necessarily be more objective than internal auditors. Therefore, this study adopted instruments to measure personal courage.

Sekerka and Bagozzi (2009) designed an instrument with five items: moral agency, multiple values that guide actors, an endurance of threats, going beyond compliance, and moral goals. The instrument has statements like, "I am the type who does not fail to do the right thing," "I am the type who uses a guiding set of principles from the organisation," and "When I encounter an ethical challenge, I take it on with moral action regardless of the negative impact it may pose." My coworkers would say that when I do my job, I do more than follow the regulations". Even though it has been used in a study of internal auditors' moral courage (Khelil *et al*., 2016), it is not appropriate for the current study that requires a process variable as a mediator because some of the statements operationalize courage as a trait; for example, a statement like "I am the type" shows a relatively stable characteristic.

Building on previous works by Sekerka and Bagozzi (2007), Hannah and Avolio (2010) developed a newer instrument with four items with statements like "I will always state my views about ethical issues to my supervisor" and "I will go against the group's decision whenever it violates my ethical standards." This instrument conceptualises moral courage as a process variable. It exhibited high levels of reliability and construct validity in subsequent studies (Hannah *et al*., 2013; Schaubroeck *et al*., 2012; Hannah and May, 2011; Khelil *et al*., 2018).

A four-item instrument created by Hannah and Avolio (2010) and subsequently used in internal auditing research by Khelil *et al*. (2018) was used in this study. The instrument has four items with statements like "I will confront my peers if they commit an unethical act; "I will confront my manager if he or she commits an unethical act;" "I will always state my views about ethical issues to my supervisors;" and "I will go against the group's decision whenever it violates my ethical standards".

3.8.4 CEO Openness

CEO openness is operationally defined as subordinates' perception that their CEO listens to them, is interested in their ideas, gives fair consideration to the ideas presented, and at least sometimes takes action to address the matter raised. This study deduces the definition and measures of CEO openness from those of leader openness used in previous studies (Ashford *et al.*, 1998; Detert and Burris, 2007; Grant *et al.*, 2011). Internal auditors were asked to assess their CEOs using five items anchored on a 5-point Likert scale (5 = "strongly agree," 1 = "strongly disagree"). Sample questions are: "Our CEO is open to new ideas," "Our CEO is receptive to suggestions," "Our CEO is interested in our ideas," "Our CEO has often rejected ideas" (reverse coded), and "Our CEO has often dismissed suggestions" (reverse coded).

3.8.5 Control Variables

Consistent with the guidelines of Hult *et al*. (2018) on control variable usage, this study used Gaussian copulas to ascertain whether it was necessary to use control variables. According to Hult *et al*. (2018), insignificant Gaussian copula coefficients (p-value > 0.05) imply that there is no endogeneity bias and that it is not necessary to use control variables.

This study complemented the results of the Gaussian Copulas using Ramsey's (1969) Regression Equation Specification Error Test (RESET) to ascertain whether the structural regression model is linear and free from omitted variable bias, a source of endogeneity bias.

Two multiple linear regression models were created using the Regression Equation Specification Error Test (RESET). The study variables were entered concurrently into Model 1, which was developed initially. Model 2 comprised study variables and additional variables in the form of both quadratic and cubic variables. Using hierarchical multiple linear regression, quadratic and cubic variables were created by modifying the unstandardized dependent variable scores and then inserting them. As linear regression was used, the null hypothesis for Model 1 was that the model was linear. Following the addition of both quadratic and cubic variables, an F change p-value greater than 0.05 indicates that the F change is not significant and that the model is linear. However, an F-change p-value of less than 0.05 with the addition of transformed variables in the form of quadratic and cubic variables is statistically significant, which indicates that the model is not linear.

Additionally, a non-significant F-change after adding the associated quadratic and cubic variables to Model 1 to form Model 2 would also imply that the model is free from omitted variable bias, and thus the model is robust.

Finally, the study complemented the Regression Equation Specification Error Test (RESET) for omitted variable bias using Gaussian copulas. Hult *et al*. (2018) recommended the Gaussian copula method for evaluating robustness. The Gaussian copula method controls for endogeneity by explicitly modelling the correlation between the endogenous latent variable and the error term with a Gaussian copula (Park and Gupta, 2012; Hult *et al*., 2018).

Using the Gaussian copula approach, this study developed three regression models in which the dependent variable, internal audit effectiveness, was regressed on each of the three possible endogenous independent constructs: CEO openness (Model 1), audit committee support (Model 2), and internal auditors' moral courage (Model 3). In addition, the study generated four regression models that account for all potential combinations of multiple endogenous variables: audit committee support and CEO openness (Model 4); audit committee support and internal auditors' moral courage (Model 5); CEO openness and internal auditors' moral courage (Model 6); and audit committee support, CEO openness, and internal auditors' moral courage (Model 7).

For each bi-variable regression model combination, a Gaussian Copula was computed for each predictor-dependent variable bivariate relationship. A p-value greater than 0.05 for a regression model with a copula indicates that the model with the copula is insignificant and that the independent variable is not endogenous, which suggests that control variables are not necessary for the model. This result suggests that the model is robust (Hult *et al*., 2018).

Table 3.2 Summary of Operationalization and Measurement of Variables

Variable name	**Definition**	**Operationalisation**	**Measurement**	**References**
Board audit committee support	audit committee's care about internal auditors' opinions and well-being	Self-report questionnaire assessing the extent of agreement with statements on measurement items	5-item Likert Scale ranging from 1 (strongly disagree) to 5 (Strongly agree	Khelil *et al.*,2018
CEO openness	The receptiveness of CEOs to ideas	Self-report questionnaire assessing the extent of agreement with statements on measurement items	5-item Likert Scale ranging from 1 (strongly disagree) to 5 (Strongly agree	Ashford *et al.*,1998; Detert and Burris, 2007; Grant *et al.*, 2011.
Internal auditors' moral courage	Internal auditors' determination to uphold moral values and expose possible misconduct, even when confronted with adversity or personal hardship,	Self-report questionnaire assessing the extent of agreement with statements on measurement items	5-item Likert Scale ranging from 1 (Very untrue of me) to 5 (Very true of me)	Khelil *et al.*,2018
internal auditor effectiveness	Internal auditors' value addition in terms of their contribution to strength of controls, managerial decision making , governance and business processes	Self-report questionnaire assessing the extent of agreement with statements on measurement items	5-item Likert Scale ranging from 1 (strongly disagree) to 5 (Strongly agree	Barišić and Tušek's (2016)

Source: Literature review

3.9 Data Collection

Primary data was collected from the internal auditors of the financial institutions

3.10 Data Entry and Analysis

3.10.1 Data entry

The collected data were entered and analysed using variance-based partial least squares structural equation modelling (PLS-SEM) with the SMART-PLS 4 software developed by Ringle *et al*. (2022).

Partial least squares structural equation modelling (PLS-SEM) and covariance-based structural equation modelling (CB-SEM) are two second-generation analysis tools that are superior to first-generation analysis tools, such as ordinary least squares regression analysis and factor analysis (Hair *et al*., 2017b). Partial least squares, however, is advantageous over both first-generation analyses and covariance-based structural equation modelling under certain circumstances, which is why it was chosen for this study.

PLS-SEM has an advantage over ordinary least squares (OLS) regression in that it can generate complex, robust models with multiple paths and indicators, even when the data do not satisfy parametric assumptions such as a normal distribution (Hair *et al*., 2017b).

In addition, empirical evidence indicates that while partial least squares and covariance-based structural equation modelling are likely to produce the same results with sample sizes of 250 or more, partial least squares produces superior results when sample sizes are less than 250 and/or the model has multiple indicators and paths. The ability of partial least squares to generate robust models, even with sample sizes of less than 250, is due to the capability of partial least squares structural equation modelling to build partial regressions for each path (Hair *et al*., 2017b). In addition, according to Hair *et al*. (2017b), partial least squares has the benefit of simultaneously computing reliability and validity measures, aggregating indicator variable scores to represent latent variables, and computing the model path coefficients using the computed latent variable scores. Consequently, this study utilised partial least squares structural modelling owing to its advantages of working with small sample sizes of less than 250 and complex models, since the sample size of this study is less than 250 internal auditors and its conceptual model is complex with a mediator and moderator.

3.10.2 Data analysis

Consistent with by Serem *et al*. (2013) suggestions on data analysis steps, this study's data analysis consisted of three steps: Step 1, data preparation; Step 2, data description; and Step 3, hypothesis testing. When using partial least squares, hypothesis testing begins with an assessment of the measurement model and ends with an assessment of the structural model (Hair *et al*., 2017b).Therefore, this study's four steps are data preparation, data description, measurement model assessment, and structural model assessment.

Step 1: Data preparation

The data preparation process included cleaning and screening. Data screening and cleaning involves examining the data for errors, missing data, and assumptions about distributions (Tabachnick & Fidell, 2014).

In this study, data preparation entailed checking for errors, missing data and common method bias.

A filled questionnaire was checked for completeness before data entry. Respondents who filled questionnaires but not to completion were politely requested to fill again to completion.

Questionnaires were numbered as questionnaire data were entered into a spreadsheet. Subsequently the data on the spreadsheet were compared with the data on the questionnaire to confirm that the information was matching

Afterwards, data on the spread sheet was checked for missing data and impermissible values such as a score above five or less than one, yet a Likert scale was used. This was done using frequencies in SPSS.

The goal of checking for missing data was to use mean replacement method to replace missing data. This method is appropriate if the percentage of missing data is less than 5% per indicator. If more than 5% is missing, the indicator should be removed from the data set.

Common method bias is the inflation or deflation of relationships due to a measurement method such as collecting data on all variables from the same respondent (Podsakoff *et al*., 2003). This study assessed the possibility of this study being affected by common method bias using Harman's Single Factor test whereby Exploratory factor analysis is done and if a single factor that accounts for a variance of at least 50% emerges, then the study is affected by common method bias (Fuller *et al*.,2016). Fuller *et al*. (2016) assert that the Harman single factor test is effective at detecting common method bias and this is why this study chose it.

Regarding assumptions, this study tested for normality and linearity, as part of structural model assessment and details of these tests are under the section of structural model assessment below.

Step 2: Data Description

Under data description, this study compiled the profile of respondents and the descriptive statistics for the study variables

The profile of respondents included age, gender, working experience, professional affiliation, and highest academic qualifications.

The descriptive statistics for the study variables of board audit committee support, CEO openness, internal auditors' moral courage and internal auditors' effectiveness included the mean and standard deviation. The mean was chosen because according to Field (2018), the mean summarises the data, and the standard deviation indicates how accurately the mean represents the data. Therefore, the mean was used to describe the respondent's extent of agreements or disagreements with statements in the questionnaire

Step 3: Measurement Model Assessment

This entailed an evaluation of the relationship between latent constructs and the constructs' measurement items. face validity, item loadings, construct reliability, convergent validity, and discriminant validity were evaluated.

Indicator Loadings

The factor loadings reveal the degree of association between the measurement items and the principal factors (Hair *et al*., 2016). According to Hair *et al*. (2019), a loading of at least 0.708 indicates that the construct explains 50 percent of the variance in the indicator; this loading is recommended. Indicators with loadings below 0.4 are eliminated entirely. Loadings between 0.4 and 0.7 are maintained if the extracted average variance for the construct is at least 0.5. (Hair *et al*., 2016). Using these guidelines, this study determined which indicators should be maintained and which should be eliminated.

Internal consistency reliability

The reliability of the questionnaire was tested. A measurement instrument is reliable if different attempts to measure under similar conditions yield the same results (Zikmund *et al*., 2010). Reliability is the measure of consistency.

Cronbach's alpha and composite reliability values were used to assess the constructs' internal consistency. The acceptable range for reliability levels is between 0.70 and 0.90, whereas 0.95 and above are unacceptable. In addition, Cronbach's alpha and composite reliability values should be presented together, because the real reliability value is likely to fall between Cronbach's alpha and composite reliability values (Hair *et al*., 2017). If the reliability coefficient is lower than 0.7, one of the items could negatively affect the reliability of the scale and may be removed (Hackett (Ed.), 2018). Two values were used to determine the internal consistency reliability of each construct.

Face Validity

Validity refers to the extent to which an instrument measures what it intends to measure. A valid instrument ensures that the collected data represent the phenomenon under investigation (Zikmund *et al*., 2010).

The measurement instrument has face validity if on the face of it, in the judgment of others, especially the scientific community, the definition, and method of measurement fit (Lawrence, 2014). The examination of face validity helped improve the length of the questionnaire, clarity of the statements used, and appropriateness of the ordering of words (Saunders *et al*., 2009).

Convergent Validity

Convergent validity is necessary for construct validity. Convergent validity implies that items that are theoretically hypothesized to measure one construct measure that construct (Campbell and Fiske 1959). Convergent validity exists if the items used to measure the same construct are highly correlated (Hair *et al*. 2010). Convergent validity was assessed according to Hair *et al*.'s (2010) guidelines. If results show an average variance extracted of 0.5 or higher and the construct reliability is 0.7 or higher, then there is convergent validity. This study checked for an average variance extracted of at least 0.5 and reliability of at least 0.7 to confirm that the study's measurement model demonstrates acceptable convergent validity.

Discriminant Validity

Discriminant validity refers to how empirically distinct the constructs in a structural model are from other constructs in the same model (Hair *et al*. 2019). This study used cross-loadings and the Fornell-Larcker criterion to assess discriminant validity.

Discriminant Validity Using the Fornell-Larcker Criterion

Using the Fornell-Larcker criterion, the square root of the average variance extracted (AVE) for a construct should be higher than the construct's correlation with other constructs (Fornell & Larcker, 1981) to confirm that there is discriminant validity.

Discriminant Validity Using Cross-Loadings

On the other hand, using the cross-loading criterion, discriminant validity is met when the indicator items for a construct load onto the parent construct more than they load onto any other construct in the model (Hair *et al*., 2017b). After the measurement model satisfied reliability and validity requirements, the structural model was evaluated.

Step 4: Structural Model Assessment

In partial least squares structural equation modeling (PLS-SEM), the structural model, also known as the inner model, depicts the association between latent variables (Hair *et al*., 2017b). Testing for endogeneity bias, multicollinearity, coefficient of determination (R^2), predictive relevance, (Q^2), structural model linearity, and the significance of path coefficients was part of the structural model assessment.

Endogeneity bias

This study evaluates the robustness of the model in terms of its lack of endogeneity bias. Endogeneity bias occurs when a predictor variable (whether classified as an independent variable, mediator, or moderator) is correlated with the error term of the outcome variable (Antonakis *et al*., 2010; Li *et al*., 2021). Endogeneity bias assessment in this study entailed ascertaining if board audit committee support, CEO openness, and internal auditors' moral courage, which are the hypothesised predictors of internal audit effectiveness, are not correlated with the error term of internal audit effectiveness to confirm model stability.

Hult *et al*. (2018) recommended using the Gaussian Copulas method to check for endogeneity bias. A pre-requisite for applying the Gaussian copulas approach to test for endogeneity bias is confirming, using the Kolmogorov-Smirnov test with Lilliefors correction, that potential endogenous predictor variables are non-normally distributed (Sarstedt & Mooi, 2014; Hult *et al*., 2018). The Kolmogorov-Smirnov test with Lilliefors adjustment examined the null hypothesis that the predictor variables do not violate the assumption of normality, suggesting that a p-value less than 0.05 indicates that the assumption of normality has been violated. A violation of the normality assumption implies that the Gaussian copula method can be applied (Hult *et al*., 2018).

Thus, the results of the Kolmogorov-Smirnov Lilliefors significance correction test indicate that a prerequisite for testing for endogeneity bias using the Gaussian copula approach is met.

In testing for endogeneity bias using the Gaussian copula method, the Gaussian copula method controls for endogeneity by explicitly modelling the correlation between the endogenous latent variable and the error term with a Gaussian copula (Park & Gupta, 2012; Hult *et al*., 2018).

Using the Gaussian copulas approach, the study developed three regression models in which the dependent variable, internal audit effectiveness, was regressed on each of the three possible endogenous independent constructs: CEO openness (model 1), audit committee support (model 2), and internal auditors' moral courage (model 3). In addition, the study generated four regression models that account for all potential combinations of multiple endogenous variables: audit committee support and CEO openness (model 4), audit committee support and internal auditors' moral courage (model 5), CEO openness and internal auditors' moral courage (model 6), and audit committee support, CEO openness, and internal auditors' moral courage (model 7).

In each of the bi-variable regression model combinations, a Gaussian Copula was computed for each predictor-dependent variable bivariate relationship. A p-value greater than 0.05 for a regression model with a copula indicates that the model with the copula is insignificant and that the independent variable is not endogenous (Hult *et al*., 2018).

Multicollinearity

Multicollinearity occurs when the predictor variables are highly correlated. Correlated independent variables share predictive power, making it difficult to evaluate the relative contribution of each independent variable to the variance of the dependent variable (Ho, 2014). High multi collinearity also inflates estimate standard errors, which in turn inflates regression weight confidence intervals, making it difficult to determine if the regression weights are significantly different from zero (Hair *et al*., 2014). Variance inflation factors were used to assess multicollinearity in this study. Variance inflation factors show the extent to which multicollinearity overstates the standard error of an estimate (Hair *et al*., 2014). If the variance inflation factor is equal to or greater than five, multicollinearity is likely to be a serious issue. On the other hand, if the variance inflation factor is between 3 and 5, collinearity issues are possible. An ideal multicollinearity situation occurs when the variance inflation factor is less than 3 (Hair *et al*., 2019). Multicollinearity was assessed using the latent variable scores with a view to eliminating constructs and merging independent predictors to form a single construct or higher-order constructs if high multicollinearity was detected, or maintaining the constructs if multicollinearity was low, in line with the guidelines of Hair *et al*. (2017b).

Coefficient of Determination (R^2)

The coefficient of determination is the percentage of variation in an endogenous construct that its predictor constructs explain (Hair *et al., 2017b*). One of the R^2 values in this study is the percentage of the variation in internal audit effectiveness that is attributable to perceived board audit committee support, CEO openness, and internal auditors' moral courage. The other R^2 value is the percentage of the variation in internal auditors' moral courage that is attributable to perceived board audit committee support and CEO openness. R^2 values of 0.25, 0.50, and 0.75 are weak, moderate, and substantial, respectively (Hair *et al*., 2019).

Predictive Relevance (Q^2)

The predictive relevance (Q^2) value assesses the model's accuracy in prediction (Hair *et al*., 2019; Stone, 1974; Geisser, 1974). The relevant values of Q^2 for a certain endogenous construct exceeded zero. Predictive relevance levels exceeding 0, 0.25, and 0.5 are correspondingly characterised as small, medium, and large (Hair *et al*., 2019). As a result, the goal of this analysis in this study was to ascertain if the Q^2 was greater than zero to confirm that the model can predict accurately.

Structural Model Linearity

Hair *et al*. (2019) recommend the use of Ramsey's (1969) Regression Equation Specification Error Test (RESET).

Ramsey's (1969) Regression Equation Specification Error Test (RESET) was used to ascertain if the structural regression model is linear and free from omitted variable bias. The linearity of the structural model was tested by simulating nonlinear relationships.

Two models of multiple linear regression were created using the Regression Equation Specification Error Test (RESET). The study variables were entered concurrently into Model 1, which was developed first. Model 2 comprises the study variables as well as additional variables in the form of both quadratic and cubic variables. Using hierarchical multiple linear regression, the quadratic and cubic variables were created by modifying the unstandardized dependent variable scores and then inserted. Because linear regression was utilised, the null hypothesis for Model 1 was that the model was linear. Following the addition of both quadratic and cubic variables, an F change p-value greater than 0.05 would indicate that the F change is not significant and that the model is linear. However, an F-change p-value of less than 0.05 with the addition of transformed variables in the form of quadratic and cubic variables is statistically significant, indicating that the model is not linear.

In assessing the absence of the omitted variable bias using Ramsey's (1969) Regression Equation Specification Error Test (RESET), a non-significant F change after adding the created quadratic and cubic variables to the linear regression model with the study variables of board audit committee support, CEO openness, and internal auditors' moral courage would indicate that there is no omitted variable bias.

Assessment of the Significance of Path Coefficients.

This study used empirical t-values and p-values to assess the significance of the path coefficients. Using t-values, an empirical t-value for a path was compared with a critical value, and where the t-value in absolute terms was higher than the critical value, the path coefficient was significant. The tests in this study are two-tailed because of the non-directional nature of null hypotheses, and therefore, at a significance level of 0.05, the critical value is 1.96. If the t-value is greater than 1.96, the path coefficient is significant. If the p-value is lower than 0.05, the path coefficient is significant. P-values and t-values were supplemented with bias-corrected confidence intervals generated through bootstrapping. An interval without a zero indicates the beta weight is significantly different from zero.

3.10.3 Testing for Mediation

Using the bootstrapping method, this study examined how the moral courage of internal auditors affects the relationships between the support of the board audit committee and the effectiveness of the internal auditors and between the openness of the CEO and the effectiveness of the internal audit.

Shrout and Bolger (2002) support the bootstrapping method and state that it overcomes problems with Baron and Kenny's (1986) "causal steps-based mediation approach. When Baron and Kenny's (1986) causal steps approach is combined with Sobel's (1982) test, four conditions must be met: first, the independent variable must significantly account for the mediator variable; second, the independent variable must significantly account for the variation in the dependent variable; third, the mediator must significantly account for the variation in the dependent variable when the independent variable is controlled for; and fourth, the effect of the independent variable on the dependent variable is significantly reduced when the mediator is introduced. Using the Sobel test, we ascertain whether the indirect effect was significantly different from zero. However, several studies (Shrout & Bolger, 2002; Preacher & Hayes, 2004; Preacher & Hayes, 2008; Zhao *et al*., 2010) have questioned the causal stages approach, which is often used in the Sobel test. First, Zhao *et al*. (2010) state that a mediated model does not always have a direct effect. Second, the p-value from Baron and Kenny's (1986) causal step method with the Sobel test is based on the idea that the sampling distribution of the indirect effect follows a normal distribution and uses large samples. However, the Sobel test is unsuitable for small samples (Shrout & Bolger, 2002). When sample sizes range from small to moderate (20–80), the bootstrapping method is recommended to determine the significance of the mediation (Shrout & Bolger, 2002).

This study used bootstrapping to obtain p-values and t-values to measure the significance of the indirect effect. Zhao *et al*. (2010) say that the following conditions must be met to claim mediation: first, the independent variable must account for variation in the mediator variable; second, the mediator variable must account for variation in the dependent variable while controlling for the independent variable; and third, the indirect path (independent variable—mediator variable—dependent variable) must be statistically significant. Zhao *et al*. (2010) further say that a mediation analysis usually leads to no mediation, complementary mediation, competitive mediation, or indirect-only mediation. There was no mediating effect if the indirect path was insignificant. Complementary mediation exists if both the direct and indirect paths are significant and both are positive or negative. Competitive mediation exists if both the direct and indirect paths are significant, but the signs of the direct and indirect paths are different. In addition, unlike the causal steps technique, which constructs many regression equations and evaluates the relevance of parameters in stages, the structural equation modelling approach evaluates all the paths simultaneously.

Consequently, our analysis evaluated all paths simultaneously. The first stage of this investigation was to ascertain whether a mediating effect existed by determining whether the indirect path was significant, regardless of the significance of the direct path, using the mediation analysis principles set forth by Zhao *et al*. (2010). After confirming the existence of the mediating effect, the study examined the significance and signs of both the direct and indirect paths to determine whether the mediation was competitive, complementary, or only indirect. Moreover, according to Zhao *et al*. (2010), each of the three types of mediation demonstrates that the hypothesised mediating effect is consistent with the theoretical framework and is supported by the results. However, while complementary and competitive mediation demonstrate that the theoretical framework is incomplete and that some mediators may be excluded from the direct path, indirect-only mediation demonstrates that the result is consistent with the theoretical framework and that mediators are unlikely to have been left out.

3.10.4 Testing for Moderation

Moderation occurs when the slope of the association between a regressor and criterion variable differs across the levels of a third variable (Baron & Kenny, 1986; James &

Brett, 1984; Holland *et al*., 2017). Thus, this study checked to ascertain if the relationship between board audit committee support and internal auditor effectiveness is moderated by CEO openness, if the slope of the board audit committee support-internal auditor effectiveness relationship varies according to the values of CEO openness.

This study checked to ensure that conditions for moderation were satisfied. These conditions are: absence of multicollinearity between predictor variables and the moderating variable (Cohen *et al*,.2003; Aiken & West, 1991), absence of measurement errors (Aiken & West, 1991), and a theoretical justification for moderation.

To prevent multicollinearity between the predictor variables that were used to create an interaction term, this study created an interaction term using the orthogonalizing method as recommended by Hair *et al*. (2017b). Hair *et al*. (2017b) recommend the orthogonalizing method because the resulting product term does not differ from the exogenous or moderator constructs. Consequently, the resulting interaction term does not result in multi collinearity. The CEO openness-board audit committee support interaction term was interpreted using the beta coefficient, t-statistics, p-values, and confidence intervals. Furthermore, after data collection, this study assessed the extent of multicollinearity to ascertain if the variance inflation factor is less than 3, as recommended by Hair *et al*. (2019).

To confirm the absence of measurement errors, this study assessed the reliability and validity of the research instruments before computing the interaction term.

To interpret the moderation results, this study used a simple slope diagram. The simple slope diagram shows the slopes of the relationship between perceived board audit committee support and internal audit effectiveness at different levels of CEO openness, namely, at a high level of CEO openness (+1 standard deviation), at a low level of CEO openness (-1 standard deviation), and at the mean of CEO openness. If the three slopes of the board audit committee support-internal audit effectiveness relationship at the different levels of CEO openness are parallel, it means there is no moderation. Otherwise, changes in the slopes at different levels of CEO openness imply moderation.

3.11 Model Specification

Path analysis was utilised to specify the mathematical model for this study, adhering to the recommendations of Edwards and Lambert (2007) for integrating mediation and moderation into path analysis. Path analysis uses a regression equation as a path.

The first regression equation (Model 1) is for internal audit effectiveness as an outcome variable. It regresses the dependent variable (internal audit effectiveness) on the independent variables (CEO openness and board audit committee support), the mediator variable (internal auditors' moral courage), and the interaction term (CEO openness and perceived board audit committee support). Figure 3.1 below is a statistical diagram for Model 1 corresponding to mathematical model 1

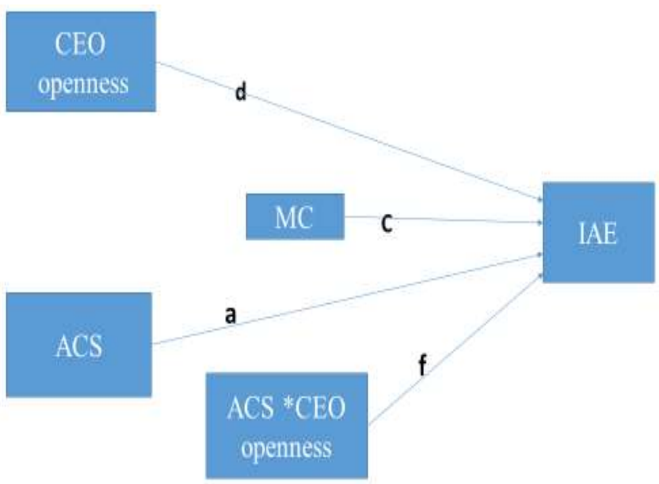

Figure 3.1 Path statistical diagram corresponding to mathematical model 1

The second equation was for the mediator variable an outcome variable (Model 2). It was formulated by regressing the mediator variable (internal auditors' moral courage on the two independent variables (CEO openness and perceived board audit committee support). Figure 3.2 below is a statistical diagram for Model 2 corresponding to mathematical model 2.

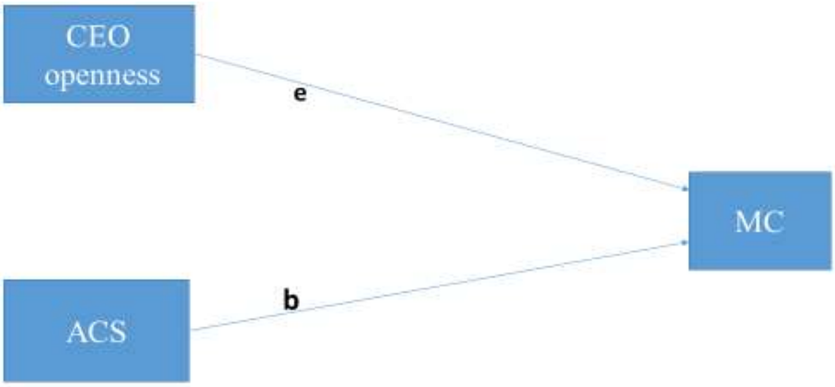

Figure 3.2 Path statistical diagram corresponding to mathematical model 2

The second equation (Model 2) was added to the first equation (Model 1) using the substitution method as is explained below. By adding the partial least \squares regression equation for the mediator variable as an outcome (Model 2) to the first regression equation (Model 1), we obtained a short form of the multiple regression equation. The short-form regression equation is Model 3. The short-form regression equation specifies the direct, indirect, and total effects (Edwards & Lambert, 2007).

Below is the derivation of the short-form regression model used in this study.

Mathematical Model 1: Internal Audit Effectiveness Model

Internal audit effectiveness = a (board audit committee support) + c (internal auditors' moral courage) + d (CEO openness) + f (CEO openness * board audit committee support) …………………………………………………………………..(i)

Mathematical Model 2: Internal Auditors' Moral Courage Model

Internal auditors' moral courage = b (board audit committee support) + e (CEO openness)...(ii)

Model 3: Short-Form Internal Audit Effectiveness Mathematical Model

The internal auditors' moral courage model (Equation ii) was substituted into the internal audit effectiveness model (Equation i) to obtain the shortened internal audit effectiveness model. This was done based on Edwards and Lambert's (2007) model specification guidelines for path modeling, which combines mediation and moderation.

Internal audit effectiveness = a (board audit committee support) + c[b (board audit committee support) + e (CEO openness)] + d (CEO openness) + f (CEO openness * board audit committee support).

Collecting like terms

Internal audit effectiveness = [a + c*b] board audit committee support + [e*c+ d]CEO openness + [f]CEO openness * board audit committee support.

Where;

a is the beta coefficient of the direct effect of board audit committee support on internal audit effectiveness.

b is the beta coefficient of the relationship between board audit committee support and internal auditors' moral courage

c is the beta coefficient of the relationship between internal auditors' moral courage and internal audit effectiveness.

b*c is the beta coefficient of the mediating effect of internal auditors' moral courage in the relationship between board audit committee support and internal audit effectiveness

d is the beta coefficient of the direct effect of CEO openness on internal audit effectiveness.

e is the beta coefficient of the effect of CEO openness on internal auditor moral courage.

e*c is the beta coefficient of the indirect effect of CEO openness on internal audit effectiveness through internal auditors' moral courage.

f is the coefficient of the moderating effect of CEO openness on the relationship between board audit committee support and internal audit effectiveness.

3.12 Ethical Considerations

Ethics is the behavioural standard that differentiates right from wrong or good from evil (Resnik 2018).

The significance of maintaining a high level of ethical conduct in research is the opportunity to collect and present truthful data while minimising harm to respondents and other third parties. However, because ethical codes are not universal, distinguishing between right and wrong behaviours is not always straightforward (Shamoo & Resnik, 2015). Despite the limited guidance on a universal standard, there is documentation of conduct that can be classified as unethical in various contexts.

Lawrence (2007) and Shamoo and Resnik (2015) detailed some of the unethical behaviours that researchers should avoid, such as plagiarising by failing to cite all sources; avoiding any form of fraud, such as faking the data that have been collected or even forging results when data have not been collected; or any other form of fraud; and causing physical or psychological harm to the respondents, such as reporting the respondents' opinions to the supervisors against the respondents' wishes. As ethical dilemmas can be situational and unanticipated, this list may not be exhaustive.

All unethical behaviours were managed by upholding the highest level of ethical conduct possible. For instance, the researcher obtained informed consent from each respondent before they took part in the study. This involved providing them with all necessary information about the research's objectives, methods, risks, and benefits, enabling them to make an informed decision about participation.

Furthermore, the researcher preserved secrecy and anonymity. This involved safeguarding respondents' personal information and ensuring that responses could not be linked back to the respondents directly.

Additionally, the researcher treated respondents with dignity and respect at all times. This involved being sensitive to social, cultural, and personal differences and refraining from using any form of manipulation. For example, when some respondents showed they did not want to be put under pressure to respond, the researcher accepted that and made respondents take their time.

Other considerations included being truthful at all times, assuring the respondents of confidentiality, keeping the information confidential, not invading the respondents' privacy, not revealing the respondents' identities, accurately citing all the works used in accordance with the APA format, not receiving funding from the institutions that were surveyed and also ensuring informed consent. The researcher told respondents who felt uncomfortable participating in the study to not participate

Lastly, the study's ethics were managed with a letter of introduction from Moi University and a letter of ethical clearance from the research ethics committee representing the Uganda National Council of Science and Technology.

3.13 Limitations of the Study

Like any other study, this one has some limitations.

First the study was purely quantitative and consistent with the positivist paradigm. This study's reliance on a quantitative approach overlooked the benefits of incorporating qualitative data. Qualitative data would have provided valuable insights into the individual experiences, perspectives, and voices of participants, which were overlooked by this quantitative study that focused on aggregate-level analyses and statistical patterns.

Second, it was difficult to reach some of the respondents. This is because some of the respondents were working from home following changes in the workplace due to the COVID-19 pandemic. This may be one of the reasons for a response rate of less than 100%. Nevertheless, the researcher managed to obtain more than the minimum number of responses, which was ideal for the required statistical power.

Third, the study examined only two behaviours: CEO openness and internal auditors' 'moral courage. Several behaviours could affect internal auditor effectiveness but are yet to be empirically examined. Against the background that the direct effect of perceived board audit committee support on internal audit effectiveness is insignificant, yet the total effect is positive and significant, it means there could be mediators and moderators that could explain the perceived board audit committee support-internal audit effectiveness relationship but are yet to be examined. Nevertheless, the present study is a good starting point for increasing the understanding of executive behaviours that affect internal audit effectiveness.

Fourth, the study was conducted in Uganda. The results may be generalized to other countries with caution because of differences in cultures, laws, and regulations which could have an effect on internal auditor effectiveness.

Fifth, the research design of this study was cross-sectional. The limitation of cross-sectional designs is that they capture views only at a point in time, yet views can change. Future studies could conduct longitudinal studies to observe the behaviour of variables over time.

Despite these limitations, the present study makes important contributions to theory, practice, and policy.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

This chapter covers the analysis, presentation, and interpretation of the results compiled using partial least squares structural equation modelling (PLS-SEM) using Ringle *et al*.'s (2022) SmartPLS4 software and the Statistical Package for the Social Sciences (SPSS) software. This chapter presents the response rate, data preparation, screening, profiles of respondents, descriptive statistics for study variables, measurement model evaluation, structural model evaluation, hypothesis testing results, and discussion of the findings. The presentation of the results was guided by the partial least squares reporting criteria (Hair *et al*., 2019).

4.1 Response Rate

Questionnaires were administered to 135 internal auditors working in formal financial institutions. However, only 128 internal auditors responded. This resulted in a response rate of 94.5%. The 94.5% response rate is higher than the ideal minimum response rate of 50% recommended by Mellahi and Harris (2016) in business and management research. The response rate results are summarized in Table 4.1.

Table 4.1: Response Rate

Targeted respondents	Number that responded	Response Rate
135	128	94.5 %

Source Research data (2022)

4.2 Data Preparation and Screening

This stage involved data cleaning and screening in preparation for further analysis. In particular, data screening, and cleaning entailed examining the data for errors, missing values, and common method bias.

4.2.1 Errors and Missing Value Analysis

Although the study put in place measures to mitigate errors and missing values, it still checked to ascertain whether there were no significant errors or missing values after data entry.

At the data collection stage, the researcher assured the respondents of complete anonymity and requested that they fill the questionnaires honestly to ensure completeness. Questionnaires that were picked up from respondents were checked for errors or missing values. If some questionnaires were incomplete, the respondents were requested to refill them and ensure their completeness.

Questionnaire data were eventually entered into a spreadsheet, and each questionnaire was numbered as the data were entered. The data that were entered onto a spreadsheet were compared with the data on the filled questionnaire to ensure that there was matching information.

The study further checked for missing data using frequencies in SPSS. This was done with a view to using the mean replacement method if the percentage of missing data was less than 5% per indicator or removing an indicator if the missing percentage was above 5%, consistent with the recommendations of Hair *et al*. (2017b).

Additionally, the study used descriptive statistics to ascertain if the spreadsheet had impermissible figures, such as a figure less than one or above five, yet a 5-point Likert scale was used. This was done by computing the lowest and highest scores by respondent for each item.

The results in appendix xi show that the results were free of missing values and that the lowest and highest scores were 1 and 5, respectively, implying that there were no impermissible values.

4.2.2 Common Methods Bias Analysis

Since all the data on all the variables came from a single respondent, an internal auditor, it was important to prevent and detect the presence of common method bias.

A common method bias is the inflation or underestimation of relationships due to a measurement method, such as collecting all data on predictor and outcome variables from a single respondent (Podsakoff *et al*., 2003).

At the data collection stage, this study attempted to mitigate common method bias by reverse-coding questions and requesting that respondents be honest when answering questions with assurances that the collected data would be kept confidential.

After collecting the data, the study used the Harman single-factor test, which Fuller *et al*. (2016) assert is very good at revealing significant common method bias. Exploratory factor analysis (EFA) was done with the Harman single-factor test to ascertain if all of the structural model's constructs' indicators could be grouped into a single factor. If no single factor explained at least 50% of the variance in the measurement items, then there was no common method bias.

Table 4.2 shows that the total variance explained was only 40.387%, which is less than the threshold of 50%. This means that no single factor explained at least 50% of the variance in measurement items. In conclusion, the common method bias did not affect the results of this study.

Table 4.2: Common-Methods Bias Assessment Using Harman's Single Factor Test

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.662	42.647	42.647	10.097	40.387	40.387
2	2.486	9.946	52.592			
3	1.977	7.907	60.499			
4	1.341	5.366	65.865			
5	1.177	4.706	70.571			
6	0.882	3.529	74.100			
7	0.866	3.464	77.565			
8	0.750	3.001	80.565			
9	0.722	2.889	83.454			
10	0.540	2.162	85.616			
11	0.491	1.964	87.580			
12	0.450	1.799	89.380			
13	0.419	1.677	91.056			
14	0.360	1.441	92.497			
15	0.319	1.278	93.775			
16	0.289	1.156	94.931			
17	0.243	0.971	95.901			
18	0.228	0.913	96.814			
19	0.170	0.681	97.496			
20	0.164	0.658	98.154			
21	0.134	0.536	98.690			
22	0.103	0.410	99.100			
23	0.092	0.368	99.468			
24	0.077	0.309	99.777			
25	0.056	0.223	100.000			

Extraction Method: Principal Axis Factoring.
Source: Research data (2022)

4.3 Profile of Participating Internal Auditors

Internal auditors were the units of analysis and inquiry. This study assessed the profiles of the respondents in the sample of 128 participating internal auditors in terms of age, gender, working experience, professional affiliation, and highest academic qualification; the results are summarised in Table 4.3.

According to the results in Table 4.3, the majority of the respondents (75%) were in the age category of 29–44. A minority of respondents (9.4%) were in the age category of 45–52. 15.6% were under 29 years of age. None of the respondents was over 52 years of age. Generally, the age distribution shows age diversity, which could have enabled the selection of diverse perspectives on internal audit effectiveness.

Generally, a large percentage of internal auditors (84.4%) were aged 29 years and above. This suggests maturity among internal auditors in understanding the issues under study.

Most internal auditors (51.6%) had attained a working experience of 10–18 years. A minority (10.9%) had attained a working experience of 19 years or more. Only 37% had less than 9 years of work experience. These results suggest that internal auditors generally stay long enough to comprehend their contributions to their organisations.

The majority of the respondents were male (70.3%), and a minority were female (29.7%). This shows that internal auditing positions in financial institutions were male-dominated.

The Majority (81.3%) were members of professional accounting bodies, such as Certified Public Accountants of Uganda (CPA-U), while the minority were not yet members of any professional accounting body. The results suggest that many internal auditors in formal financial institutions have embraced affiliation with professional accounting bodies. This affiliation may have improved internal auditors' ability to perform work. Additionally, Professional affiliation could have improved the comprehension of the study questions.

In terms of the highest academic qualifications, the results show that internal auditors in financial institutions have gone beyond certificate and undergraduate diploma qualifications, even though certificate and diploma programmes are offered in the country. Most internal auditors (50.8%) attained a bachelor's degree, which was the lowest qualification. The results also show that internal auditors are improving their knowledge, as 13.3% had attained master's degrees and 35.9% had attained post-graduate diplomas. This is evidence of internal auditors' willingness to continuously learn, suggesting that internal auditors have adequate knowledge to do their work and to respond to research questions.

Table 4.3: Profile of Internal Auditors

Factor	Category	Frequency	Percentage
Age group	Below 29 years	20	15.6
	29-36 years	48	37.5
	37-44 years	48	37.5
	45-52 years	12	9.4
	Above 52 years		
	Total	128	100.0
Gender	Male	90	70.3
	Female	38	29.7
	Total	128	100.0
Working experience	Below 9 years	48	37.5
	10-18 years	66	51.6
	19-27 years	14	10.9
	28-36	0	0.0
	Over 36	0	0.0
	Total	128	100.0
Professional affiliation e.g. Chartered Professional accountants(CPA), Institute of Internal Auditors(IIA), etc.	Member of Professional body e.g. CPA	104	81.3
	Non-member of Professional body	24	18.8
	Total	128	100.0
Highest Academic qualification	Certificate	0	0.0
	Undergraduate diploma	0	0.0
	Bachelor's degree	65	50.8
	Master's degree	17	13.3
	Post graduate diploma	46	35.9
	Total	128	100.0

Source: Research data (2022)

4.4 Descriptive Statistics for Study Variables

This study used descriptive statistics to examine the latent constructs of board audit committee support, CEO openness, internal auditors' moral courage, and internal auditors' effectiveness, as well as the variables that measure the latent constructs.

The descriptive statistics used to describe the study variables were the mean and standard deviation. The mean is a summary of the data, but the standard deviation reveals how closely the mean reflects the data (Field, 2018). Low standard deviation values relative to the mean imply that scores are generally close to the mean, and vice versa (Field, 2009).

4.4.1 Descriptive Statistics for Board Audit Committee Support

The latent construct of board audit committee support was measured using 10 items. For the ease of analysing the data, each item was assigned a code beginning with ACS," and a 5-point Likert scale was used. Items coded as AC 5 ("If given the opportunity, my audit committee or board of directors would take advantage of me") and AC 7 ("My audit committee or board of directors shows very little concern for me") were reverse coded, while the rest were positively worded. The descriptive results are summarised in Table 4.4.

The results in Table 4.4 show that positively worded items (ACS1, ACS2, ACS3, ACS4, ACS8, ACS9, and ACS10) had means of over 3, which is the midpoint of a 5-point Likert scale that was used. The means above the midpoint for the positively worded statements in the questionnaire suggest a general agreement among internal auditors that the boards of directors or audit committees consider internal auditors' goals, help internal auditors who have a problem, care about internal auditors' well-being, forgive internal auditors who make honest mistakes, care about internal auditors' opinions, and protect internal auditors against retaliation by coworkers and top management.

Only one positively worded item coded as AC6 with the statement "my audit committee/board of directors is willing to help me if I need a special favour "had a mean of 2.96, which is lower than 3, the midpoint of a 5-point Likert scale. This result shows that, in general, internal auditors disagree with the statement that boards of directors or audit committees are willing to give special favours to internal auditors.

The results of negatively worded statements coded as AC5 and AC7 had means of 3.76 and 3.88, respectively, which are above the midpoint of the 5-point Likert scale that was used. This shows internal auditors' general disagreement that boards of directors can take advantage of internal auditors or show little concern about auditors.

For each of the ten measurement items, the standard deviation was lower than the mean. A small standard deviation relative to the mean indicates that the scores are near the mean and vice versa (Field, 2009), implying that the mean represents the data well.

Overall, based on the mean, the highest agreement is on item AC1, "My audit committee/board of directors strongly considers my goals and values" (Mean 3.91, standard deviation 1.043), and the highest disagreement is on item AC6, "My audit committee/board of directors is willing to help me if I need a special favour" (Mean 2.96, standard deviation 1.043).

Generally, apart from a general disagreement on item AC6 that boards of directors or audit committees of boards give special favour, the results of positively and negatively worded items are consistent, since in both cases the means are above 3, suggesting a general agreement that boards support internal auditors. This consistency also suggests that respondents could have answered the questions with honesty, which could have mitigated bias.

Table 4.4: Descriptive Statistics for Board Audit Committee Support Measurement Items

Item Code	Item	N	Min	Max	Mean	Std. Dev
ACS1	My audit committee/board of directors strongly considers my goals and values	128	1	5	3.91	1.043
ACS2	Help is available from my Audit Committee/ board of directors when I have a problem	128	1	5	3.93	0.853
ACS3	My audit committee/board of Directors really cares about my well-being	128	1	5	3.58	0.961
ACS4	My audit committee/board of directors would forgive an honest mistake on my part an honest mistake on my part.	128	1	5	3.33	0.997
ACS5	If given the opportunity, my audit committee/board of directors would take advantage of me	128	2	5	3.76	0.986
ACS6	My audit committee/board of directors is willing to help me if I need a special favor	128	1	5	2.96	1.213
ACS7	My audit committee/board of directors shows very little concern for me	128	2	5	3.88	0.91
ACS8	My audit committee/board of directors cares about my opinions	128	1	5	3.9	0.84
ACS9	My audit committee/board of directors would protect me against any retaliation by coworkers if I express ethical concerns	128	1	5	3.67	1.036
ACS10	In case top management retaliates if I express ethics concerns my board of directors/audit committee would protect me	128	2	5	3.73	0.96
	Valid N (List wise)	128				

Source: Research data (2022)

This study further computed the overall mean and standard deviation for the latent construct of board audit committee support.

The results in Table 4.5 show that the overall mean for the board audit committee support latent construct was 3.7275, and the standard deviation was 0.73499. Since the overall mean is above the midpoint of 3 on a 5-point Likert scale, the results show general agreement among internal auditors that boards support internal auditors.

Table 4.5: Descriptive Statistics for Board Audit Committee Support Latent Construct

	N	Minimum	Maximum	Mean	Std. Deviation
Audit committee support	128	2.00	5.00	3.7275	0.73499
Valid N (List wise)	128				

Source: Research data (2022)

In conclusion, there is a general agreement that boards of directors or audit committees of boards support internal auditors by strongly considering internal auditors' goals and values, helping internal auditors who have problems, caring about internal auditors' well-being, forgiving internal auditors who make honest mistakes, not taking advantage of internal auditors, showing concern for internal auditors, caring about internal auditors' opinions, and protecting internal auditors against retaliation by coworkers and top managers. However, internal auditors generally do not agree that boards of directors or audit committees support internal auditors by giving auditors special favours.

4.4.2 Descriptive Statistics for CEO Openness

The CEO openness construct was measured using 5 items, and for purposes of data analysis, each measurement item had a code beginning with COPEN," and a 5-point Likert scale was used. Items coded as COPEN 1, COPEN, and COPEN 3 were positively worded, whereas the items coded as COPEN 4 and COPEN 5 were negatively worded (Table 4.6).

The results of positively worded items in Table 4.6 reveal that the mean for each of the five items is above 3, which is the midpoint of the 5-point Likert Scale that was used. This suggests that internal auditors generally agree that their respective CEOs in financial institutions are open to internal auditors' ideas, demonstrate receptiveness to internal auditors' suggestions, and show interest in the ideas of internal auditors.

The results of the negatively worded items coded as AC4 and AC5 in Table 4.6 show that the means are above the midpoint of 3 on a 5-point Likert Scale. This suggests general disagreement among internal auditors, that CEOs often reject the ideas of internal auditors

For each measurement item in Table 4.6, the standard deviation relative to the mean is low, suggesting that all five means of the five items represent the data well.

Generally, the results of positively worded items are consistent with the results of negatively worded items, since in both cases, the means are above three, and all the results suggest that CEOs are open to internal auditors' ideas.

The consistency of agreement with positively worded statements with disagreements with negatively worded statements, as shown by high means relative to the midpoint of a 5-point Likert scale, suggests that internal auditors could have answered questions with honesty rather than just ticking.

Table 4.6: Descriptive Statistics for CEO Openness Measurement Items

Item Code	Item	N	Min	Max	Mean	Std. Deviation
COPEN1	Our CEO is open to new ideas	128	1	5	3.99	1.046
COPEN2	Our CEO is receptive to our suggestions	128	1	5	3.8	1.089
COPEN3	Our CEO is interested in our ideas	128	1	5	3.9	0.995
COPEN4	Our CEO has often rejected our ideas (reverse coded)	128	2	5	3.55	0.912
COPEN5	Our CEO has often dismissed our suggestions(Reverse coded)	128	1	5	3.55	0.912
Valid N(Listwise)		128				

Source: Research data (2022)

The overall mean and standard deviation for the latent construct of CEO openness were also computed.

The results in Table 4.7 show that the overall mean for CEO openness is 3.7594 and the standard deviation is 0.84718. The mean is above 3, the midpoint of the 5-point Likert scale, suggesting that overall, there is agreement among internal auditors that CEOs are open to internal auditors' suggestions. Additionally, Since Field (2009) asserts that a low standard deviation relative to the mean implies that the mean represents the data well, the low standard deviation for CEO openness relative to the mean reveals that the mean of CEO openness represents the agreements among internal auditors well.

Table 4.7: Descriptive Statistics for the CEO Openness Latent Construct

	N	Minimum	Maximum	Mean	Standard Deviation
CEO openness	128	1.20	5.00	3.7594	0.84718
Valid N (List wise)	128				

Source: Research data (2022)

4.4.3 Descriptive Statistics for Internal Auditors' Moral Courage

The internal auditors' moral courage construct was measured using 4 items, and for purposes of data analysis, each item had a code beginning with MC," and a 5-point Likert scale was used to measure the internal auditors' moral courage construct.

The results in Table 4.8 reveal that the mean for each of the items used to measure internal auditors' moral courage was above the midpoint of 3, which is the midpoint of the 5-point Likert scale that was used to measure internal auditors' moral courage. This suggests that, on average, internal auditors in financial institutions agree that they can engage in courageous behaviour by confronting peers who commit unethical acts, confronting managers who commit unethical acts, stating views about ethical issues without fear, and disagreeing with a group that makes an unethical decision.

The results in Table 4.8 also show that the standard deviation for each of the four measurement items compared to their respective means is low, which suggests that internal auditors' opinions are not very different from the mean. Therefore, each mean represents the data well.

The highest agreement on moral courage acts that internal auditors can engage in was stating ethical views to supervisors, followed by confronting peers who engage in an unethical act, and then disagreeing with a group that makes an unethical ethical decision. The lowest agreement was on confronting managers who were engaged in unethical decisions. This result also shows that internal auditors may be more courageous when confronting peers and coworkers than top managers in the event that peers, coworkers, or top managers commit an unethical act.

Table 4.8: Descriptive Statistics for Internal Auditors' Moral Courage Measurement Items

Item code	Item	N	Min	Max	Mean	Std. Dev
MC1	I will confront my peers if they commit an unethical act.	128	2	5	4.37	0.699
MC2	I will confront my manager if he/she commits an unethical act.	128	2	5	4.11	0.853
MC3	I will always state my views about ethical issues to my supervisors	128	2	5	4.38	0.603
MC4	I will go against the group's decision whenever it violates my ethical standards	128	3	5	4.23	0.634
	Valid N (List wise)	128				

Source: Research data (2022)

The overall mean and standard deviation for the internal auditors' moral courage latent construct were also computed. The results in Table 4.9 show that the overall mean was 4.2754, and the standard deviation was 0.54415. The low standard deviation relative to the mean suggests limited dispersion of individual internal auditors' responses from the mean.

Since the overall mean is above the midpoint of 3, on a 5-point Likert scale that was used to measure internal auditors' moral courage, there is a general agreement that internal auditors engage in courageous acts, such as confronting peers and managers who engage in unethical behaviour, stating views about ethical issues, and disagreeing with a group if the group makes an unethical decision.

Table 4.9: Descriptive Statistics for the Moral Courage Latent Construct

	N	Minimum	Maximum	Mean	Std. Deviation
Internal auditors' moral courage	128	2.50	5.00	4.2754	0.54415
Valid N (List wise)	128				

Source: **Research data (2022)**

4.4.4 Descriptive Statistics for Internal Auditors' Effectiveness

Seven items anchored on a 5-point Likert scale served as the basis for measuring the internal auditors' effectiveness construct, or the value added by internal auditors. For data analysis purposes, each item had a code beginning with IAE. An item with code IAE7 ("In this firm, the internal auditors' recommendations are underutilised) was reverse-coded, whereas the other six items were positively worded to minimise response bias. The descriptive statistics for the measurement items are in Table 4.10.

The results of the positively worded items in Table 4.10 reveal that the mean for each of the items used to measure internal auditors' effectiveness was above the midpoint of 3, which is the midpoint of a 5-point Likert scale that was used to measure internal auditors' effectiveness. This suggests that, on average, internal auditors in financial institutions agree that internal auditors' suggestions greatly contribute to business processes, governance, strengthening internal controls, and managerial decision-making.

The Mean of the negatively worded item coded as IAE7 with the statement "In this firm, the internal auditors' recommendations are underutilised", is 3.8. Since the mean is above the midpoint of 3 on a 5-point Likert scale, on average, internal auditors disagree with the statement that internal auditors' recommendations are underutilised.

The standard deviations for each of the seven items used to measure internal auditors' effectiveness are low relative to the means, suggesting limited dispersion of individual internal auditors' perceptions from the mean for each item. Therefore, the mean values represent the data well.

The highest agreement on the aspects to which internal auditors contribute is governance, while the lowest agreement is on internal auditors' contribution to business process improvement.

Table 4.10: Descriptive Statistics for Effectiveness of Internal Auditors

Item code	Item	N	Min	Max	Mean	Std. Deviation
IAE1	In this firm, internal auditors' recommendations have a major major impact on the business processes	128	1	5	3.96	0.967
IAE2	In this firm, internal auditors' recommendations great impact the improvement of the governing process	128	2	5	4.16	0.747
IAE3	In this firm, improvements in internal control are a direct consequence of the internal auditors' activity.	128	2	5	4.02	0.742
IAE4	In this firm, the information from the internal auditors is a valuable Input into the managerial decision-making process	128	2	5	4.05	0.719
IAE5	In the managerial decision-making process, management takes into account the recommendations of the internal auditors (where possible)	128	2	5	4.11	0.755
IAE6	Internal auditors in this firm provide to the firm benefits that are expected from internal auditors.	128	2	5	4.08	0.738
IAE7	In this firm, the internal auditors' recommendations are underutilized (Reverse coded)	128	1	5	3.8	0.964
	Valid N (List wise)	128				

Source: Research data (2022)

The overall mean and standard deviation for the internal auditors' effectiveness latent construct were also computed. Results in Table 4.11 show that the overall mean is 4.0246 and the standard deviation is 0.6207. The mean of over 3, the midpoint of a 5-point Likert that was used suggests overall agreement that that internal auditors are effective in terms of positive contribution to business process improvement, governance, internal control soundness, and managerial decision making.

The low standard deviation relative to the mean suggests limited dispersion of individual internal auditors' responses from the mean, which suggests that the mean represents the perceptions of respondents on internal auditors' effectiveness well.

Table 4.11: Descriptive Statistics for the Internal Auditors' Effectiveness Latent Construct

	N	Minimum	Maximum	Mean	Std. Deviation
Internal audit effectiveness	128	2.00	5.00	4.0246	0.62027
Valid N (List wise)	128				

Source: Research data (2022)

4.5 Diagnostic tests

4.5.1 Skewness and Kurtosis

This study carried out diagnostic tests for skewness and kurtosis, and multi collinearity

The statistics for skewness were computed to assess the distribution's asymmetry and for kurtosis to assess the distribution's peakedness, compared to a normal distribution.

The results of skewness and kurtosis in Table 4.12 reveal that the skewness value for board audit committee support is -0.14, which suggests a moderately left-skewed distribution. Similarly, the skewness value for CEO openness is -0.598, indicating a moderate left-skewed distribution. Furthermore, the skewness value for moral courage is -0.365, suggesting a moderate left-skewed distribution. Lastly, the skewness value for internal auditor effectiveness is -0.56, indicating a moderate left-skewed distribution.

The kurtosis value for board audit committee support is 0.046, which is very close to 0, the benchmark for a normal distribution. This suggests that the distribution of scores for board audit committee support is close to a normal bell curve. Similarly, the kurtosis statistic for CEO openness is 0.139, which is well below the threshold for non-normality, usually considered to be around 2. This indicates that the distribution of scores for CEO openness is also close to normal. The kurtosis statistic for moral courage is 0.145, which is slightly higher than the previous two but still within the range of normality. Therefore, the distribution of scores for moral courage is also approximately normal. Lastly, the kurtosis statistic for internal auditor effectiveness is 0.421, which is the highest among the four but still less than the threshold for non-normality. Thus, while the distribution of scores for internal auditor effectiveness might deviate slightly from a perfect normal curve, it is still approximately normal. Moreover, Hair *et al*., (2013; 2011) provided empirical evidence that the performance of partial least squares (PLS) estimates is unaffected by moderate deviations from normality.

Table 4.12 Skewness and Kurtosis

	N	**Skewness**		**Kurtosis**	
	Statistic	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Board Audit Committee Support	128	-0.14	0.214	0.046	0.425
CEO openness	128	-0.598	0.214	0.139	0.425
Moral courage	128	-0.365	0.214	0.145	0.425
Internal auditor effectiveness	128	-0.56	0.214	0.421	0.425
Valid N (list wise)	128				

Source: Research data (2022)

4.5.2 Multi collinearity

The goal of the multi collinearity analysis was to determine whether the correlation between ostensibly independent variables was so strong that the contribution of each independent variable to the variance of the dependent variable could not be determined.

Multi collinearity was assessed using the variance inflation factor (VIF). If the variance inflation factor is equal to or greater than 5, multi collinearity is likely to be a serious issue. On the other hand, when the variance inflation factor is between 3 and 5, collinearity issues are possible. An ideal multi collinearity situation occurs when the variance inflation factor is less than 3 (Hair *et al*., 2019).

Table 4.13 shows that the variance inflation factor (VIF) for each of the four constructs of perceived audit committee support, CEO openness, and internal auditors' moral courage is less than 3. This indicated that there were no multi collinearity problems.

Table 4.13: Multi collinearity Results

Model	**Collinearity Statistics**	
	Tolerance	**VIF**
Audit Committee support	0.496	2.017
CEO openness	0.666	1.501
Moral courage	0.447	2.236

VIF is the variance inflation factor

Source: Research data (2022)

4.6 Assessment of the Measurement Model

The study assessed the measurement model by assessing the relationships between latent constructs and the items that were used to measure the constructs. This study used a reflective measurement model because the items in each construct reflected the effect of the construct on the items that make up the constructs. The quality assessment criteria for reflective measurement models comprise the evaluation of factor loadings, construct reliability, convergent validity, and discriminant validity (Hair *et al*., 2019), and this analysis follows.

4.6.1 Factor Loadings

The study assessed factor loadings, which show the correlations between the measurement indicator items and latent constructs.

Hair *et al*. (2016) recommended a loading of at least 0.708 as an indicator of the construct to be retained. An item with a loading of 0.4 can also be retained if the construct's average variance extracted (AVE) is 0.50 or more, while an item with a loading of less than 0.4 is outright deleted.

The results of loadings for board audit committee support, CEO openness, internal auditors' moral courage, and internal auditor effectiveness follow.

The factor loading results for the board audit committee support are summarized in Table 4.14. According to the results in Table 4.14 one item coded as AC6, "My Audit committee or board of directors is willing to help me if I need a special favor" had a loading of 0.39. This loading is lower than the 0.4 threshold that Hair *et al*. (2016) recommend. Moreover, the descriptive results for item AC6 already revealed that this measurement item had the lowest mean of 2.96 and the highest standard deviation of 1.213, suggesting general disagreement with the statement that boards of directors or audit committees of boards give internal auditors special favors. Therefore, based on the factor loading for item AC6, which was lower than the threshold of 0.4, this measurement item was deleted from the measurement model. Three items coded as AC1, AC2, and AC8 (Table 4.14) had loadings of over 0.4 but less than 0.708, whereas measurement items coded as AC3, AC4, AC5, AC7, AC9, and AC10 (Table 4.14) had loadings of over 0.708. Because of the three items with loadings between 0.4 and 0.708, the study further assessed the average variance extracted for the board audit committee support construct to ascertain if it was at least 0.5 to retain the three items or less than 0.5 to determine which of the three items were to be deleted to increase the average variance extracted to at least 0.5. The results show that the average variance extracted for board audit committee support is 0.55. Therefore, apart from the item coded AC6, all other items were retained.

Table 4.14: Item Loadings for Board Audit Committee Support

Item code	Item	Item Loading	Decision
ACS1	My Audit committee/board of directors strongly considers my goals and values.	0.61	Retain the item
ACS2	Help is available from my audit committee/ board of directors when I have a problem.	0.69	Retain the item
ACS3	My audit committee/board of directors really cares about my well- being	0.74	Retain the item
ACS4	My Audit Committee/Board of Directors would forgive an honest mistake on my part.	0.72	Retain the item
ACS5	If given the opportunity, my Audit Committee/Board of Directors would take advantage of me.	0.73	Retain the item
ACS6	My Audit Committee/Board of Directors is willing to help me if I need a special favor.	**0.39**	**Deleted the item**
ACS7	My Audit Committee/Board of Directors shows very little concern for me	0.77	Retain the item
ACS8	My Audit Committee/Board of Directors cares about my opinions.	0.61	Retain the item
ACS9	My audit committee/Board of Directors would protect me against any retaliation by co-workers, if I express ethical concerns	0.89	Retain the item
ACS10	In case top management retaliates if I express ethics concerns, the audit committee/ the Board would protect me	0.85	Retain the item

Source: Research data (2022)

The factor loading results for the CEO openness latent construct were summarised in Table 4.15. According to the results in Table 4.15, All the loadings for the five items used to measure CEO openness were above the threshold of 0.708 that was recommended by Hair *et al*. (2016). Therefore, all the items were retained.

Table 4.15: Item Loadings for CEO Openness

Item Code	Item	Item Loading	Decision
COPEN1	Our CEO is open to new ideas	0.928	Retain the item
COPEN2	Our CEO is receptive to our suggestions	0.854	Retain the item
COPEN3	Our CEO is interested in our ideas	0.911	Retain the item
COPEN4	Our CEO has often rejected our ideas (Reverse coded)	0.773	Retain the item
COPEN5	Our CEO has often dismissed our suggestions (Reverse coded)	0.793	Retain the item

Source: Research data (2022)

The factor-loading results for internal auditors' moral courage are summarised in Table 4.16. According to the results in Table 4.16, all loadings for the four items used to measure internal auditors' moral courage were above the threshold of 0.708, as recommended by Hair *et al*. (2016). Therefore, all items were retained.

Table 4.16: Item Loadings for Internal Auditors' Moral Courage

Item Code	Item	Item loading	Decision
MC1	I will confront my peers if they commit an unethical act.	0.762	Retain the item
MC2	I will confront my manager if he/she commits an unethical act.	0.839	Retain the item
MC3	I will always state my views about ethical issues to my supervisors	0.788	Retain the item
MC4	I will go against the group's decision whenever it violates my ethical standards	0.708	Retain the item

Source: Research data (2022).

The factor loading results for internal auditor effectiveness are summarised in Table 4.17. According to the results in Table 4.17, all loadings for the seven items used to measure internal auditors' moral courage were above the threshold of 0.708, as recommended by Hair *et al*. (2016). Therefore, all the items were retained.

Table 4.17: Item Loadings for the Effectiveness of Internal Auditors

Item Code	**Item**	**Item loading**	**Decision**
IAE1	In this firm, internal auditors' recommendations have a major impact on the business processes.	0.656	Retain the item
IAE2	In this firm, internal auditors' recommendations greatly impact the improvement of the governing process.	0.828	Retain the item
IAE3	In this firm, improvements in internal control are a direct consequence of the internal auditors' activity.	0.837	Retain the item
IAE4	In this firm, the information from the internal auditors is a valuable Input into the managerial decision-making process	0.903	Retain the item
IAE5	In the managerial decision-making process, management takes into account the recommendations of the internal auditors (where possible)	0.9	Retain the item
IAE6	Internal auditors in this firm provide to the firm benefits that are expected from internal auditors.	0.831	Retain the item
IAE7	In this firm, the internal auditors' recommendations are underutilized (Reverse coded)	0.523	Retain the item

Source: Research data (2022)

4.6.2 Internal Consistency Reliability

In line with Hair *et al*.'s (2019) guidelines, this study used both composite reliability (Jöreskog, 1971) and Cronbach's alpha to assess internal consistency reliability. Hair *et al*. (2019) say that reliability values between 0.7 and 0.9 are good and show that the measurement model is internally consistent. However, reliability values of 0.95 or more are not good.

The internal consistency reliability results in Table 4.18 reveal that for each construct, both Cronbach's alpha and composite reliability values are greater than 0.7 and less than 0.95, respectively.

Therefore, the reliability values were good and represented an internally consistent measurement model. Therefore, the measurement model demonstrated satisfactory internal consistency reliability.

Table 4.18: Reliability Analysis-Cronbach's Alpha and Composite Reliability Criteria

	Cronbach's alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)
Board audit committee support	0.896	0.911	0.916
CEO openness	0.906	0.918	0.93
Internal auditor effectiveness	0.895	0.916	0.92
Internal auditors' moral courage	0.778	0.78	0.858

Source: Research data (2022)

4.6.3 Convergent Validity

This study assessed convergent validity using average variance extracted (AVE). The lowest acceptable average variance extracted for each construct is 0.5 (Hair *et al*., 2019).

In Table 4.19, the results for convergent validity show that each of the four constructs' AVE was greater than 0.5. This means that for each of the four constructs examined in this study, there is sufficient convergence between the constructs to explain the variances in construct items.

Table 4.19: Convergent Validity Results

Construct	The average variance extracted (AVE)
Audit committee support	0.55
CEO openness	0.729
Internal audit effectiveness	0.63
Internal auditors' moral courage	0.603

Source: Research data (2022)

The results of convergent validity are further summarized using Figure 4.1

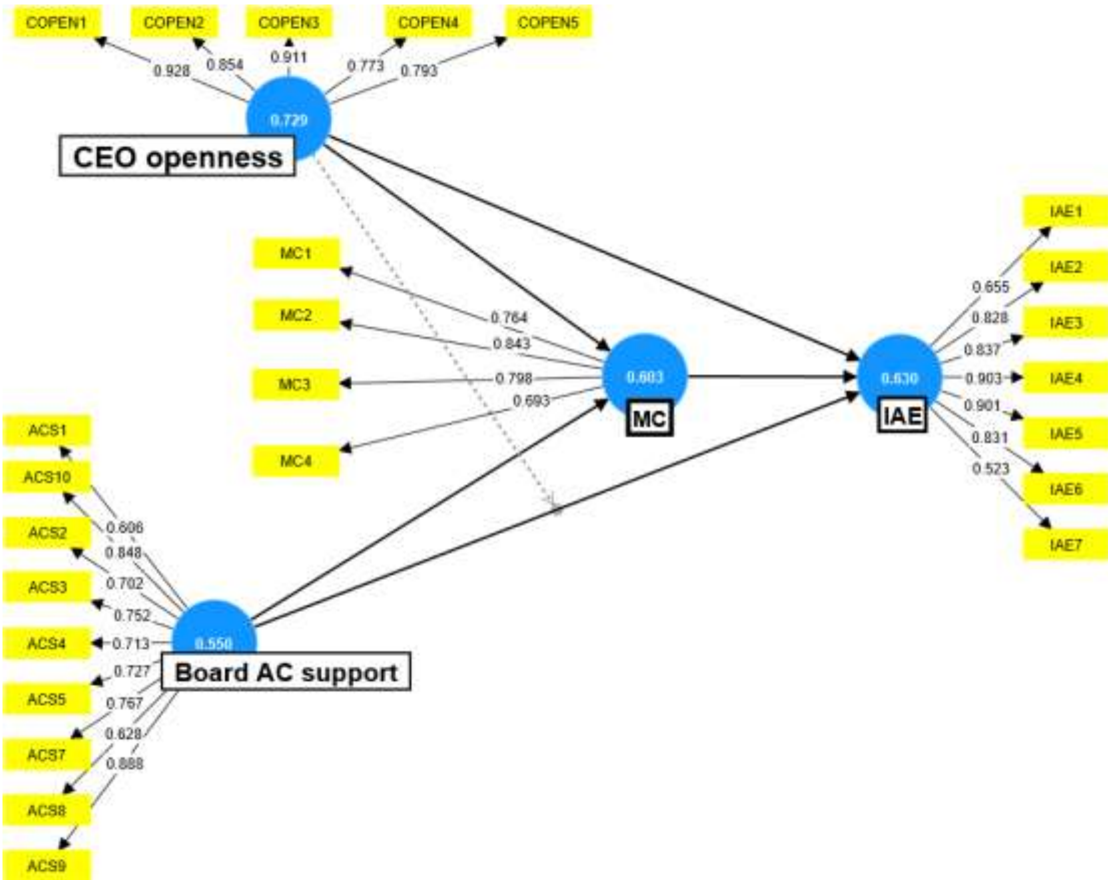

Figure 4.1: Convergent Validity Assessment Using Item loadings and Average Variances Extracted

4.6.4 Discriminant Validity

This study evaluated discriminant validity to ascertain whether each construct in the model was empirically and statistically different from other constructs in the structural model. Discriminant validity was assessed using the Fornell-Larcker and cross-loading criteria.

According to the Fornell-Larcker criterion, for ideal discriminant validity, the square root of the average variance extracted (AVE) for a construct must be higher than the correlation between the construct and other constructs (Fornell and Larcker, 1981).

Table 4.20 shows that the square root of the average variance extracted for audit committee support, which is 0.742 (bold and italics), is higher than the correlations between audit committee support and CEO openness, internal audit effectiveness, and internal auditors' moral courage, which are 0.491, 0.628, and 0.7, respectively. Similarly, the square root of the average variance extracted for CEO openness of 0.854 (bold and italics) is greater than the correlations between CEO openness and internal audit effectiveness and between CEO openness and internal auditors' moral courage (0.43 and 0.561, respectively). Similarly, the square root of the average variance extracted for the internal audit effectiveness construct is higher than the correlation between internal audit effectiveness and internal auditors' moral courage (0.724).

Therefore, the four constructs of audit committee support, CEO openness, internal audit effectiveness, and internal auditors' moral courage are statistically sufficiently distinct according to the Fornell-Larcker criterion.

Table 4.20: Discriminant Validity Results using the Fornell-Larcker Criterion

	Board support	**CEO openness**	**Internal auditor effectiveness**	**Moral courage**
Board support	***0.742***			
CEO openness	0.491	***0.854***		
Internal auditor effectiveness	0.628	0.43	***0.793***	
Moral courage	0.7	0.561	0.724	***0.776***

Source: Research data (2022)

4.6.4.1 Discriminant Validity-Cross Loadings Criterion

The study used the cross-loading criterion to validate the results of discriminant validity already calculated using the Fornell-Larcker criterion.

With the cross-loading criterion, discriminant validity is met when the items that represent a construct load on the parent construct more than they load on any other construct in the model. If the items load more on the parent construct than on any other construct in the model, then the constructs are empirically different (Hair *et al*., 2017b).

The cross-loading results in Table 4.21 show that all items loaded onto their parent constructs (values that are bold and in italics in the columns of the table) more than on other constructs in the model. As such, based on the cross-loading criterion, all four constructs of audit committee support, CEO openness, internal auditors' moral courage, and internal audit effectiveness are statistically distinct.

Table 4.21: Discriminant Validity Results using Cross Loadings

	ACS	COPEN	IAE	MC
ACS1	***0.606***	0.404	0.353	0.408
ACS10	***0.848***	0.413	0.59	0.626
ACS2	***0.702***	0.388	0.387	0.489
ACS3	***0.752***	0.341	0.464	0.567
ACS4	***0.713***	0.165	0.405	0.405
ACS5	***0.727***	0.343	0.535	0.556
ACS7	***0.767***	0.38	0.515	0.528
ACS8	***0.628***	0.289	0.242	0.405
ACS9	***0.888***	0.509	0.574	0.614
COPEN1	0.413	***0.928***	0.379	0.517
COPEN2	0.455	***0.854***	0.376	0.571
COPEN3	0.499	***0.911***	0.349	0.537
COPEN4	0.388	***0.773***	0.342	0.34
COPEN5	0.326	***0.793***	0.396	0.388
IAE1	0.359	0.362	***0.655***	0.478
IAE2	0.582	0.326	***0.828***	0.675
IAE3	0.507	0.354	***0.837***	0.576
IAE4	0.546	0.276	***0.903***	0.644
IAE5	0.574	0.386	***0.901***	0.643
IAE6	0.526	0.367	***0.831***	0.546
IAE7	0.325	0.364	***0.523***	0.402
MC1	0.54	0.412	0.557	***0.764***
MC2	0.564	0.464	0.592	***0.843***
MC3	0.605	0.366	0.542	***0.798***
MC4	0.46	0.502	0.556	***0.693***

Source: Research data (2022)

ACS represents audit committee support

COPEN represents CEO openness; IAE represents internal audit effectiveness, and MC represents internal auditors' moral courage.

Both the Fornell-Larcker and cross-loading assessment criteria agree that the discriminant validity results of board audit committee support, CEO openness, moral courage of internal auditors, and internal audit effectiveness are satisfactory.

In accordance with Hair *et al*.'s (2019) criteria, the measurement model for this study satisfies all conditions for an acceptable measurement model; hence, a structural model assessment follows.

4.7 Structural Model Assessment

Because the measurement model was satisfactory, a structural model assessment was performed. The structural model assessment covered tests for endogeneity bias, multicollinearity, coefficient of determination (R^2), predictive relevance (Q^2), linearity of the model, and the statistical significance of path coefficients in line with Hair *et al*.'s (2019) Partial Least Squares (PLS) reporting guidelines and Hult *et al*.'s (2018) guidelines.

4.7.1 Endogeneity Bias

This study evaluated the model's robustness in terms of its lack of endogeneity bias. Endogeneity bias occurs when some predictor variables are linked to the error term of the outcome variable (Antonakis *et al*., 2010; Li *et al*., 2021).

Hult *et al*. (2018) suggest the use of the Gaussian copulas method to check for endogeneity bias. The Gaussian copulas are calculated and used after satisifying the condition that potential endogenous predictor variables are not normally distributed (Sarstedt & Mooi, 2014; Hult *et al*., 2018). The Kolmogorov-Smirnov test with Lilliefors correction is used to confirm that potential endogenous predictor variables are not normally distributed before using the Gaussian copulas (Sarstedt & Mooi, 2014; Hult *et al*., 2018)

The Kolmogorov-Smirnov test with Lilliefors adjustment examined the null hypothesis that the predictor variables do not violate the assumption of normality. A p-value of less than 0.05 suggests that the data significantly deviated from the normal distribution.

The results of the Shapiro-Wilk test (Table 4.22) revealed that the data on both CEO openness and the internal auditors' moral courage variables deviate from a normality distribution ($P < 0.05$).

The results of the Kolmogorov-Smirnov test with Lilliefors adjustment using the Shapiro Wilk test in Table 4.22 reveal that the data on both CEO openness and the internal auditors' moral courage variables deviate from a normality distribution ($P < 0.05$).

Table 4.22: Normality Test Results using the Kolmogorov-Smirnov Lilliefors Significance Correction Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Board Audit Committee support	0.055	128	.200*	0.973	128	0.012
CEO openness	0.092	128	0.009	0.950	128	0.000
Moral courage	0.164	128	0.000	0.910	128	0.000

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Source: Research data (2022)

Thus, since the normality results show a slight deviation from normality for CEO openness and internal auditors' moral courage, a condition for testing for endogeneity bias using Gaussian Copula is met.

Using the Gaussian copula method, this study created three regression models in which the dependent variable, internal audit effectiveness, was regressed on each of the three possible endogenous independent constructs: CEO openness (Model 1), audit committee support (Model 2), and internal auditors' moral courage (Model 3). The study also developed four regression models that take into account all possible combinations of multiple endogenous variables: audit committee support and CEO openness (Model 4), audit committee support and internal auditors' moral courage (Model 5), CEO openness and internal auditors' moral courage (Model 6), and audit committee support, CEO openness, and internal auditors' moral courage (Model 7).

A Gaussian copula coefficient was calculated for each predictor-dependent bivariate relationship in each bivariate regression model combination. If the Gaussian copula p-value for a partial regression model is greater than 0.05, then the model is not significant, implying that the independent variable is not endogenous (Hult *et al*., 2018).

The results of the endogeneity test utilizing Gaussian copulas in Table 4.23 indicate that all Gaussian copula coefficients are non-significant ($T < 96$; $P > 0.05$), indicating that no partial regression model in the structural model of this study has an endogeneity issue.

Table 4.23: Endogeneity Test Results Using the Gaussian Copula Method

Gaussian Copula Models			
ONE COPULA			
Model 1: CEO openness			
Path	Beta	T-value	P values
GC (COPEN) -> IAE	0.245	1.469	0.142
Model 2: Audit Committee Support			
Path	Beta	T-value	P values
GC (ACS) -> IAE	0.299	0.593	0.553
Model 3 Moral courage			
Path	Beta	T-value	P values
GC (MC) -> IAE	0.027	0.252	0.801
TWO COPULAS:			
Model 4: Board Audit Committee Support and CEO openness			
Path	Beta	T-values	P values
GC (ACS) -> IAE	0.27	0.547	0.584
GC (COPEN) -> IAE	0.252	1.453	0.146
Model 5: Board audit committee support and internal auditors' moral courage			
Path	Beta	T-values	P values
GC (ACS) -> IAE	0.299	0.589	0.556
GC (MC) -> IAE	-0.016	0.139	0.89
Model 6: CEO Openness and Moral Courage			
Path	Beta	T-values	P values
GC (COPEN) -> IAE	0.244	1.462	0.144
GC (MC) -> IAE	0.019	0.182	0.856
THREE COPULAS			
Model 7: Board Audit Committee support, CEO Openness, and Moral Courage			
	Beta	T-values	P values
GC (MC) -> IAE	-0.023	0.206	0.837
GC (COPEN) -> IAE	0.253	1.455	0.146
GC (ACS) -> IAE	0.27	0.542	0.588

Source: Research data (2022)

4.7.2 Coefficient of Determination (R^2)

The coefficient of determination R^2 was used to measure the variations in internal auditors' moral courage and internal audit effectiveness, which were explained by the exogenous variables coefficients of determination (R^2 of 0.5 and 0.75 are moderate and large, respectively (Hair *et al*., 2019).

The R^2 results of this study in Table 4.24 show coefficient of determination (R^2) values of 0.608 and 0.546 for internal audit effectiveness and internal auditors' moral courage, respectively, implying that the R^2values are moderate.

Moreover, the R^2 values for the effectiveness of internal audits and the moral courage of internal auditors are statistically significant ($P < 0.001$, $t > 1.96$), and there is no zero in the confidence interval).

Based on these results, audit committee support, internal auditors' moral courage, and CEO openness explain 60.8% of the variance in the effectiveness of internal auditors, while perceived board audit committee support and CEO openness explain 54.6% of the variance in the moral courage of internal auditors. Furthermore, the explained variances in moral courage and internal audit effectiveness are moderate.

Table 4.24: Coefficient of Determination (R^2) Results

	R-square	**R-square adjusted**
IAE	0.62	0.608
MC	0.553	0.546

Source: Research data (2022)

4.7.3 Predictive Relevance (Q^2))

The predictive relevance (Q^2) value measures the model's prediction accuracy. (Hair *et al*., 2019; Stone, 1974; Geisser, 1974). The meaningful values of Q^2 for a specific endogenous construct are greater than zero. According to Hair *et al*. (2019), the values of predictive relevance of 0, 0.25, and 0.5 are small, medium, and large, respectively.

The results in Table 4.25 show that this study's model has predictive relevance because all of the predictive relevance (Q^2) values are greater than zero. In addition, the predictive relevance value is medium for internal audit effectiveness and high for internal auditors' moral courage.

In conclusion, since all Q^2 results of this study are greater than zero, the hypothesised predictor variables accurately predict the moral courage of internal auditors and internal audit effectiveness.

Table 4.25: Predictive Relevance (Q^2) Results

Endogenous Construct	Predictive Relevance (Q^2)
Internal audit effectiveness	0.444
Internal auditors' Moral Courage	0.523

Source: Research data (2022)

4.7.4 Assessment of the Structural Model Linearity

Ramsey's (1969) Regression Equation Specification Error Test (RESET) was used to simulate non-linear relationships to ascertain if the model was linear.

Two models of multiple linear regression were created. The study variables were entered concurrently into Model 1, which was developed first. Model 2 comprises the study variables as well as additional variables in the form of both quadratic and cubic variables. By modifying the unstandardized dependent variable scores and then inserting the scores in regression, a hierarchical multiple linear regression created quadratic and cubic variables. Because linear regression was utilised, the null hypothesis for Model 1 was that the model was linear. Following the addition of both quadratic and cubic variables, an F change p-value greater than 0.05 indicates that the F change is not significant and that the model is linear. However, an F-change p-value of less than 0.05 with the addition of transformed variables in the form of quadratic and cubic variables is statistically significant, indicating that the model is not linear.

Table 4.26 summarises Ramsey's regression equation specification error test results for Models 1 and 2. According to the results in Table 4.26, Model 1 of the multiple linear regression, which includes only the research variables internal audit effectiveness, perceived board audit committee support, internal auditor's moral courage, and CEO openness, is significant (F-change (df: 4,123) =50.259; P < 0.001).

The F-change was not significant when the transformed quadratic and cubic variables were added to the regression together (F change (df:2, 121) =0.096; P > 0.05). This suggests that Model 1, which only uses the study variables and linear regression, is linear.

In addition, the model does not have omitted variable bias because the F-change in the regression model (Table 4.26) when the related quadratic and cubic variables are added, is not significant.

Table 4.26: Model Summary of Ramsey's RESET Results on Model Linearity

				Change Statistics				
Model	R	R Square	Adjusted R Square	R Square Change	F Change	df1	df2	Sig. F Change
1	.788[a]	0.620	0.608	0.620	50.259	4	123	0.000
2	.788[b]	0.621	0.602	0.001	0.096	2	121	0.908

Source: Research data (2022).

Model 1.

a. Predictors: perceived board audit committee support, CEO openness, and the interaction term between perceived board audit committee support and CEO openness

b. Dependent variable: internal auditors' effectiveness

a. Predictors: (Constant), perceived board audit committee support, CEO openness, and perceived board audit committee support-CEO openness interaction term.

Dependent variable: Internal audit effectiveness.

Model 2.

Predictors:(Constant): Perceived board audit committee support, CEO openness, and perceived board audit committee support-CEO openness interaction term, quadratic variable, and cubic variable.

Dependent variable: Internal audit effectiveness.

Key to abbreviations in Table 4.26

In conclusion, the results of the assessment of the measurement and structural models show that the measurement model is reliable and valid and that the structural model is robust.

4.7.5 Correlation Results

A zero-order Pearson correlation matrix was calculated to examine the strengths and directions of the relationships between the variables of board audit committee support, chief executive officers' openness, internal auditors' moral courage, and internal auditor effectiveness. This matrix is in Table 4.27.

According to the correlation results in Table 4.27, there was a strong positive correlation between board audit committee support and internal auditor effectiveness (r (128) = 658**, $p < 0.01$). This suggests that as board audit committee support increases, internal auditor effectiveness also tends to increase.

There was a strong positive correlation between the CEO's openness to internal auditors' ideas and internal auditor effectiveness (r (128) = 556**, $p < 0.01$). This suggests that as executive officers' openness to internal auditors' ideas increases, internal auditor effectiveness tends to increase.

There was a very strong positive correlation between board audit committee support and internal auditors' moral courage to speak about ethical issues (r (128) =.765**, $p < 0.01$). This suggests that as board audit committee support increases, internal auditors' moral courage to speak about ethical issues tends to increase.

There is a very strong positive correlation between internal auditors' moral courage to speak about ethical issues and internal auditor effectiveness (r (128) =.749**, $p < 0.01$). This suggests that as internal auditors' moral courage to speak about ethical issues increases, their effectiveness tends to increase.

There was a strong positive correlation between chief executive officers (CEOs') openness to internal auditors' ideas and internal auditors' moral courage to speak about ethical issues (r (128) =608**, $p<0.01$). This suggests that as the chief executive officers (CEOs') openness to internal auditors' ideas increases, internal auditors' moral courage to speak about ethical issues tends to increase.

Table 4.27: Zero Order Correlation Results

		Board audit committee Support	CEO openness	Moral courage	Internal auditor effectiveness
Board Audit Committee Support	Correlation Coefficient	1.000	.571**	.765**	.658**
	Sig. (2-tailed)		0.000	0.000	0.000
	N	128	128	128	128
CEO openness	Correlation Coefficient	.571**	1.000	.608**	.556**
	Sig. (2-tailed)	0.000		0.000	0.000
	N	128	128	128	128
Moral courage	Correlation Coefficient	.765**	.608**	1.000	.749**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	128	128	128	128
Internal auditor effectiveness	Correlation Coefficient	.658**	.556**	.749**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	128	128	128	128

** **Correlation is significant at the 0.01 level (2-tailed).**

Source: Research data (2022)

The results of hypothesis testing are as follows:

4.7.6 Results of Hypothesis Testing

4.7.6.1 Significance of Path Coefficients

Table 4.28 summarizes the path coefficients and statistical significance of each path. According to the hypothesis testing results in Table 4.28, all paths for the total effects are significant ($P < 0.05$), and all hypotheses are supported.

Table 4.28: Significance of Structural Model Path Coefficients

				Bias-corrected confidence intervals	
Path	**Beta**	**T- value**	**P- value**	**2.50%**	**97.50%**
Total effect					
ACS -> IAE	0.520	6.793	0.000	0.361	0.658
Direct effect					
ACS -> IAE	0.25	2.527	0.012	0.061	0.446
ACS -> MC	0.56	10.981	0.0000	0.451	0.652
MC -> IAE	0.483	6.101	0.0000	0.326	0.639
Indirect effect					
ACS -> MC -> IAE	0.27	5.517	0.0000	0.186	0.38
Total effect					
COPEN -> IAE	0.193	2.935	0.003	0.057	0.314
Direct effect					
COPEN -> IAE	0.055	0.831	0.406	-0.089	0.168
COPEN -> MC	0.287	5.451	0.0000	0.173	0.382
Indirect effect					
COPEN -> MC -> IAE	0.138	4.143	0.0000	0.08	0.213
COPEN x ACS -> IAE	0.297	2.744	0.006	0.033	0.45

Source: Research data (2022)

Key to abbreviations in Table 4.28 of the path coefficients

ACS is board audit committee support; MC is internal auditors' moral courage; COPEN is CEO openness and IAE is internal audit effectiveness.

4.7.6.2 Path Diagrams for the Results of Hypothesis Testing

The results in the path diagram in figure 4.2 show the path coefficients with the respective p-values (in brackets) and the adjusted R squared of 0.546 and 0.608 for internal auditors' moral courage and internal audit effectiveness respectively. According to the results, all paths are significant apart from the direct effect of CEO openness on internal audit effectiveness.

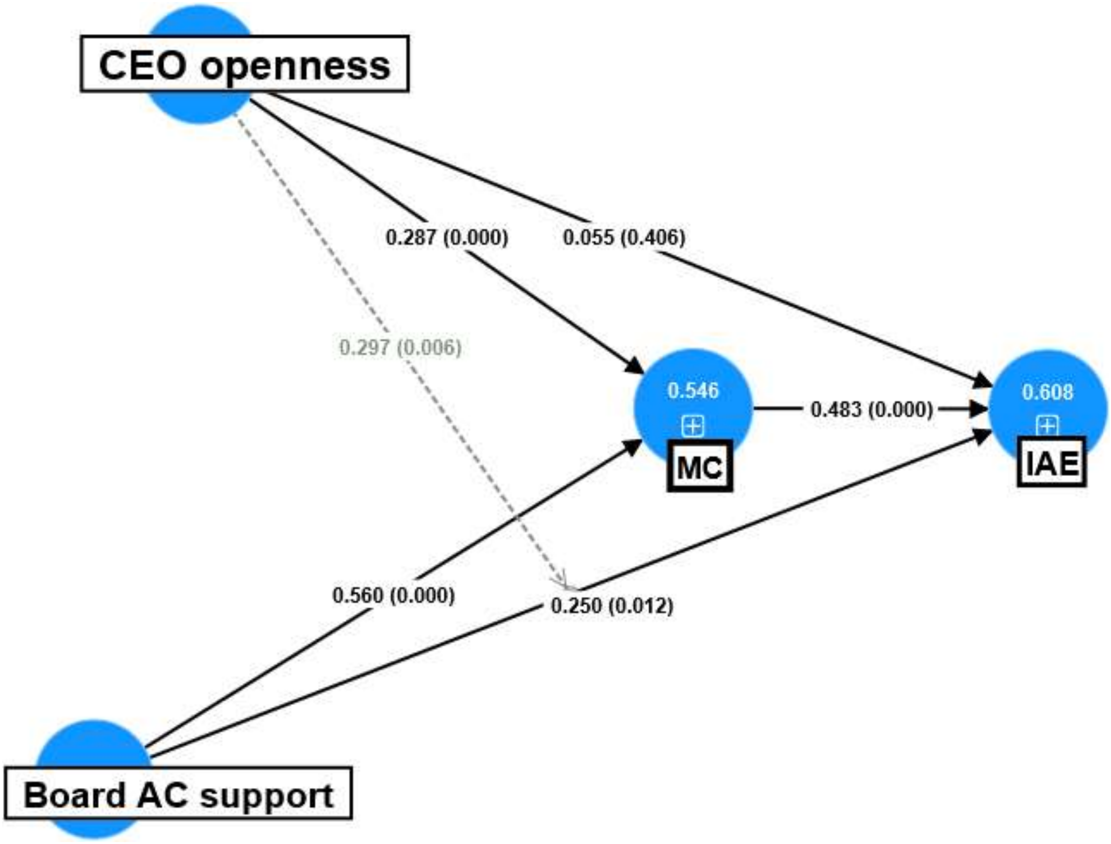

Figure 4.2: Direct-Effects Path Diagram Showing Path Coefficients, P-values and Adjusted R Square Values

AC: Audit committee

CEO: Chief Executive Officer

MC: Moral courage

IAE: Internal auditors' effectiveness

The results of total effects are shown in figure 4.3 below.

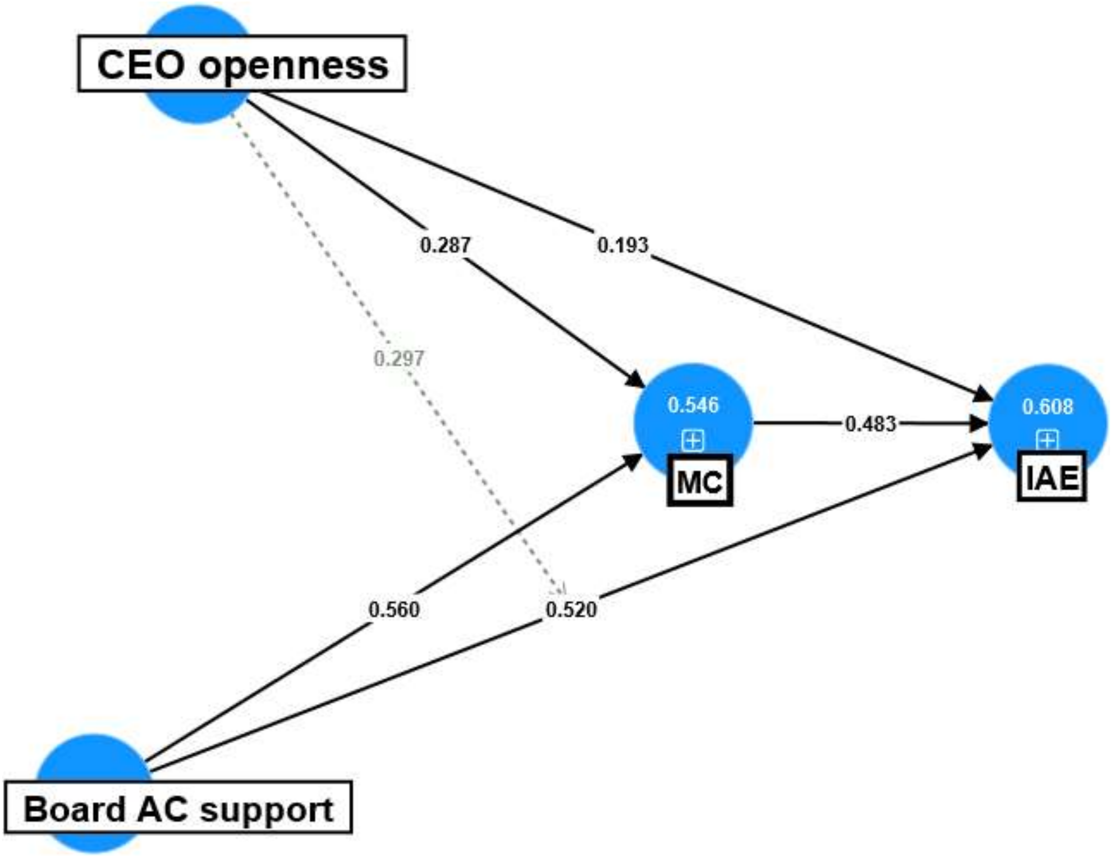

Figure 4.3: Path Diagram Showing Total Effects and the Adjusted R squared

AC: Audit committee

CEO: Chief Executive Officer

MC: Moral courage

IAE: Internal auditors' effectiveness

4.7.6.3 Final Mathematical Model

Internal auditors' effectiveness = [a + b*c] board audit committee support + [e*c+ d] CEO openness + [f]CEO openness * board audit committee support.

Where

a= the beta coefficient of the direct effect of board audit committee support on internal audit effectiveness =0.25

b= the beta coefficient of the effect of board audit committee support on internal auditors' moral courage =0.56

c= the beta coefficient of internal auditors' moral courage on internal audit effectiveness =0.483

b*c = the beta coefficient of the indirect effect of board audit committee support on internal audit effectiveness through internal auditors' moral courage =0.27

[a + b*c] = the beta coefficient of the total effect of board audit committee support on internal audit effectiveness =0.520

d= the beta coefficient of the direct effect of CEO openness on internal audit effectiveness =0.065

e= the beta coefficient of the effect of CEO openness on internal auditors' moral courage = 0.287

e*c =the beta coefficient of the indirect effect of CEO openness on internal audit effectiveness through internal auditors' moral courage = 0.138.

[e*c+ d] =the beta coefficient of the total effect of CEO openness on internal audit effectiveness = 0.193 which is approximately 0.2

f= the beta coefficient of the moderating effect of CEO openness on the relationship between board audit committee support and internal audit effectiveness = 0.297

Thus, based on the calculated effect sizes, the final internal audit effectiveness model is presented below.

Internal auditors' effectiveness = [0.25 + 0.56*0.483] board audit committee support + [0.287*0.483+ 0.065] CEO openness + [0.297] CEO openness * board audit committee support.

4.7.6.4 Interpretation of Results of Hypotheses Testing

The study tested eight hypotheses, and the following are the interpretations of the hypothesis testing results:

Hypothesis H_{01}: **Board audit committee support has no significant effect on internal auditors' effectiveness.**

This study hypothesized that board audit committee support has a significant effect on internal auditors' effectiveness.

The results in Table 4.29 reveal that the total effect of board audit committee support on internal auditors' effectiveness is positive and significant (β=0.520; t=6.793; P< 0.01).

Similarly, the direct effect of board audit committee support on internal auditors' effectiveness is positive and significant (β=0.25; t=2.527; P< 0.01).

The results support the hypothesis that a positive relationship exists between board audit committee support and internal auditors' effectiveness. This implies that internal auditors' effectiveness increases as board audit committee support increases.

Table 4.29: The relationship between board audit committee support and internal auditors' effectiveness

				Bias-corrected confidence intervals	
Path	Beta	T- value	P- value	2.50%	97.50%
Total effect					
ACS -> IAE	0.52	6.793	0.00	0.361	0.658
Direct effect					
ACS -> IAE	0.25	2.527	0.012	0.061	0.446

Source: Research data (2022)

This finding means that when boards or board audit committees support internal auditors by caring about internal auditors, protecting internal auditors against coworkers' and managers' retaliation, caring about internal auditors' well-being, caring about internal auditors' opinions, forgiving internal auditors' honest mistakes, and generally helping internal auditors when in need, internal auditors' contributions to managerial decision-making, internal control, business process improvement, and governance improvement are likely to increase.

The results support the organisational support theory and social exchange theory that supportive supervisors trigger employees to engage in reciprocal work behaviours that ultimately positively affect organisational outcomes (Cropanzano et al., 2017). The results also support previous empirical studies that draw on organisational support theory to reveal the positive effect of organisational support on internal audit outcomes. For instance, Alzeban and Sawan (2015) found that more supportive board audit committees are more likely to promote better risk management because they motivate internal auditors to engage more in risk management activities. Studies on support from top management also show that supportive top management positively influences internal auditing outcomes. For instance, Ahmad et al. (2009) reveal that a supportive environment influences the acceptance of internal auditors' recommendations and, ultimately, the implementation of recommendations.

The present study further extends earlier research by investigating the influence of a supportive board on the effectiveness of an internal audit using an improved instrument for board audit committee support, thus making a valuable contribution. The current study refined the operationalization of board audit committee support by adding and empirically analysing board support construct items that capture the protection of internal auditors from retaliation by coworkers and management. Anvari et al. (2019) stated that protecting courageous actors from retaliation could be a way of empowering courageous actors like whistleblowers to influence change because retaliation is a significant obstacle they face. Similarly, Lee and Xiao (2018) recommend that future research study elements that are likely to influence retaliation against the courageous actions of accountants. This study demonstrates that protection from retaliation is one of the items of board audit committee support that positively impacts internal auditors' contributions to managerial decision-making, internal control, and business process improvement because it positively influences the implementation of internal auditors' recommendations rather than retaliation. Moreover, the construct items on protection from retaliation in the present study load better on the board audit committee support construct than the prior board audit committee support items employed by studies such as Khelil *et al*. (2018).

Therefore, these results make an important contribution to the theory. First, the study reveals that the construct of board audit committee support includes the board's protection of internal auditors from retaliation, and protection from retaliation is a factor that motivates internal auditors to engage in behaviours that are beneficial to their organisations and ultimately positively affect internal audit effectiveness. Second, by adding retaliation items to the board audit committee support instrument, this study responds to requests by Mihret and Yismaw (2007) to improve the understanding of internal auditors’ effectiveness using different variables.

In summary, the findings suggest that boards or board audit committees that wish to positively influence the contributions of internal auditors to managerial decision-making, internal control, business process improvement, and governance by enhancing support for internal auditors should emphasise internal auditors' protection against retaliation as part of the support.

Hypothesis H_{02}: Chief executive officers’ (CEOs’) openness has no significant effect on the internal auditors’ effectiveness

This study hypothesised that CEO openness influences the effectiveness of internal auditors.

The results in Table 4.30 reveal that the total effect of CEO openness and internal auditors’ effectiveness is positive and significant ($\beta = 0.193$, $t = 2.935$, $P < 0.05$) when interpreting the total effect. However, the direct effect of CEO openness on internal auditors’ effectiveness is insignificant ($\beta = 0055$; $t = 0.8310$; $P > 0.05$).

The results show that CEO openness does not directly affect internal auditors’ effectiveness. Therefore, the research hypothesis was not supported, drawing on the results of the direct effect. However, CEO openness positively affects internal auditors’ effectiveness through a mediating variable.

Table 4.30: The relationship between chief executive officers' (CEO) openness and internal auditors' effectiveness

				Bias-corrected confidence intervals	
Path	**Beta**	**T- value**	**P-value**	**2.50%**	**97.50%**
Total effect					
COPEN -> IAE	0.19	2.935	0.003	0.057	0.314
Direct effect					
COPEN -> IAE	0.055	0.831	0.406	-0.089	0.168

Source: Research data (2022)

The finding on the relationship between CEO openness and internal auditors' effectiveness reveals that whereas the direct effect is insignificant, the indirect effect is significant. Therefore, the findings demonstrate that open CEOs indirectly impact internal auditors' contributions to managerial decision-making, internal control, governance, and business process improvement.

Thus, this study demonstrates that CEO openness affects internal auditors' effectiveness. The finding on the total effect of CEO openness responds to a call by Lenz and Hahn (2015) to ascertain which executive behaviours matter for internal audit effectiveness. Furthermore, by revealing that CEO openness affects internal audit effectiveness only indirectly through the mediating effect of internal auditors' moral courage rather than directly, the present study lends support to Namazi and Namazi's (2016) argument that research models without mediators and/or moderators are likely to be incomplete and less informative. Additionally, the significant indirect effect of CEO openness on internal audit effectiveness demonstrates the need to understand the mechanisms by which upper-echelon behaviours affect internal audit outcomes.

Hypothesis H_{03}: The board audit committee's support has no significant effect on the internal auditors' moral courage

This study hypothesised that board audit committee support significantly affects internal auditors' moral courage.

The results in Table 4.31 reveal that board audit committee support significantly and positively affects internal auditors' moral courage ($\beta = 0.56$; $t = 10.981$; $P < 0.01$). Therefore, the research hypothesis is supported. The findings suggest that internal auditors are more likely to voice ethical concerns when the board or audit committee supports them.

Table 4.31: The relationship between board audit committee support and internal auditors' effectiveness

				Bias-corrected confidence intervals	
Path	Beta	T- value	P- value	2.50%	97.50%
ACS -> MC	0.56	10.981	0.00	0.451	0.652

Source: Research data (2022).

The results suggest that the effect of perceived board audit committee support on internal auditors' moral courage is positive and significant. This means that when audit committees care about internal auditors, the internal auditors are likely to reciprocate by engaging in moral courage behaviours, such as expressing ethical concerns.

These results are consistent with previous research (Khelil *et al*., 2018), which revealed a positive relationship between perceived board audit committee support and internal auditors' moral courage. The study drew on organisational support and social exchange theories, which posit that a supervisor who is supportive by caring about employees' well-being and opinions motivates employees to return the support by engaging in organizationally beneficial behaviours. Care by supervisors can take various forms, such as protecting internal auditors from retaliation by coworkers and forgiving honest mistakes. Additionally, a supportive board positively motivates internal auditors to engage in moral courage behaviours by creating an internal auditor's sense of self-efficacy to engage in moral courage behaviours when speaking about ethical issues. According to the social cognitive theory, environmental factors impact individual behaviours (Bandura, 1991) by influencing personal self-efficacy, which is defined as "people’s judgement of their capabilities to organise and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgements of what one can do with whatever skills one possesses (Bandura, 1986, p. 391)". In frightening situations, people's self-beliefs in their efficacy positively impact levels of motivation to engage in behaviours (Carrillo, 2010), and perceived supervisor support is one of the antecedents of self-efficacy in followers (Chen *et al*., 2016).

The finding on the relationship between perceived board audit committee support and internal auditors’ moral courage in this study adds value in two ways:

First, a significant positive relationship indicates that the condition for mediation is satisfied. This study hypothesised that internal auditors ‘moral courage mediates the relationship between board audit committee support and internal auditors’ effectiveness. Zhao (2010) argues that to test for mediation, the relationship between the independent variable and the mediating variable must be significant. Thus, the conditions for mediation are satisfied.

Second, this study examined the relationship between perceived board audit committee support and internal auditors’ moral courage using an improved instrument for measuring board audit committee support. Board audit committee support was improved by adding two items to the instrument that was previously used in internal auditing research, such as by Khelil *et al*. (2018). Khelil *et al*. (2018) adopted the short-form 8-item perceived supervisor support instrument that was developed by Rhoades and Eisenberger (2002) but modified the instrument by replacing the word "supervisor" with the word "board or board's audit committee. The existing instrument had items that read: "My audit committee or board of directors strongly considers my goals and values", Help is available from my audit committee or board of directors when I have a problem; my audit committee or board of directors cares about my well-being; "my audit committee or board of directors would forgive an honest mistake on my part"; "if given the opportunity, my audit committee or board of directors would take advantage of me"; "my audit committee or board of directors is willing to help me if I need a special favour"; and "my audit committee or board of directors cares about my opinion". This study's incremental contribution is in the form of adding to the existing instrument for measuring perceived board audit committee support: two statements that read "My audit committee/board of directors would protect me against retaliation by management if I express ethical concerns" and "My audit committee/board of directors would protect me against retaliation by co-workers if I express ethical concerns". The addition of the two items about retaliation was informed by Anvari *et al*. (2019), who argued that since retaliation is a key challenge that courageous actors like whistleblowers face, the protection of courageous actors from retaliation is a possible way of empowering courageous actors such as whistleblowers. To the best of the researcher's knowledge, the present study is the first to explore the factor loadings of additional measurement items. Since the two additional items load highly on the board audit committee support construct, the present study argues that an instrument that is used to measure perceived board audit committee support should include items about protection from retaliation if the studies explain courageous acts of followers, such as internal auditors' moral courage behaviour in speaking about ethical concerns.

Based on the high factor loadings for the two additional measurement items for the perceived board audit committee support construct and the positive effect of perceived board audit committee support on internal auditors' moral courage, boards or boards' audit committees should protect internal auditors from retaliation by management and co-workers as an additional way of empowering internal auditors to engage in moral courage behaviours such as voicing ethical issues.

Hypothesis H_{04}: Internal auditors' moral courage does not significantly affect internal auditors' effectiveness

The study hypothesised that internal auditors' moral courage significantly affects internal auditors' effectiveness.

The results in Table 4.32 reveal that internal auditors' moral courage in speaking up about ethical issues significantly positively affects internal auditors' effectiveness (β = 0.483; t = 5.517; P < 0.01). Therefore, the research hypothesis is supported by the results.

Table 4.32: The relationship between internal auditors' moral courage and internal auditors' effectiveness

				Bias-corrected confidence intervals	
Path	Beta	T- value	P- value	2.50%	97.50%
MC -> IAE	0.483	6.101	0.00	0.326	0.639

Source: Research data (2022)

The findings demonstrate a significantly positive association between internal auditors' moral courage and internal auditors' effectiveness. This implies that when internal auditors courageously communicate ethical issues, internal audit effectiveness, in terms of better managerial decision-making, internal control, business process improvements, and governance, is likely to increase. This is because the courageous behaviour of expressing ethical concerns is likely to prohibit wrongdoing.

This finding is consistent with Morrison's (2011) theory that when employees speak up, depending on the content of the message and how the message is received, the message could favourably influence organisational outcomes, such as enhanced decision-making and correction of errors. The present study is also consistent with previous research that revealed a positive relationship between courageous acts, such as employees' external whistleblowing, and financial reporting quality, because external whistleblowing eliminates accounting-related misconduct (Wilde, 2017).

Previous studies have advocated for research on the influence of executive behaviours, such as ethical behaviours, on internal auditors' effectiveness (Lenz & Hahn, 2015; Kotb et al., 2020). This study contributes to the body of knowledge by highlighting the positive effect of internal auditors' moral courage to speak out against ethical issues on internal audit effectiveness. In addition, unlike earlier studies that investigated the influence of courageous acts such as external whistleblowing on specific variables such as financial reporting quality, this study examined the effect of internal auditors' moral courage behaviour on broader objectives, such as contribution to managerial decision-making, internal controls, and business process development. A high-quality financial report is not an end in itself unless it improves decision-making. This study contributes to the body of knowledge by investigating the impact of internal auditors on managerial decision-making, internal controls, business processes and governance.

In light of the findings, boards should encourage internal auditors to voice ethical concerns. However, courageous behaviours may not always positively impact managerial decision-making, internal controls, and corporate process improvement, because employees sometimes opt to retaliate against internal auditors. Consequently, motivating top audit executives to speak out is necessary but insufficient. Therefore, it is necessary to encourage internal auditors to speak and auditees to adopt these suggestions. This study further analyses the circumstances in which internal auditors' moral courage favourably impact internal auditors' effectiveness by investigating the mediating effect of internal auditors' moral courage on the relationship between board audit committee support and internal auditors' effectiveness. Lastly a significant positive relationship between internal auditors' moral courage and internal auditors' effectiveness reveals that another condition for the mediating effect of internal auditors' moral courage in the relationship between audit committee support and internal auditors' effectiveness and between CEO openness and internal auditors' effectiveness was satisfied.

Hypothesis H_{05}**: There is no mediating effect the internal auditors' moral courage in the relationship between board audit committee support and internal auditors' effectiveness.**

This study hypothesised that internal auditors' moral courage mediates the relationship between board audit committee support and internal auditors' effectiveness.

The mediation results in Table 4.33 reveal that the total effect of board audit committee support on internal auditors' effectiveness is significant (β= 0.520; t > 6.793; P < 0.01). With the inclusion of internal auditors' moral courage as a mediating variable, the direct effect of board audit committee support on internal audit effectiveness reduced but remained significant (β=0.25; t >1.96; P<0.05). The indirect effect of board audit committee support on internal auditors' effectiveness through moral courage was significant (β=0.27; t > 1.96; P < 0.01). This supports the research hypothesis that internal auditors' moral courage mediates the relationship between board audit committee support and internal auditors' effectiveness.

Table 4.33: Mediating effect of internal auditors' moral courage in the board audit committee support-internal audit effectiveness relationship

				Bias corrected confidence intervals	
Path	**Beta**	**T value**	**P values**	**2.50%**	**97.50%**
Direct effect ACS -> IAE	0.25	2.527	0.012	0.061	0.446
ACS -> MC -> IAE	0.27	5.517	0.0000	0.186	0.38
Total effect ACS -> IAE	0.520	6.793	0.000	0.361	0.658

Source: Research data (2022)

COPEN: CEO openness

IAE: Internal auditors' effectiveness

MC: Moral courage

Mediating effect (β=0.27) =total effect (β=0.520) minus direct effect (β=0.25). Since the direct, indirect, and total effects are all significant, internal auditors' moral courage partially mediates the relationship between board audit committee support and internal audit effectiveness.

This finding suggests that a supportive board audit committee makes internal auditors more effective by motivating internal auditors to act courageously when voicing ethical concerns. The results also show that the moral courage of internal auditors, encouraged by a supportive board or audit committee, has a positive effect on internal auditors' effectiveness.

This result implies that board audit committee support positively influences internal audit effectiveness, both directly and indirectly, by influencing internal auditors' moral courage. This means that when an audit committee of the board or the board cares about internal audit executives, executives are motivated to engage in moral courage behaviours, such as expressing ethical concerns, which eventually positively influence managerial decision-making, internal control, business processes, and governance.

This study is consistent with previous research (Casal & Zalkind, 1995), which used a sample of management accountants to conclude that management accountants engaged in moral courage behaviours such as whistleblowing and registered success, such as the elimination of wrongdoing, if they were supported by superiors. This reasoning draws on the power-dependence model of organisational responses to whistleblowing (Casal & Zalkind, 1995; Near & Miceli, 1985; Near & Miceli, 1987; Miceli & Near, 1992; Miceli & Near, 1994), which argues that the support of superiors to management accountants increases the perception of accountants' relative power, which eventually increases the chances of accountants' suggestions being implemented.

This study extends previous research by examining a dependent variable with more items such as managerial decision-making, internal control, and corporate governance improvement. Additionally, previous research has asked for studies on how serving two masters, the board or board audit committee, affects internal audit effectiveness (Lenz & Hahn, 2015), and subsequent research, such as Khelil et al. (2018), focused on a specific master, the board, or board's audit committee, and revealed that board audit committee support positively impacts internal audit executives' moral courage to speak up about ethical issues. This study extends Khelil et al.'s (2018) study, which examined the association between board support and internal auditors' moral courage, by examining the mediating effect of internal auditors' moral courage on the relationship between board audit committee support and internal audit effectiveness.

Furthermore, this study lends support to the social power theory and power-dependence theory of organisational responses to whistleblowing, which posit that whistleblowers are likely to be more successful when supported by superiors. With more questions about which master matters for internal audit effectiveness, where the internal auditor serves two masters (Lenz & Hahn, 2015), the present results show that a supportive board or board's audit committee is crucial for both internal auditors' moral courage and the contribution of internal auditors to managerial decision-making, internal controls, and business process improvement.

The mediation result also supports the social cognitive theory, which posits that self-regulated behaviours mediate the effects of contextual organisational variables on organisational outcomes (Bandura, 1991). Additionally, the mediating effect of internal auditors' moral courage is consistent with the power dependence model of organisational responses to whistleblowing (Casal and Zalkind 1995; Near and Miceli 1985; Near and Miceli 1987; Miceli and Near 1992; Miceli and Near 1994). Furthermore, the results partly answer the question of which ethical behaviours impact internal audit effectiveness.

The practical implication is that internal auditors should engage in morally courageous behaviours, such as expressing ethical concerns, to improve internal auditors' effectiveness. Furthermore, boards and audit committees should support internal auditors to increase the possibility of a positive effect on internal auditors' moral courage behaviours.

Hypothesis H_{06}: CEO openness does not affect the internal auditors' moral courage to speak up about ethical issues.

This study hypothesized that CEO openness significantly affects internal auditors' moral courage to speak up about ethical issues.

The results in Table 4.33 show that CEO openness is significantly and positively associated with internal auditors' moral courage (β=0.287.; t = 5.451; P < 0.01). Therefore, our findings support our research hypothesis.

Table 4.34: The Relationship between CEO openness and internal auditors' moral courage

				Bias-corrected confidence intervals	
Path	Beta	T- value	P- value	2.50%	97.50%
COPEN -> MC	0.287	5.451	0.00	0.173	0.382

Source: Research data (2022)

This result implies that internal auditors are more likely to speak up about ethical issues when they perceive CEOs as open to their ideas. This means that when CEOs show interest in internal auditors' ideas, they are motivated to express ethical concerns since CEO openness signals that speaking up is acceptable.

The study drew on Upper Echelon Theory (Hambrick & Mason, 1984), which argues that organisational outcomes, both strategies, and effectiveness, are viewed as reflections of the values and cognitive bases of powerful actors in the organisation.

These findings are consistent with previous research, which also drew on upper-echelon theory (Hambrick & Mason, 1984) to reveal a positive relationship between CEO characteristics and internal audit outcomes. For instance, Ludin et al.'s (2017) study of the Malaysian public sector revealed a positive relationship between CEOs' risk-taking propensity and risk management implementation. The present study adds to the existing body of knowledge on the relationship between CEO characteristics and internal audit behaviours by examining a CEO's openness, which, to the researcher's knowledge, has not yet been examined.

Our findings have important theoretical and practical implications. First, to the best of the researcher's knowledge, this is the first study to show the influence of a CEO on internal audit executives' moral courage. Second, it lends support to upper-echelon theory, which argues that organisational behaviours mirror CEO values (Hambrick and Mason, 1984). Thus, this study shows the wider applicability of the upper-echelon theory.

Based on the finding that CEO openness matters for internal auditors' moral courage to express ethical concerns, CEOs should be as receptive to internal audit executives' ideas as possible to signal to internal audit executives that voicing ethical concerns is acceptable. Thus, internal audit executives can be motivated to express ethical concerns.

Hypothesis H_{07}: The internal auditors' moral courage does not mediate the relationship between CEO openness and internal auditors' effectiveness.

This study hypothesised that internal auditors' moral courage mediates the relationship between CEO openness and internal audit effectiveness.

The mediation results in Table 4.35 reveal that the total effect of CEO openness on internal audit effectiveness is significant ($\beta=0.193$; $t > 1.96$; $P < 0.01$). With the inclusion of internal auditors' moral courage as a mediating variable, the direct effect of CEO openness on internal audit effectiveness decreases and becomes insignificant (β=0.055; t = 1.96; P > 0.05). The indirect effect of CEO openness on internal audit effectiveness through internal auditors' "moral courage" was significant (β=0.138; t > 1.96; P < 0.01). This supports the research hypothesis that internal auditors' moral courage mediates the relationship between CEO openness and internal audit effectiveness.

The mediation result implies that CEO openness positively affects internal audit effectiveness only indirectly by positively influencing internal auditors' moral courage.

The mediation finding implies that a CEO who is open to an internal auditor's suggestions positively influences internal audit effectiveness by motivating internal auditors' courageous behaviour. This finding also implies that internal auditors' moral courage behaviour, which is motivated by an open CEO, positively affects internal audit effectiveness.

Table 4.35: The Mediating Effect of Internal Auditors' Moral Courage in the CEO Openness-Internal Auditors Effectiveness Relationship

	Beta Coefficient	T-value	P-value
Total Effect (COPEN--> IAE)	0.193	2.935	0.003
Direct Effect (ACS--> IAE)	0.055	0.831	0.406
Indirect Effect (COPEN--->MC --->IAE)	0.138	4.143	0.000

Source: Research data (2022)

COPEN is CEO openness.
ACS is board audit committee support.
MC is internal auditors' moral courage.
IAE is internal audit effectiveness.

The mediating effect (β = 0.138) = Total effect (β = 0.193) minus the direct effect (β = 0.138).

Since the direct effect is insignificant but the indirect and total effects are significant, CEO openness affects internal auditors' effectiveness only indirectly by influencing internal auditors' moral courage behaviour.

The results suggest that internal auditors' moral courage positively mediates the relationship between CEO openness and internal audit effectiveness, which means that when a CEO is open to the suggestions of internal auditors and shows interest in the ideas of an internal auditor, the internal auditor is likely to be motivated to engage in moral courage behaviours, such as confronting peers who engage in unethical behaviours, confronting unethical managers, always stating views about ethical issues, and going against a group that violates internal auditors' ethical standards. This is because an open CEO creates a safe environment for speaking up about ethical issues and an environment that makes internal auditors believe in the ability to create change. Ultimately, moral courage behaviour is likely to positively influence internal audit effectiveness by improving managerial decision-making, business processes, internal controls, and governance.

These findings are consistent with the related literature in the form of Morrison's (2011) voice-behaviour conceptual model. According to Morrison (2011), leaders' openness is likely to positively impact employees' speaking-up behaviour because the openness of a leader makes employees perceive an environment that promotes the perception of employees' safety to speak up and creates a sense of self-efficacy—the "beliefs in one's capabilities to organise and execute the courses of action required to produce attainments" (Bandura, 1997). Ultimately, speaking-up behaviour could passively impact organisations by positively influencing organisational outcomes in the form of improved decision-making, error correction, and learning and improvement, depending on the recipients of the message implemented (Morrison, 2011). The findings are also consistent with the power-dependence model of organisational responses to whistleblowing and upper-echelon theory. The power-dependence model of organisational responses to whistleblowing posits that whistleblowers are more likely to register more success than failure when they are supported by superiors, while the upper-echelon theory posits that "both organisational results in the form of strategies and effectiveness are seen as reflections of the values and cognitive foundations of the organisation's powerful actors" (Hambrick & Mason, 1984).

CEOs who are open to internal auditors' suggestions motivate the internal auditors to speak up about ethical issues because of the perception that it is safe to speak and that speaking up will not be in vain. Because CEO openness sets the tone at the top, CEO openness, in addition to motivating internal auditors to speak up about ethical issues, potentially creates a work environment that is open to internal auditors' suggestions. Thus, the CEO's openness to internal auditors' moral courage plays a dual role in motivating internal auditors to speak up about ethical issues and empowering internal auditors to positively influence managerial decision-making, internal controls, and business process improvement. This is because the CEO's exemplary openness creates a perception of internal auditors' safety in speaking up and a work environment that accepts and implements internal auditors' recommendations.

By examining the mediating effect of an internal auditor's moral courage on the relationship between CEO openness and internal audit effectiveness, this study makes important value-added contributions to theory and practice.

First, the findings respond to calls for studies on the effects of ethical behaviours on internal audit effectiveness and how internal auditors' power affects their ability to impact internal audit effectiveness. The present study reveals that internal auditors' ethical behaviour in the form of moral courage to speak up about ethical issues driven by a supportive board or a board's audit committee positively impacts internal audit effectiveness. Additionally, this study lends support to the power-dependence model of organisational responses to whistleblowing by revealing that internal auditors who depend on the power of open CEOs achieve internal audit effectiveness in the form of improved managerial decision-making, internal control, business process improvement, and governance. This is because open CEOs draw on legitimate power to influence the implementation of internal auditor recommendations. Furthermore, this study is perhaps the first to demonstrate how the vicarious power theory explains internal audit outcomes. Vicarious power is the ability of a change agent to influence in-group behavioural changes because of the change agent's relationship with a more powerful and influential party outside the group of change agents (Anvari et al., 2019). Thus, internal auditors influence managerial decision-making, internal controls, and business process improvement and governance, drawing on vicarious power arising from relating to a more powerful party, an open CEO, who creates a favourable environment for the implementation of recommendations. Thus, the findings of this study contribute to the body of knowledge on situations in which moral courage behaviours are likely to be effective in terms of positively contributing to managerial decision-making, internal control, business process improvement, and governance.

Second, the study's findings respond to calls for studies on which and how executives' behaviours impact internal audit effectiveness. By examining the effect of CEO openness on internal audit effectiveness through internal auditors' moral courage, this study demonstrates the direct effect of CEO openness and the mechanism by which CEO openness impacts internal audit effectiveness.

Third, the study's findings respond to calls for studies on how serving two masters boards or board audit committees and top management affects internal audit effectiveness. Since existing studies on internal auditors' moral courage have so far examined the effect of only a supportive board or board's audit committee on internal auditors' moral courage to the best of the researcher's knowledge, examining the effect of CEO openness on internal auditors' moral courage contributes to the research on how another master's behaviour, CEO openness, impacts internal audits. Moreover, Morrison's (2011) conceptual voice-behaviour model hypothesises that open supervisors motivate employees to make constructive suggestions that are likely to positively influence organisational outcomes such as managerial decision-making and the correction of errors. However, Morrison recommended empirical testing of the model in different contexts, and this study tested the model in the unique context of internal auditing. The context of internal auditing is unique because internal auditors serve two masters: top management and the board, or the board's audit committee. Although internal auditors are expected to be independent of top executives, this study's findings show that contrary to the expectation that CEOs are independent of top executives and, therefore, are not expected to be swayed by top executives, CEOs' openness affects internal auditors' moral courage. CEOs in Ugandan financial institutions are so powerful that they even usurp the powers of the board, and some internal auditors believe that CEOs have the last say on internal auditors' tenure in organisations. The ability of CEOs to reward and punish internal auditors gives the CEOs the power to influence internal auditors' moral courage behaviours by speaking up about ethical issues, thus increasing internal audit effectiveness.

Therefore, CEOs who are open to internal auditors' ideas motivate internal auditors to engage in moral courage behaviours, such as speaking up about ethical issues and empowering internal auditors to influence positive changes in managerial decision-making, internal controls, business processes, and governance by influencing an environment that favours the implementation of internal auditors' recommendations.

Hypothesis H_{08}: CEO openness does not moderate the relationship between perceived board audit committee support and internal audit effectiveness.

This study hypothesised that CEO openness moderates the relationship between perceived board audit committee support and internal audit effectiveness.

Results in Table 4.36 show that the CEO's openness moderates the relationship between the perceived board audit committee's support and the effectiveness of the internal audit ($\beta = 0.297$ $t = 2.744$; $P < 0.05$). Therefore, these findings support the alternative research hypothesis.

The results of the study show that CEO openness moderates the positive relationship between perceived board audit committee support and the effectiveness of internal auditors. When the CEO is open, the effect of board audit committee support on the effectiveness of internal auditors is higher.

Table 4.36: The Moderating Effect of CEO Openness on the Relationship Between Audit Committee Support and Internal Auditors' Effectiveness Relationship

Path	Beta	T-value	P-value	Bias-corrected confidence intervals 2.50%	97.50%
COPEN x ACS -> IAE	0.297	2.744	0.006	0.033	0.45

Source: Research data (2022)

The moderation results are further explained using a simple slope diagram. Figure 4.4 is a simple-slope diagram showing how CEO openness affects the relationship between board audit committee support and the effectiveness of internal auditors.

As shown in Figure 4.4, when CEO openness is high (+1 standard deviation above the mean; green line), there is a stronger association between internal audit effectiveness and audit committee support (steeper line; green line) than when CEO openness is low (-1 standard deviation below the mean; red line), where there is a flatter slope. Thus, figure 4.4 demonstrates that for organisations with CEOs who are more receptive to internal auditors' recommendations, increases in board audit committee support translate stronger into increases in internal auditors' effectiveness than do organisations with CEOs who are less receptive to the recommendations of internal auditors.

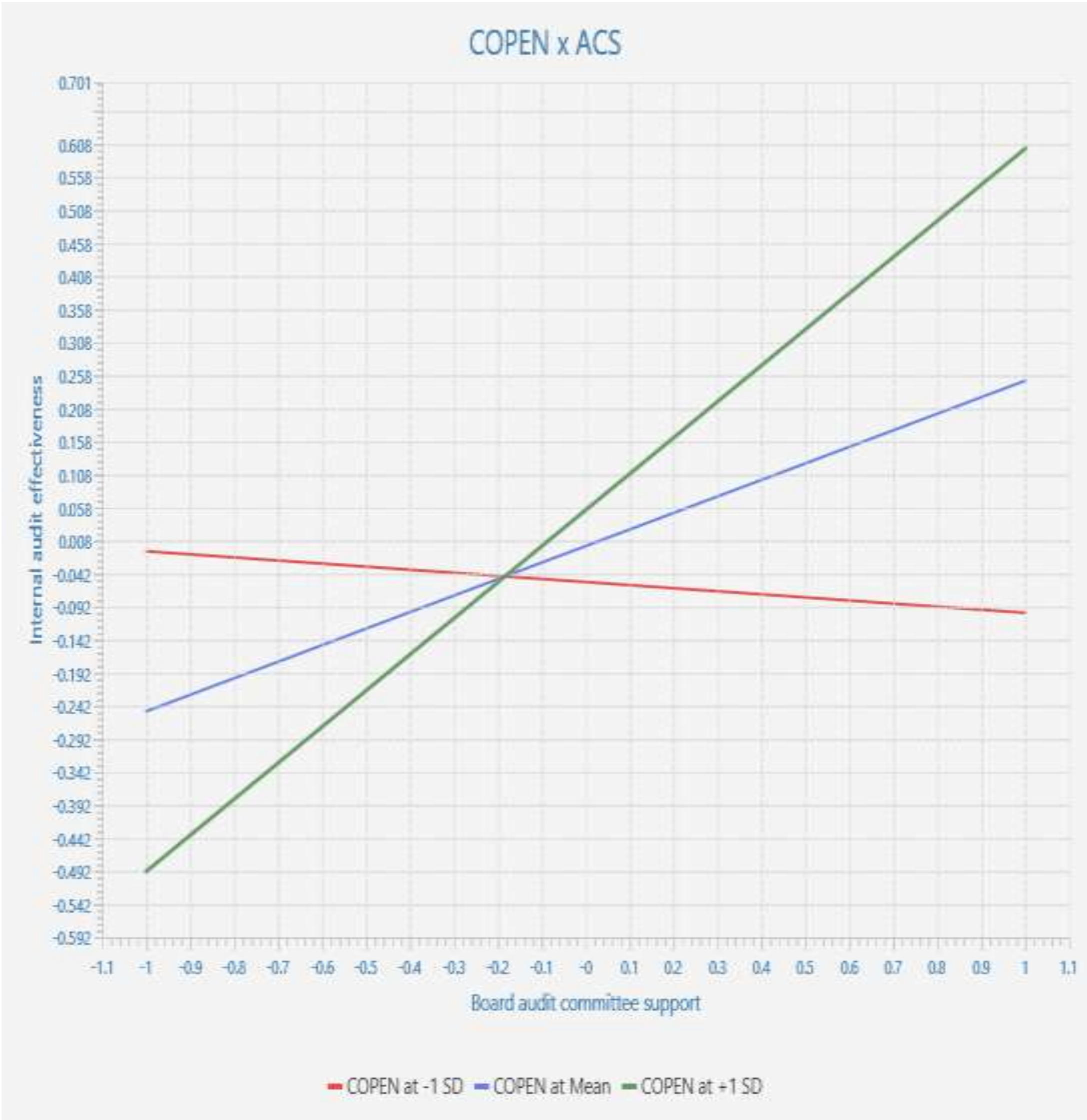

Figure 4.4: The moderating effect of CEO openness on the board audit committee support-internal auditors' effectiveness relationship

COPEN represents CEO openness, and ACS represents the board audit committee support.

The findings suggest that CEO openness significantly positively moderates the relationship between perceived board audit committee support and internal auditors' effectiveness, such that the effect of perceived board audit committee support on internal audit effectiveness is higher with more open CEOs and lower with less open CEOs. This result means that a board or board audit committee that cares about internal auditors' well-being and opinions has a greater effect on managerial decision-making, internal control, and governance when CEOs are more receptive to internal auditors' ideas.

This finding is consistent with previous research suggesting that the effects of supervisory support on organisational outcomes are mixed and depend on the behaviour of other organisational actors (Yang *et al*., 2020). This means that the effect of a supportive board on managerial decision-making, business process improvement, internal control, and governance depends on how receptive the CEOs are to the internal auditors' ideas.

This study is also consistent with previous research, which reveals that CEO behaviours affect internal audit outputs (Ludin *et al*., 2017). For example, a study by Ludin *et al*. (2017) in the public sector in Malaysia revealed that the risk-taking propensity of CEOs is positively associated with risk management implementation. However, to the best of the researcher's knowledge, no previous study has examined CEO openness or whether CEO openness moderates the effect of perceived board audit committee support on internal audit effectiveness. These findings contribute to the body of knowledge.

The present study supports contingency theory, which posits that the interaction of structures and contextual variables explains the performance differentials of firms (Donaldson, 2001; Drazin & Van de Ven, 1985). This study also provides empirical support for upper-echelon theory, which posits that organisational effectiveness reflects CEOs' values (Hambrick & Mason, 1984).

Therefore, this study shows the wider application of contingency theory and upper-echelon theory in accounting and auditing-related behavioural research. Lastly, the findings show that supportive boards and open CEOs are complementary in enhancing the effectiveness of internal auditors. The result further reveals that the openness of a CEO is a condition for a higher effect of board audit committee support on internal auditors' effectiveness

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary of Findings

The study's main objective was to examine the effects of board audit committee support and CEO openness on internal auditors' effectiveness directly and indirectly through the mediating effect of internal auditors' moral courage, as well as the moderating effect of CEO openness on the relationship between perceived board audit committee support and internal audit effectiveness, using the perceptions of internal auditors in formal financial institutions in Uganda.

With corporate scandals in financial institutions, the addition of internal auditors is of scholarly and practical interest. Scholarly interest lies in the increased understanding of the determinants of internal audit effectiveness, particularly in the developing world.

Prior research has revealed that support from a board audit committee and internal audit effectiveness are positively related. However, organisational actors' behaviours modify the relationship between support and organisational outcomes. Thus, this study examined the mediating effect of internal auditors' moral courage on the relationship between board audit committee support and internal audit effectiveness and the relationship between CEO openness and internal audit effectiveness. Additionally, this study examines the moderating effect of CEO openness on the relationship between board audit committee support and internal audit effectiveness.

This study was cross-sectional, explanatory, and followed a positive paradigm. The study collected data from 128 internal auditors from a sample of 135 auditors who were randomly selected from a population of 203 internal auditors in financial institutions, constituting a response rate of 94.5%. The data were analysed using partial least squares structural equation modelling and SPSS.

The measurement and structural models met the reliability and validity requirements. A summary of the main findings is as follows:

5.1.1 Summary of findings on the relationship between board audit committee support and internal auditors' effectiveness

The study sought to examine the relationship between board audit committee support and internal auditors' effectiveness. The research finding indicated that the extent of support provided by board audit committees has a significant effect on the effectiveness of internal auditors in various aspects, such as decision-making, internal control, business process improvement, and governance enhancement. It is demonstrated that when boards or board audit committees provide support to internal auditors, their effectiveness increases substantially, which highlights the importance of organisational support and social exchange theories in explaining the effect of board support on internal auditors' effectiveness. Additionally, it is noteworthy that protection of internal auditors from retaliation emerged as a critical aspect of board audit committee support that positively influences internal auditors' contributions to business processes, internal controls, managerial decision making and governance, particularly in facilitating the implementation of internal auditors' recommendations on the four effectiveness aspects, without fear of reprisal. In conclusion, the research emphasises the importance of board or board audit committee support in enhancing the effectiveness of internal auditors. Specifically, it highlights the significance of protection against retaliation as part of the support provided by boards or board audit committees to improve the contributions of internal auditors within organisations.

5.1.2 Summary of findings on the relationship between CEO openness and internal auditors' effectiveness

This study assessed whether the extent of openness exhibited by CEOs has any bearing on the effectiveness of internal auditors. Despite the insignificance of the direct impact of CEO openness on internal auditors' effectiveness, a significant positive indirect effect was observed. This result suggests that CEO openness exerts its influence on internal auditors' effectiveness through an intervening variable.

This study demonstrates that the openness displayed by CEOs has a significant effect on the contributions of internal auditors to various aspects of corporate governance, internal controls, and decision-making processes. However, this influence operates indirectly rather than through direct interactions. These findings reiterate the importance of recognising the intricate paths through which top executives' behaviours affect internal auditors' value addition to their organisations.

Therefore, this study underscores the complex relationship between CEO openness and internal auditors' effectiveness, emphasizing the need to thoroughly consider intervening variables when examining this connection.

5.1.3 Summary of findings on the relationship between board audit committee support and internal auditors' moral courage.

The study aimed to determine the effect of support from the board audit committee on internal auditors' moral courage to speak about ethical issues. The research findings revealed that board audit committee support is significantly positively related to increased moral courage among internal auditors. This implies that when internal auditors feel backed by their superiors, they are more inclined to voice ethical concerns due to a feeling of psychological safety. This study also highlights the significance of protection from retaliation as a vital element of board audit committee support that affects internal auditors' willingness to act ethically. Overall, the study outcomes imply that boards or board audit committees have a pivotal role in cultivating ethical behaviour within organisations by backing and safeguarding internal auditors who bring up ethical issues.

5.1.4 Summary of findings on the relationship between internal auditors’ moral courage and internal auditors’ effectiveness

This study examined the hypothesis that internal auditors' moral courage significantly influences internal auditors' effectiveness. The results reveal a significant positive association between internal auditors' moral courage and effectiveness. This suggests that when internal auditors express ethical concerns, they enhance various facets of internal audit effectiveness, including managerial decision-making, internal control, business process improvements, and governance.

This study contributes to the existing body of knowledge by highlighting the positive impact of internal auditors' moral courage on internal audit effectiveness. Unlike previous studies that focused solely on specific variables, such as financial reporting quality, this research examined the broader variables of managerial decision-making, internal controls, and business process improvement.

In summary, the significant positive relationship between internal auditors' moral courage and their effectiveness emphasizes the need for organisations to foster an environment in which internal auditors are brave enough to speak about ethical issues.

5.1.5 Summary of findings on the mediating effect of internal auditors’ moral courage in the relationship between board audit committee support and internal auditors’ effectiveness

This study examined the mediating role of internal auditors' moral courage in the relationship between board audit committee support and internal auditors' effectiveness. The findings support the research hypothesis, indicating that internal auditors' moral courage mediates this relationship.

The results suggest that a supportive board audit committee fosters internal auditors' effectiveness by encouraging them to exhibit moral courage in voicing ethical concerns. Furthermore, the alignment between board audit committee support and internal auditors' moral courage positively influences various aspects of internal audit effectiveness, including managerial decision-making, internal controls, business process improvement and corporate governance.

This study builds on previous research by expanding the understanding of the dependent variable to include a broader spectrum of items related to internal audit effectiveness. It also extends prior inquiries into the influence of multiple variables on internal auditor’s effectiveness by examining the mediating effect of internal auditors' moral courage. Furthermore, the findings align with social power theory and power dependence theory, indicating that internal auditors are more likely to succeed in their efforts when supported by superiors. The mediating effect of internal auditors' moral courage is consistent with this theoretical framework.

5.1.6 Summary of findings on the relationship between CEO openness and internal auditors' moral courage

The study hypothesised that CEO openness is related to internal auditors' moral courage to voice ethical concerns.

The results supported the hypothesis, revealing that internal auditors are more likely to speak up about ethical issues when they believe that CEOs are open to their suggestions because the openness of a top executive creates a feeling of psychological safety among internal auditors.

These findings suggest that CEO openness creates a culture where raising ethical concerns is seen as acceptable and encouraged. This is important because it can help to increase internal auditors' determination to address ethical issues. This study expands on previous research by specifically examining CEO openness, which had not been previously explored.

5.1.7 Summary of findings on the mediating effect of internal auditors' moral courage in the relationship between CEO openness and internal auditors' effectiveness

This study investigated the mediating effect of internal auditors' moral courage on the relationship between CEO openness and internal auditors' effectiveness. The findings indicated that CEO openness indirectly affects internal auditors' effectiveness by positively influencing internal auditors' moral courage. This suggests that CEO openness indirectly boosts internal auditors' effectiveness aspects such as managerial decision making, internal control, business processes and governance via encouraging internal auditors' to speak about ethical issues.

This finding contributes to theoretical understanding by elucidating a mechanism through which CEO openness influences internal auditors’ effectiveness. Furthermore, the result highlights the role of CEO openness in empowering internal auditors to contribute to their organisation by creating a feeling of psychological safety among internal auditors.

5.1.8 Summary of findings on the moderating effect of CEO openness on the relationship between audit committee support and internal auditors’ effectiveness

This study examined the moderating effect of CEO openness on the relationship between board audit committee support and internal auditors’ effectiveness. Findings revealed that CEO openness moderates the positive relationship between board audit committee support and internal auditors’ effectiveness such the effect of board audit committee support is higher with more open CEOs. This means that when CEOs are more receptive to internal auditors' ideas, the positive effect of board audit committee support on internal auditors’ effectiveness is stronger.

This study provides the first empirical evidence on the moderating role of CEO openness in the relationship between board support and internal audit outcomes.

Furthermore, the study underscores the complementary nature of supportive boards or audit committees and open CEOs in enhancing internal auditors’ effectiveness. CEO openness emerges as a crucial factor in maximizing the effectiveness of internal auditors.

Overall, the findings reveal that board audit committee support affects internal auditors’ effectiveness directly and through the mediating effect of internal auditors’ moral courage, while CEO openness affects internal auditors' effectiveness only indirectly through the mediating effect of internal auditors' moral courage. Furthermore, CEO openness moderates the relationship between board audit committee support and internal auditors' effectiveness such that the effect of board audit committee support on internal auditors' effectiveness is higher with more open CEOs and lower with less open CEOs.

5.2 Conclusions of the Study

This study aimed at examining the effects of board audit committee support and CEO openness on internal auditors' effectiveness directly and through the mediating effect of internal auditors' moral courage and the moderating effect of CEO openness on the relationship between board audit committee support and internal audit effectiveness. From the findings, the following conclusions are drawn

5.2.1 Board audit committee support and internal auditors' effectiveness

The study emphasizes the crucial role of board audit committee support in enhancing the effectiveness of internal auditors in financial institutions. Internal auditors who perceive strong support from these committees exhibit greater influence on effectiveness aspects such as managerial decision-making, internal controls, business process improvement, and governance.

5.2.2 CEO openness and internal auditors' effectiveness

While CEO openness does not directly impact internal auditor effectiveness, this study reveals a significant indirect effect. CEO openness fosters an environment in which internal auditors feel psychologically safe to voice ethical concerns, indirectly contributing to their effectiveness by influencing aspects such as managerial decision making, internal controls, business processes and governance.

5.2.3 Internal auditors’ moral courage and internal auditors’ effectiveness

The study highlights the importance of internal auditors' moral courage, which positively influences their effectiveness. When internal auditors feel courageous enough to express ethical concerns, they are more likely to speak up about ethical issues, thereby enhancing the various facets of internal audit effectiveness such as managerial decision making, internal control, business process and governance.

5.2.4 Mediating role of internal auditors’ moral courage

Internal auditors' moral courage serves as a mediating factor between both board audit committee support and CEO openness and internal auditors’ effectiveness. Fostering moral courage among internal auditors is crucial for maximizing their effectiveness, especially in environments in which board audit committee support and CEO openness are encouraged.

5.2.5 Moderating role of CEO openness

CEO openness moderates the relationship between board audit committee support and internal auditors’ effectiveness. When CEOs are more receptive to internal auditors' ideas, the positive impact of board audit committee support on internal auditors’ effectiveness is strengthened. This underscores the importance of CEO behavior in maximizing internal auditors’ effectiveness.0

5.2.6 Overall conclusion

Overall, this study explored the combined influence of board audit committee support, CEO openness, and internal auditors' moral courage on the effectiveness of internal auditors in financial institutions. The findings revealed that board audit committee support and CEO openness significantly positively contribute to internal auditors' effectiveness. While board audit committee support positively impacts internal auditors' effectiveness directly and via the mediating effect of internal auditors' moral courage, CEO openness works primarily by strengthening internal auditors' moral courage. Strong board support alone is impactful; however, CEO openness amplifies the board's effect on internal auditor effectiveness.

These results emphasize the importance of fostering a supportive culture, moral courage, and open leadership to enhance internal auditors' effectiveness. This contributes to our understanding of internal auditors' effectiveness.

5.3 Implications of the Study

5.3.1 Theoretical contributions of the study

This study answers several research questions and, by doing so, makes important theoretical contributions to the existing body of knowledge

First the study makes a theoretical contribution by revealing the mediating role of internal auditors’ moral courage in the relationship between board audit committee support and internal auditors’ effectiveness and between CEO openness and internal auditors’ effectiveness. This finding is novel and it increases understanding of mechanisms through which audit committees and top executives impact the effectiveness of internal auditors. Additionally, the study expands existing theories. This mediation finding builds on social power theory and power dependence theory, providing a clearer understanding of the mechanisms through which board support and CEO openness translate to effectiveness. Furthermore, the use of power-dependence theory helped reveal that internal auditors’ vicarious power arising from being supported by a powerful board’s audit committee positively aids internal auditors in positively affecting internal audit effectiveness. This is a significant contribution to the body of knowledge as it responds to calls for studies that explain how internal auditors' power affects internal audit effectiveness.

Second, the finding on the moderating role of CEO openness is a theoretical contribution. The study provides the first empirical evidence demonstrating that CEO openness moderates the positive relationship between board audit committee support and internal auditors' effectiveness. The theoretical contribution to the body of knowledge is in highlighting the interplay of factors. This finding emphasizes the complementary nature of supportive boards and open CEOs in maximizing internal auditors' effectiveness.

Third, the study makes a theoretical contribution in form of the indirect effect of CEO openness on internal auditors' effectiveness which refines the understanding of how CEO openness impacts internal auditors' effectiveness. While CEO openness does not directly impact effectiveness, it fosters a psychologically safe environment for speaking up about ethical concerns, indirectly contributing to effectiveness. Moreover, this research extends prior investigations by delving into the previously unexplored function of CEO openness in shaping internal auditor behavior and effectiveness.

The forth theoretical contribution is in form of a broader scope of effectiveness. This study extends previous studies that focused on narrower effectiveness aspects such as financial reporting quality, by broadening its focus to incorporate aspects of managerial decision-making, internal controls, business process enhancement, and governance. This study provides a more holistic perspective which provides a more comprehensive understanding of the various aspects of internal audit effectiveness

The fifth theoretical contribution is in form of underlining the importance of fostering moral courage. This study underlines the impact of internal auditors' moral courage on internal auditors’ effectiveness across various aspects.

Fifth, this study contributes to the existing body of knowledge using evidence from Uganda, a developing country. The use of Ugandan evidence contributes to addressing concerns about limited research in a developing country context. Developing countries are characterised by underdeveloped corporate governance; therefore, this study’s findings contribute to an understanding of how to improve internal auditing and, ultimately, governance in contexts with underdeveloped governance.

Sixth, because the research findings are consistent with the chosen theories, namely the upper echelon theory, the power dependence theory, the social exchange theory, the organisational support theory, and the contingency theory, this study shows the wider application of the theories.

Overall, this study significantly advances our understanding of the factors influencing internal auditors' effectiveness by exploring the interplay of board support, CEO openness, and internal auditors' moral courage. The findings offer valuable insights for both researchers and practitioners seeking to enhance internal auditors’ effectiveness within organizations.

5.3.2 Recommendations to practitioners

This study makes several recommendations to practitioners

First, financial institutions should focus on enhancing the support provided by board audit committees to internal auditors. This includes implementing measures to safeguard internal auditors from retaliation, as it has become a vital factor affecting internal auditors' moral courage behaviour and effectiveness.

Second, CEOs should encourage an open environment that enables internal auditors to freely express their ethical concerns. This can be accomplished by establishing effective communication channels, maintaining a responsive attitude toward feedback, and cultivating a culture that values and rewards the proactive participation of internal auditors.

Third, Managers and leaders should acknowledge the significance of internal auditors' moral courage as a mediator that connects board audit committee support and effectiveness of internal auditors. It is crucial to create an environment that encourages internal auditors to voice their concerns about ethical issues without fear of retaliation.

Forth, organizations should take into account the impact that CEO behavior has on the effectiveness of internal auditors. It is essential to establish strategies that urge CEOs to be more receptive to the suggestions of internal auditors, acknowledging the substantial influence it can exert on the overall efficiency.

Fifth, a supportive board is not sufficient to guarantee internal audit effectiveness. CEO openness enhances the effect of a supportive board on internal audit effectiveness. Therefore, CEOs should always be open to internal auditors' ideas, even when boards or board audit committees are supportive of internal auditors, to complement board audit committees in enhancing internal audit effectiveness.

Fifth, when recruiting chief executive officers, boards should select chief executive officers who are likely to show receptiveness to the ideas of internal auditors, as open CEOs are likely to give internal auditors the confidence to make constructive suggestions.

Sixth, in leadership development trainings, boards should encourage chief executive officers to be receptive to internal auditors' ideas to motivate internal auditors to speak out about ethical issues. Furthermore, boards should encourage internal auditors to display courage to speak out about ethical issues to attain internal auditing objectives.

Seventh, boards should protect internal auditors from retaliation from coworkers and executives, as protection from retaliation has been proven to be a significant aspect of a supportive board that affects internal auditors' motivation to speak out about ethical issues and, ultimately, internal audit effectiveness.

5.3.3 Recommendations for Policy

The study has key implications for policy;

First, boards and audit committees should create a checklist of behaviours that matter to leaders. The behaviours on the list should include openness and moral courage. These behaviours should be considered when recruiting internal auditors and CEOs.

Second, corporate governance guidelines should be amended to mandate the board or the board's audit committee to design policies on the protection of internal auditors against retaliation by coworkers and management. Examples of protection policies include

Third, professional bodies such as the Institute of Internal Auditors (IIA) should issue guidelines on appropriate behaviours that could affect internal audit effectiveness. CEO openness and moral courage should be included in this list.

Fourth, boards should make a behavioural evaluation part of the appraisal exercise for internal auditors and CEOs, and some of the behaviours to appraise should include CEO openness and moral courage.

5.4 Suggestions for Future Studies

In light of the limitations of this study, several recommendations are made.

First, future studies should empirically examine the effects of other executive behaviours such as CEO narcism, CEO power, internal audit executives' emotions, CEO emotions, internal audit executives' political skills, and internal audit effectiveness. Some studies, such as those in strategic management, have used stated behaviours to explain organisational outcomes. However, the effect of such behaviours on internal audit effectiveness has yet to be examined to the researcher's knowledge. With increasing recognition that internal auditors are partners in strategic management, examining the effects of behaviours studied in strategic management on internal audit effectiveness could make a key value-added contribution to the internal auditing body of knowledge.

Second, future studies should investigate the effects of contextual factors, including organizational culture, industry-specific regulations, and the level of corporate governance maturity, which may offer a deeper understanding of the observed relationships. Future research could examine how these contextual factors interact with board audit committee support, CEO openness, and internal moral courage to offer insights on how the interaction affects internal auditors' effectiveness

Third, future studies should supplement quantitative results with qualitative methods, such as interviews or case studies, because qualitative studies can lead to a deeper understanding of the underlying mechanisms of the observed relationships. Qualitative research could uncover subtle perspectives, motivations, and behaviors that may not be fully captured through quantitative analysis alone.

Forth, future studies should undertake comparative studies across various countries, industries, or organizational sizes since this may offer valuable insights into how cultural, regulatory, or structural discrepancies impact observed relationships. By examining the outcomes in different contexts, researchers can identify both universal principles and context-specific aspects that affect the effectiveness of internal auditors.

Fifth, this study captures internal auditors’ views. Future research can capture the views of audit committees and external auditors, and the findings can be compared with those of existing studies.

Sixth, this study used a cross-sectional design. In future, a longitudinal study should be conducted since this would enable researchers to monitor the evolvement of the relationships between board audit committee support systems, CEO openness, internal auditors' moral courage to speak up about ethical issues, and the effectiveness of internal auditors as they unfold over an extended period. By collecting longitudinal data, researchers would be able to uncover the dynamic nature of these connections and gain crucial insights into the underlying causal factors and potential shifts in effectiveness that may occur over time

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APPENDICES

Appendix I: Questionnaire

Dear Sir/Madam, I am a Ph.D. student conducting a study titled "Perceived Board Audit Committee Support, Internal auditors' moral courage, CEO Openness and internal audit effectiveness. A case of formal financial services in Uganda". I am humbly requesting you to spare some time and complete this questionnaire and kindly be as honest as possible. The information provided is purely for academic purposes and will be treated with the utmost confidentiality. After the study, I will be glad to send you the summary of our findings. Please be assured of complete anonymity. Thank you for participating and making this study a success. For any inquiries, kindly call or WhatsApp +256772339393 or send an email to dnyamuyonjo@gmail.com

Background Information

Gender

Male ( )

Female ( )

Respondent's age category (in years)

Below 29 years ( )

29-36 ( )

37-44 ( )

45-52 ( )

Above 52 ( )

Respondent's highest academic achievement

Certificate	( )	Masters Degree	( )
Undergraduate diploma	( )	PhD	( )
Undergraduate degree	( )	Post Graduate Diploma	( )

Are you a member of a professional body such as CPA, ACCA?

Yes ( ) No ( )

Your work experience (In years)

Below 9 ( )

10-18 ( )

19-27 ( )

28-36 ( )

Over 36 ( )

FIRM CHARACTERISTICS

Category of Financial Institution

Commercial Bank ( )

Credit Institution ( )

Micro Finance Institution ( )

Insurance ( )

Development Bank ( )

Capital markets advisor/brokerage firm ( )

Pension Fund ( )

BOARD AUDIT COMMITTEE SUPPORT

The statements under this heading are about your perception of the support that the board or audit committee of the board renders to internal audit. However, if the firm does not have an audit committee of the board, then the same statements will relate to the support that the Board of Directors (rather than the audit committee of the board) renders to internal audit. You will then substitute the word "audit committee" with "the board". For each statement, show your level of agreement by ticking one of the five options of strongly disagree (SD), disagree (D), neutral, agree (A), and strongly agree (SA).

	Board audit committee support	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
ACS1	My Audit Committee/Board of Directors strongly considers my goals and values.	1	2	3	4	5
ACS2	Help is available from my Audit Committee/Board of Directors when I have a problem**.**	1	2	3	4	5
ACS3	My Audit Committee/Board of Directors really cares about my well- being	1	2	3	4	5
ACS4	My Audit Committee/Board of Directors would forgive an honest mistake on my part.	1	2	3	4	5
ACS5	If given the opportunity, my Audit Committee/Board of Directors would take advantage of me.	1	2	3	4	5
ACS6	My Audit Committee/Board of Directors is willing to help me if I need a special favor.	1	2	3	4	5

ACS7	My Audit Committee/Board of Directors shows very little concern for me	1	2	3	4	5
ACS8	My Audit Committee/Board of Directors cares about my opinions.	1	2	3	4	5
ACS9	My audit committee/Board of Directors would protect me against any retaliation by co-workers, if I express ethical concerns	1	2	3	4	5
ACS10	In case top management retaliates if I express ethics concerns, the audit committee/ the Board would protect me	1	2	3	4	5

MORAL COURAGE OF THE INTERNAL AUDITOR

Indicate the extent to which each of the following statements reflects what you would do at work. For each statement, choose one of the five options: "Very untrue of me"(VUT); "Untrue of me"(UT), "Neutral"(N); "True of me"(T), or "Very true of me"(VT).

	Moral Courage of Internal auditors	**Very untrue of me**	**Untrue of me**	**Neutral**	**True of me**	**Very true of me**
MC1	I will confront my peers if they commit an unethical act.	1	2	3	4	5
MC2	I will confront my manager if he/she commits an unethical act.	1	2	3	4	5
MC3	I will always state my views about ethical issues to my supervisors	1	2	3	4	5
MC4	I will go against the group's decision whenever it violates my ethical standards	1	2	3	4	5

	CEO openness	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
COPEN 1	Our CEO is open to new ideas	1	2	3	4	5
COPEN 2	Our CEO is receptive to our suggestions	1	2	3	4	5
COPEN 3	Our CEO is interested in our ideas	1	2	3	4	5
COPEN 4	Our CEO has often rejected our ideas (Reverse coded_	1	2	3	4	5
COPEN5	Our CEO has often dismissed our suggestions (Reverse coded)	1	2	3	4	5

EFFECTIVENESS OF INTERNAL AUDITORS

By ticking one of the five options: "Strongly Disagree (SD)", Disagree (D); "Neutral (N)"; "Agree (A)" or "Strongly agree (SA", indicate the extent of your agreement with each of the following statements. This is the final section of the questionnaire.

	Effectiveness of internal auditors	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
IAE1	In this firm, internal auditors' recommendations have a major impact on the business processes.	1	2	3	4	5
IAE2	In this firm, internal auditors' recommendations greatly impact the improvement of the governing process.	1	2	3	4	5

IAE3	In this firm, improvements in internal control are a direct consequence of the internal auditors' activity.	1	2	3	4	5
IAE4	In this firm, the information from the internal auditors is a valuable Input into the managerial decision-making process	1	2	3	4	5
IAE5	In the managerial decision-making process, management takes into account the recommendations of the internal auditors (where possible)	1	2	3	4	5
IAE6	Internal auditors in this firm provide to the firm benefits that I expect from the department.	1	2	3	4	5
IAE7	In this firm, the internal auditors' recommendations are underutilized (Reverse coded	1	2	3	4	5

Appendix II: Letter to the Human Resource Department of a Financial Institution

C/O MOI UNIVERSITY

P.O BOX

ELDORET KENYA

OR

MAKERERE UNIVERSITY BUSINESS SCHOOL

P.0 BOX 1337 KAMPALA

DATE………../…………./……………

THE…………………………………….

………………………………………….

P.O BOX……………………………….

………………………., UGANDA

Dear Sir/Madam

RE: Ph.D. RESEARCH REQUEST

The above subject refers. I am a lecturer at Makerere University Business School and am pursuing a Ph.D. in Business Management from Moi University, Kenya. My topic is "Perceived Board Audit Committee Support, CEO Openness, Internal Auditors' Moral Courage, and Internal Audit Effectiveness in Formal Financial Institutions in Uganda. I target internal auditors in financial institutions because of their expertise in this area of study.

The purpose of this letter is to humbly request permission to collect data from internal auditors. The name of the financial institution or respondent is not mentioned anywhere in the report. All responses will be kept confidential and purely for academic purposes. Therefore, be assured of complete anonymity. After data analysis, I am glad to share my research findings with you.

I will be very grateful if you help me on this academic journey by answering all the questions.

Yours faithfully

Nyamuyonjo David, Ph.D. student
Contacts: +256772339393
Emails: dnyamuyonjo@gmail.com and dnyamuyonjo@mubs.ac.ug

Appendix III: Introductory Letter from Moi University

MOI UNIVERSITY
SCHOOL OF BUSINESS AND ECONOMICS
POSTGRADUATE OFFICE

Tel: 0722271134
0722685969

P.O. Box 3900
Eldoret.
KENYA

Fax No: (053) 43047
Telex No. MOIVARSITY 35047

RE: SBE/PGR/REC/11

DATE: 8th October, 2021

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: NYAMUYONJO DAVID – SBE/DPHIL/BM/011/17

The above named is a bonafide student of Moi University School of Business and Economics, pursuing a Doctor of Philosophy in Business Management degree, specialising in **Accounting.** He has completed coursework, defended his proposal, and currently he is proceeding to the field to collect data for his research titled: **"Perceived Board Audit Committee Support Chief Audit Executives' Moral Courage, CEO Openness and Internal Audit Effectiveness: A case of Financial Services in Uganda."**

Any assistance accorded to him will be highly appreciated.

Yours faithfully,

DEAN
School of Business and Economics
MOI UNIVERSITY

DR. RONALD BONUKE
CHAIR POSTGRADUATE,
SCHOOL OF BUSINESS AND ECONOMICS.

RB/ms

(ISO 9001:2015 Certified Institution)

Appendix IV: Research Ethics Clearance

BISHOP STUART UNIVERSITY

P.O.BOX 9, MBARARA

Tel: 0772 512551

Website: www.bsu.ac.ug

E-mail: rec@bsu.ac.ug/info@bsu.ac.ug

RESEARCH ETHICS COMMITTEE

BISHOP STUART UNIVERSITY
RESEARCH ETHICS COMMITTEE
24 SEP 2022
APPROVED VALID UNTIL DATE SHOWN ABOVE
P.O.BOX 09, MBARARA

24/09/2021

To: David Nyamuyonjo
SBE/DPHIL/BM/11/17
Moi University, Eldoret Kenya

Type: Initial Review

RE: BSU-2021-408: PERCEIVED BOARD AUDIT COMMITTEE SUPPORT, CHIEF EXECUTIVE OFFICERS' OPENNESS, INTERNAL AUDITORS' MORAL COURAGE AND INTERNAL AUDIT EFFECTIVENESS IN FORMAL FINANCIAL INSTITUTIONS IN UGANDA, 97-2003, 2021-05-09

I am pleased to inform you that at the 2nd convened meeting on **09/09/2021**, the Bishop Stuart University (BSU) REC, committee meeting, voted to approve the above referenced application. Approval of the research is for the period of **24/09/2021** to **24/09/2022.**

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for rereview and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of **24/09/2024** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.

The following is the list of all documents approved in this application by Bishop Stuart University (BSU) REC:

No.	Document Title	Language	Version Number	Version Date
1	Data collection tools	English	97-2003	2021-05-09
2	Informed Consent forms	English	97-2003	2021-05-09
3	Covid-19 Management Plan	English	97-2003	2021-05-09
4	Protocol	English	97-2003	2021-05-09

Yours Sincerely

Godfrey Rukundo
For: Bishop Stuart University (BSU) REC

BISHOP STUART UNIVERSITY
RESEARCH ETHICS COMMITTEE
24 SEP 2022
APPROVED VALID UNTIL DATE SHOWN ABOVE
P.O.BOX 09, MBARARA

Appendix V: Random Sample Table for Internal Auditors in Commercial Banks

Internal auditor	Random number generated using Microsoft Excel	Sample	Sampled respondent
1	0.23829692	***1***	***63***
2	0.996171598	***2***	***57***
3	0.165296465	***3***	***70***
4	0.083057485	***4***	***71***
5	0.168311973	***5***	***69***
6	0.473212067	***6***	***18***
7	0.2360023	***7***	***13***
8	0.359303205	***8***	***72***
9	0.697895559	***9***	***39***
10	0.836982429	***10***	***4***
11	0.734906517	***11***	***65***
12	0.325052373	***12***	***44***
13	0.05960681	***13***	***28***
14	0.953829264	***14***	***45***
15	0.502720981	***15***	***3***
16	0.370943934	***16***	***5***
17	0.988995144	***17***	***51***
18	0.043156447	***18***	***36***
19	0.400447706	***19***	***41***
20	0.32140827	***20***	***53***
21	0.249462467	***21***	***7***
22	0.274335329	***22***	***1***
23	0.310902969	***23***	***21***
24	0.994998762	***24***	***22***
25	0.387643738	***25***	***64***
26	0.732032058	***26***	***56***
27	0.92101317	***27***	***23***
28	0.139820628	***28***	***20***
29	0.938279663	***29***	***35***
30	0.362003508	***30***	***12***
31	0.801083656	***31***	***32***
32	0.353164667	***32***	***8***
33	0.46083914	***33***	***30***
34	0.857330766	***34***	***16***
35	0.323546227	***35***	***47***
36	0.191490754	***36***	***59***
37	0.588690427	***37***	***25***
38	0.499451311	***38***	***19***

39	0.065287384	***39***	***54***
40	0.530308323	***40***	***61***
41	0.19954975	***41***	***33***
42	0.900281618	***42***	***6***
43	0.522988281	***43***	***46***
44	0.124887095	***44***	***38***
45	0.147419882	***45***	***15***
46	0.477692465	***46***	***62***
47	0.377206126	***47***	***43***
48	0.983613965	***48***	***40***
49	0.999126078	***49***	***67***
50	0.938379242	***50***	***37***
51	0.175681117	***51***	***60***
52	0.895437777	***52***	***9***
53	0.234007864		#NUM!
54	0.407201675		#NUM!
55	0.713801353		#NUM!
56	0.29761529		#NUM!
57	0.017420193		#NUM!
58	0.824480751		#NUM!
59	0.386079672		#NUM!
60	0.632560467		#NUM!
61	0.447676365		#NUM!
62	0.51506131		#NUM!
63	0.011674561		#NUM!
64	0.286410122		#NUM!
65	0.092656629		#NUM!
66	0.70002503		#NUM!
67	0.55639709		#NUM!
68	0.7395235		#NUM!
69	0.034663063		#NUM!
70	0.018381905		#NUM!
71	0.024045881		#NUM!
72	0.060393286		#NUM!
73	0.94623419		#NUM!
74	0.961826141		#NUM!
75	0.971109579		#NUM!
76	0.738942103		#NUM!

Appendix VI: Random Sample Table for Internal Auditors in Credit Institutions

Internal auditor	Random numbers	Sample	Internal auditor randomly selected
1	0.487221622	1	11
2	0.612700708	2	5
3	0.748488152	3	7
4	0.744939889	4	1
5	0.339688921	5	10
6	0.662405251	6	2
7	0.430144277	7	14
8	0.700054439	8	13
9	0.971211994	9	6
10	0.549584344		
11	0.286442454		
12	0.84582582		
13	0.65200857		
14	0.651836226		

Source (Sampling frame)

Appendix VII: Random Sample Table for Internal Auditors in MDIs

Internal auditor	Random numbers generated using excel	Sample	Randomly Selected internal auditor
1	0.838601958	1	10
2	0.505606838	2	7
3	0.386051591	3	1
4	0.374270889	4	11
5	0.34291206	5	2
6	0.338925393	6	12
7	0.844090374	7	3
8	0.260821967	8	4
9	0.301155876		
10	0.929132233		
11	0.744790446		
12	0.417550264		

Source: Sampling frame data

Appendix VIII: Random Sample Table for Internal Auditors in Development Banks

Internal auditor	Random numbers	Internal auditor sampled
1	0.456821729	2
2	0.982418254	4
3	0.047523714	1
4	0.669280071	
5	0.076197822	

Source: Sampling frame data

Appendix IX: Random Sample Table for Internal Auditors in Development Banks

Internal auditor	**Random number**	**Sample**	**Internal auditor cha**
1	0.137689	1	**2**
2	0.597586	2	**3**
3	0.353145		

Source: Sampling frame

Appendix X: Random Sample Table for Internal Auditors in the Pension Fund

Internal auditor	Random number	Sample	Internal auditor sampled
1	0.197603118	1	**3**
2	0.248787038	2	**2**
3	0.534497195		

Source: Sampling frame

Appendix XI: Missing Value Analysis

Item Code	**Number**	**Missing**	**Minimum**	**Maximum**
ACS 1	128	0	1	5
ACS 2	128	0	1	5
ACS 3	128	0	1	5
ACS 4	128	0	1	5
ACS 5	128	0	2	5
ACS 6	128	0	1	5
ACS 7	128	0	2	5
ACS 8	128	0	1	5
ACS 9	128	0	1	5
ACS 10	128	0	2	5
COPEN1	128	0	1	5
COPEN2	128	0	1	5
COPEN3	128	0	1	5
COPEN4	128	0	2	5
COPEN5	128	0	1	5
MC1	128	0	2	5
MC2	128	0	2	5
MC3	128	0	2	5
MC4	128	0	3	5
IAE1	128	0	1	5
IAE2	128	0	2	5
IAE3	128	0	2	5
IAE4	128	0	2	5
IAE5	128	0	2	5
IAE6	128	0	2	5
IAE7	128	0	1	5

Source: Research data (2022)

Appendix XII: Random Table for the Sample of Respondents

Internal auditor	Random numbers generated using excel	Sample	Respondent randomly selected
1	0.838601958	1	10
2	0.505606838	2	7
3	0.386051591	3	1
4	0.374270889	4	11
5	0.34291206	5	2
6	0.338925393	6	12
7	0.844090374	7	3
8	0.260821967	8	4
9	0.301155876		
10	0.929132233		
11	0.744790446		
12	0.417550264		

Source: Sampling frame data from institutions

Appendix XIII: Plagiarism Certificate

SR308

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