

Senior Management Support Moderates the Influence of Auditor Characteristics on Internal Audit Effectiveness

Dukungan Manajemen Senior Memoderasi Pengaruh Karakteristik Auditor Terhadap Efektivitas Audit Internal

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Abstract - This study aims to examine and analyze the influence of internal auditor integrity and moral courage on internal audit effectiveness, as well as to evaluate the moderating role of senior management support. The object of this research is internal auditors working at the BPKP Representative Office of West Kalimantan Province. The sample was determined using a census method involving 43 auditors. Primary data were collected through questionnaires. The analysis method used in this study is structural equation modelling (SEM) with a partial least squares (PLS) approach, processed using the warp-PLS 8.0 application. The novelty of this study lies in the use of warp-PLS, which is still rarely applied in internal audit research, and the specific focus on internal auditors at BPKP, a government institution with a strategic role in public sector supervision. The results show that internal auditor integrity and moral courage have a positive and significant effect on internal audit effectiveness. Furthermore, senior management support is proven to strengthen the connection between individual auditor characteristics and audit effectiveness. This research highlights the importance of integrity, moral courage, and organizational support in building an effective and accountable internal control system, especially within the public sector.

Keywords: Internal Audit Effectiveness, Internal Auditor Integrity, Moral Courage, Senior Management Support.

Abstrak - Penelitian ini bertujuan untuk menguji dan menganalisis pengaruh integritas auditor internal dan keberanian moral terhadap efektivitas audit internal, serta melihat peran dukungan manajemen senior sebagai variabel moderasi. Objek dalam penelitian ini adalah auditor internal yang bekerja di BPKP Perwakilan Provinsi Kalimantan Barat. Sampel diperoleh dengan teknik sensus terhadap 43 auditor. Data primer dikumpulkan melalui penyebaran kuesioner. Metode analisis yang digunakan dalam penelitian ini adalah structural equation modeling (SEM) dengan pendekatan partial least squares yang diolah menggunakan aplikasi warp-PLS 8.0. Penggunaan aplikasi warp-PLS dan fokus objek pada auditor internal di lingkungan BPKP merupakan novelty dalam penelitian ini, karena penelitian sebelumnya umumnya menggunakan SPSS atau smart-PLS dan belum banyak mengkaji konteks BPKP. Hasil penelitian menunjukkan bahwa integritas auditor internal dan keberanian moral berpengaruh positif dan signifikan terhadap efektivitas audit internal. Selain itu, dukungan manajemen senior terbukti memperkuat hubungan antara karakteristik individu auditor dengan efektivitas audit. Penelitian ini menegaskan pentingnya nilai integritas, keberanian moral, dan dukungan organisasi dalam menciptakan sistem pengawasan internal yang efektif dan akuntabel, terutama di sektor publik.

Kata Kunci: Dukungan Manajemen Senior, Efektivitas Audit Internal, Integritas Auditor Internal, Keberanian Moral.

INTRODUCTION

Internal audit is one of the key components in an effective organizational governance system (good governance). This function not only plays a role in verifying compliance with policies and procedures, but also contributes to enhancing operational efficiency, transparency, and public accountability (Alzeban 2022). In the context of modern organizations, internal audit has evolved into a strategic function that provides added value through risk evaluation, internal control, and improvement recommendations for organizational operations. The effectiveness of internal audit serves as a benchmark for the success of this role in helping organizations achieve their goals efficiently and accountably (Pham et al., 2023).

The success of internal audit implementation is highly determined by a combination of institutional capacity and the individual quality of auditors. Personal characteristics such as integrity and moral

courage play a crucial role in ensuring that auditors act independently and objectively (Khelil et al. (2018). Auditors with high integrity tend to uphold honesty and professional ethics and are not easily influenced by personal interests or external pressures (Gamayuni 2016). Furthermore, moral courage enables auditors to report audit findings truthfully, even when faced with structural pressure or potential conflicts of interest (Madawaki et al. 2022). This becomes particularly important in the public sector, where auditor independence is often challenged by interventions from superiors or political officials. Soekarso, (2015) emphasizes that integrity and moral courage of auditors are prerequisites for building internal audit effectiveness that is capable of objectively detecting irregularities.

However, personal characteristics of auditors alone are not sufficient to ensure internal audit effectiveness. Its effectiveness is also highly influenced by the organizational environment, particularly support from senior management. A study by Endaya & Hanefah (2016) shows that management support acts as a moderating factor that strengthens the influence of auditor characteristics on audit effectiveness. This support includes providing adequate resources, guaranteeing auditor independence, wide access to information, and a serious commitment to following up on audit findings. In addition, research by Sheriff (2021) finds that management policies and active involvement, including in the evaluation and review of internal audits, have a significant relationship with the success of the internal audit function. The findings of Alsabti & Khalid, (2022) also reinforce this by showing that management involvement in the audit process directly correlates with improved internal control quality and stakeholder trust in the organization's oversight system.

The high number of irregularities in budget management within the government sector indicates that the internal audit function still faces various challenges. Practices such as expenditure manipulation, fund misappropriation, and weak oversight indicate the need to improve internal audit effectiveness as a control tool. Strengthening the professional capacity of auditors and full support from management are therefore key factors in enhancing internal audit performance (Setyaningrum & Kuntadi 2019). An effective internal audit not only functions as a tool for detecting irregularities but also acts as a strategic partner to management in realizing open, accountable, and long-term oriented public governance (Arena & Azzone, 2009).

A series of corruption cases uncovered in West Kalimantan in recent years reflect the weaknesses of internal control systems and the suboptimal role of oversight functions in the public sector. In 2022, the Village Head of Nanga Libas, Sokan Subdistrict, Melawi Regency initials KK was arrested for allegedly embezzling village funds amounting to IDR 1.5 billion over two fiscal years. The funds were used for personal interests, including buying a car and spending on entertainment at karaoke venues. Furthermore, in 2023, the West Kalimantan Regional Police named three suspects in a corruption case involving grant funds for the construction of the Melawi Grand Mosque, with state losses reaching IDR 11.1 billion based on an audit by the audit board of the Republic of Indonesia (BPK RI) West Kalimantan Representative Office. These two cases underline the importance of auditor integrity and moral courage in uncovering irregularities, as well as the necessity of senior management support to seriously follow up on audit findings. Thus, this reinforces the urgency of strengthening internal audit effectiveness as a tool for corruption detection and prevention in government environments (Hendra Cipta, 2022).

Divergent findings from previous research also form one of the rationales for conducting this study. The research by Yanti & Permatasari, (2020) found that internal auditor integrity has a significant influence on internal audit effectiveness. However, other studies such as Prihartono et al. (2018) produced different results, showing that internal auditor integrity does not have a significant influence on internal audit effectiveness. As for the second independent variable, moral courage, the study by Khelil (2022) indicated that this variable does not significantly affect internal audit effectiveness. Conversely, a different outcome is shown by the research of Sirajuddin & Merlin, (2019), which stated that moral courage has a significant effect on internal audit effectiveness.

The novelty of this study lies in testing the role of senior management support as a moderating variable. Moreover, this research utilizes warp-PLS as the analytical tool, which allows for the testing of nonlinear relationships and moderation interactions more accurately than conventional SEM approaches. This study is also conducted at the representative office of the financial and development supervisory agency (BPKP), a context that has not been widely examined in similar studies, thereby providing new

contextual contributions to the literature on internal auditing in Indonesia's public sector. The aim of this research is to examine and analyze the influence of integrity and moral courage on internal audit effectiveness, and to evaluate the extent to which senior management support can strengthen the relationship between auditor characteristics and audit outcomes.

This research is expected to contribute to a better understanding of the importance of internal auditor integrity and moral courage in supporting internal audit effectiveness. In addition, this study provides an overview of how top-level management support can serve as a reinforcer of that relationship, so that the results may serve as a foundation for organizations, including BPKP, to formulate strategies for strengthening internal control systems. These findings can also serve as a reference in policymaking regarding internal auditor human resource development, ethical enforcement, and enhanced management roles in supporting oversight functions. Therefore, this study is expected to contribute to efforts to strengthen public sector governance in a more comprehensive and sustainable manner.

LITERATURE REVIEW

Contingency Theory

Contingency theory is one of the approaches in organizational theory that posits there is no single best way to manage an organization or carry out a function, as the effectiveness of an action depends on specific situational or environmental conditions. In the context of internal auditing, Contingency theory explains that the effectiveness of the audit function is not solely determined by the audit procedures used or the technical competence of the auditor, but is also significantly influenced by situational factors such as organizational structure, corporate culture, and support from senior management (Donaldson, 2001).

Entity Theory

Entity theory underpins the concept that a company is an economic unit with a distinct legal identity, separate from its owners. From this perspective, all transactions, recordings, and financial reporting must be viewed from the standpoint of the entity, not the owners or other stakeholders. This theory positions the entity as a legal and economic subject responsible for independently accounting for all of its operational activities (Endaya & Hanefah, 2016).

In the context of internal auditing, entity theory emphasizes that oversight responsibility for the company's operational and financial matters lies within the structure of the entity itself. The internal audit function becomes critically important as a tool used by the entity to monitor and evaluate its internal activities and ensure compliance with accounting standards, laws, and organizational policies. The effectiveness of internal audit serves as an important indicator in assessing an entity's accountability and governance practices. According to Pickett (2005), the effectiveness of internal audit is influenced by factors such as the independence and competence of internal auditors, as well as support from management. Strong management support enhances the role of audit in improving corporate governance.

Internal Audit Effectiveness

Internal audit effectiveness refers to the extent to which the internal audit function succeeds in achieving its objectives, namely assessing and improving risk management, internal control, and organizational governance. An effective internal audit not only identifies errors or potential fraud but also provides accurate and impactful recommendations to improve organizational performance. Additionally, this effectiveness reflects the audit's contribution to operational efficiency and organizational integrity.

According to Yanti & Permatasari (2020), internal audit effectiveness is evident from its ability to detect and prevent irregularities, as well as add value to the organization. Pham et al. (2023) state that effectiveness is influenced by several key factors, including auditor competence, independence, audit quality, and senior management support. This support may take the form of resource provision, assurance of auditor independence, and follow-up on audit findings. Without such support, technical capabilities alone are insufficient to ensure effective audit implementation. In practice, effective internal audits are not only verifications but also serve a strategic role as management's partner in creating value and strengthening accountability. Therefore, internal audit effectiveness is a vital measure of how well an organization implements good governance principles.

Internal Auditor Integrity

Integrity is one of the fundamental values in the auditing profession, reflecting honesty, sincerity, and consistency in acting according to ethical and moral principles (Yanti & Permatasari, 2020). Integrity is not only about being truthful but also about the commitment to doing the right thing, even under pressure or in situations involving potential conflicts of interest. In line with this, Suci et al. (2023) affirm that auditor integrity is the foundation of public trust in audit results, as auditors with integrity prioritize organizational and stakeholder interests over personal gain.

In the internal audit context, integrity is demonstrated through impartial actions, transparency, and resistance to external pressure. Auditors are expected to maintain objectivity and independence throughout the audit process, even when facing sensitive findings or high-risk situations. Auditors with strong integrity remain committed to truth and professional responsibility, even if their decisions may create discomfort for the auditee or management. Therefore, integrity forms the foundation of audit quality. Auditors with integrity not only comply with auditing standards and procedures but also exhibit strong moral conduct in every decision-making process. In the long run, auditors with high integrity can enhance internal audit effectiveness and foster a more transparent and accountable control system within the organization.

Moral Courage

Moral courage is the individual's ability to act ethically even when facing personal risk or pressure. In the context of internal auditing, this trait is crucial as auditors often encounter ethical dilemmas and conflicts of interest. Auditors with moral courage are not hesitant to disclose significant findings, even under pressure from certain parties (Knechel 2022). Moral courage is rooted in ethical commitment, a deep understanding of professional values, and a sense of legal and social responsibility. Auditors with moral courage act firmly and fairly, even when facing personal risks. This reinforces the audit's oversight function and supports the auditor's independence in delivering objective opinions (AAPI, 2013). Overall, moral courage is a key element in maintaining internal audit effectiveness and promoting accountable and transparent organizational governance (Yanti & Permatasari, 2020).

Senior Management Support

Senior management support refers to the extent to which top executives demonstrate attention, trust, and provide the necessary resources for the internal audit function. This support includes the provision of resources, access to information, and sufficient authority for auditors to perform their duties effectively and independently (Kusuma, 2021). Senior management plays a critical role in creating a conducive work environment for internal auditing. Without adequate support, auditors may face barriers such as restricted data access, lack of collaboration from other units, and pressure in reporting findings objectively.

Moreover, management support empowers auditors to detect risks and provide constructive recommendations. Auditors then serve not only as examiners but also as strategic partners to management in achieving organizational goals. The greater the support from senior management, the more effective and value-added the internal audit function becomes in strengthening internal controls and governance (Khelil, 2022). Such support includes attention, direction, and the provision of resources and technology to enhance audit function effectiveness. This is particularly vital when auditors face ethical dilemmas or external pressures. In the context of strengthening audit systems during a crisis, Ariyanto (2024) emphasizes the importance of policy and technological support from audit institutions (such as BPK) as key factors in improving audit effectiveness. This indicates that structural support from management, including the provision of responsive technology and processes, can enhance auditors' decisions and responsibilities under pressure.

Hypotheses

The Effect of Internal Auditor Integrity on Internal Audit Effectiveness

Gamayuni (2016) found that auditor integrity significantly contributes to improving internal audit effectiveness, as it enables auditors to maintain public trust and produce accurate reports. This finding is supported by Khelil et al. (2018), who assert that auditors with high integrity generate reliable audit outcomes. However, this effectiveness is also influenced by senior management support as a situational factor, as outlined in contingency theory. Support in the form of a conducive work environment, access

to information, and assurance of auditor independence has been shown to enhance the role of integrity in facilitating effective audits (Khelil et al., 2018).

H₁: Internal auditor integrity has an effect on internal audit effectiveness.

The Effect of Moral Courage on Internal Audit Effectiveness

Moral courage is the individual's capacity to act ethically even when faced with dilemmas, pressure, and fear, in the pursuit of ethical behavior. Khelil et al., (2018) found that personal access to the audit committee and managerial engagement with the internal audit function foster moral courage. Auditors with moral courage remain objective and unafraid to disclose findings-particularly vital in the public sector, where political and bureaucratic pressures are common. According to contingency theory, moral courage becomes more effective when supported by open and protective management. Arles & Anugrah (2017) emphasize that senior management support strengthens auditors' moral courage. Management committed to ethics and transparency creates a safe environment that empowers auditors to report critical findings, thereby promoting organizational accountability.

H₂: Moral courage has an effect on internal audit effectiveness.

The Moderating Effect of Senior Management Support on the Association between Auditor Integrity and Internal Audit Effectiveness

Senior management support refers to top-level organizational backing for internal audit functions, including the provision of resources, training, access to information, and the safeguarding of auditor independence. Gamayuni (2016) identified that such support plays a significant moderating role between auditor integrity and internal audit effectiveness. Based on contingency theory, senior management support, as a situational factor, strengthens the impact of auditor integrity by fostering a work environment conducive to ethical conduct, thereby enhancing audit effectiveness. Khelil et al. (2022) also demonstrated that strong management support improves internal audit effectiveness, while its absence may hinder effectiveness despite high auditor integrity.

H₃: Internal auditor integrity has an effect on internal audit effectiveness that is moderated by senior management support.

The Moderating Effect of Senior Management Support on the Association between Moral Courage and Internal Audit Effectiveness

Senior management support also plays a critical moderating role in the relationship between auditors' moral courage and internal audit effectiveness. When senior management demonstrates a strong commitment to ethics and transparency, auditors are more likely to feel secure in disclosing findings that may be unpopular but essential for organizational accountability. Research by Khelil et al. (2018) indicates that senior management support significantly moderates the effect of auditors' moral courage. In this context, auditors with strong moral courage are better able to reveal relevant and significant findings, especially in situations involving external pressure. Robust senior management support provides protection for auditors in fulfilling their duties, enabling their moral courage to be fully expressed. Arles & Anugrah (2017) affirm that active management support increases auditors' moral courage, which in turn improves internal audit effectiveness.

H₄: Moral courage has an effect on internal audit effectiveness that is moderated by senior management support.

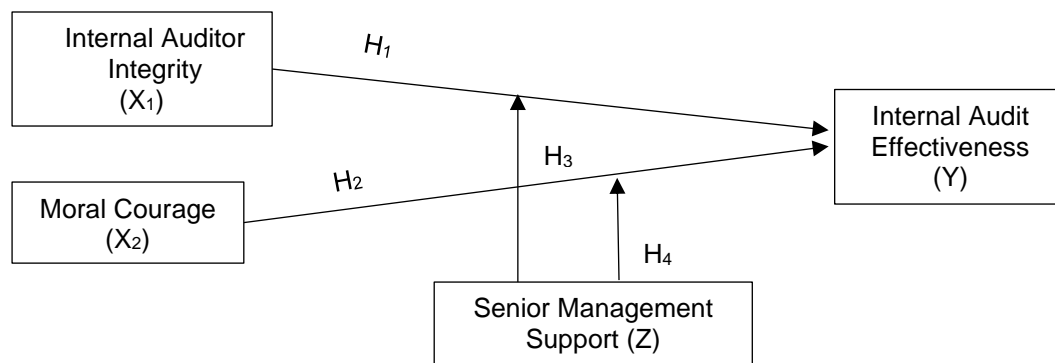


Figure 1. Conceptual Framework

RESEARCH METHOD

Type and Approach of Research

This study adopts a quantitative approach with a cross-sectional survey design, in which data were collected at a single point in time to systematically and objectively examine the associations among variables (Sugiyono, 2020). This approach is deductive in nature and emphasizes hypothesis testing based on existing theoretical frameworks (Creswell 2017). The cross-sectional design is commonly employed in social and management research, as it enables researchers to obtain a correlational overview between variables efficiently within a limited timeframe.

Population and Sample

The population in this study consists of all active internal auditors working at the representative office of the audit board of finance and development (BPKP) in West Kalimantan Province. At the time of the research, the total population was recorded at 78 individuals. Given the relatively small and accessible population size, a census method was employed, in which the entire population was designated as the research sample. This method is recommended in quantitative studies when the population size is manageable and fully reachable (Sugiyono, 2017). However, from the total population, only 43 auditors met the inclusion criteria and agreed to participate as respondents. The inclusion criteria applied in this study were: (1) auditors who are currently active at BPKP West Kalimantan; (2) auditors directly involved in the audit process for at least the past year; and (3) auditors willing to complete the questionnaire fully and honestly. These criteria were established to ensure that respondents possessed sufficient experience and understanding related to internal audit practices.

Data Collection Technique

The research was conducted at the BPKP representative office of West Kalimantan Province, with data collection carried out from late April to early May 2025. Although the population consisted of 78 active internal auditors, the sample was determined using purposive sampling, based on the criteria that auditors were active, had participated in auditing activities over the past year, and were willing to complete the questionnaire thoroughly and truthfully. Based on these considerations, a total of 43 auditors were selected as research respondents. The primary data collection instrument was a closed-ended questionnaire containing positively worded statements, which were constructed based on indicators of each research variable. The measurement scale used was an 8-point likert scale, ranging from 1 (strongly disagree) to 8 (strongly agree). This scale was chosen to provide a more nuanced and accurate range of responses according to the perceptions of the respondents.

Research Instrument

Table 1. Questionnaire Scoring Scale

Response Category	Score
Strongly Agree	8
Agree	7
Somewhat Agree	6
Slightly Agree	5
Slightly Disagree	4
Somewhat Disagree	3
Disagree	2
Strongly Disagree	1

Source: Compiled by the researcher.

Data Analysis

Data analysis was conducted using the partial least squares structural equation modeling (PLS-SEM) approach via warp-PLS version 8.0. This method was chosen due to its suitability for small sample sizes and complex latent variable models. The data analysis in this study involved two main stages: the outer model and the inner model. The outer model assessment involved evaluating construct validity and reliability. Validity was tested through convergent validity and discriminant validity, while reliability was examined using composite reliability and cronbach's alpha (Sarstedt et al., 2021). In addition, full collinearity VIF testing was performed to ensure the absence of common method bias (Kock, 2015). The inner model assessment included hypothesis testing for both direct and moderating effects. The direct effect analysis examined the influence of internal auditor integrity and moral courage on internal audit

effectiveness, whereas the moderating effect analysis tested whether senior management support strengthens the influence of both independent variables on the dependent variable.

Operationalization of Variables

Table 2. Operationalization of Research Variables

Variable	Indicator	Questionnaire No.
Internal audit effectiveness (Y)	Internal audit processes effectively achieve audit objectives	1
	Audit findings are frequently used to improve organizational processes	2
	Internal audit contributes significantly to decision-making	3
	Audit recommendations are often implemented by management	4
	Internal audit enhances organizational performance	5
Internal auditor integrity (X ₁)	Acts in accordance with professional codes of ethics	1
	Reports audit findings honestly	2
	Demonstrates strong commitment to integrity	3
	Refuses involvement in unethical practices	4
	Maintains confidentiality of information	5
Moral courage (X ₂)	Willing to disclose unpopular findings	1
	Reports ethical violations despite pressure	2
	Moral courage influences audit outcomes	3
	Takes risks in reporting issues that harm the organization	4
	Refuses unethical requests from management	5
Senior management support (M)	Provides support for internal audit implementation	1
	Allocates adequate resources	2
	Participates in audit result discussions	3
	Values input from internal auditors	4
	Supports auditors in facing challenges	5

Source: Compiled by the researcher.

FINDINGS AND DISCUSSION

Findings

Measurement Model (Outer Model)

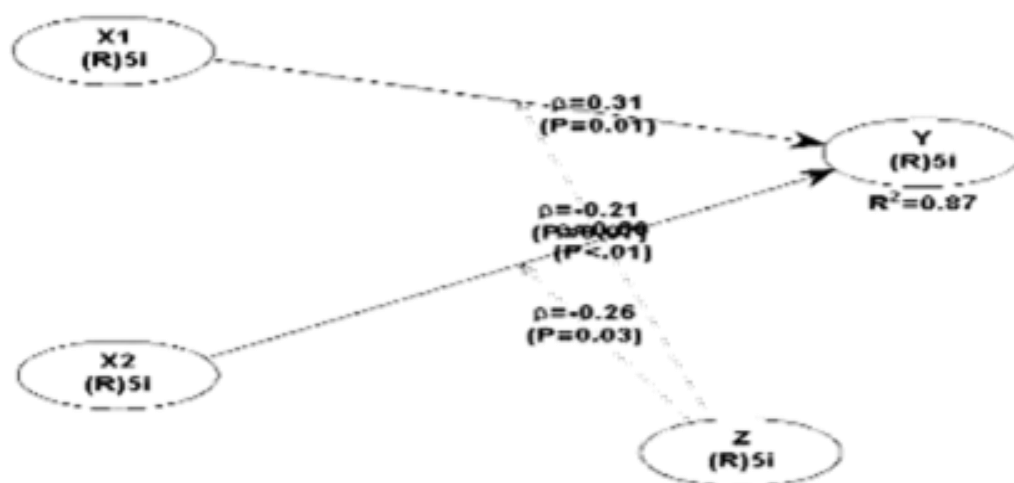


Figure 2. Outer Model (Phase I)

Convergent Validity

The purpose of convergent validity testing is to assess the validity of each relationship between indicators and their corresponding constructs or latent variables. Convergent validity is examined using the loading factor or outer loading value. An indicator is considered to meet the criteria for convergent validity if its outer loading exceeds 0.70. The following table presents the outer loading values for each indicator of the research variables.

Table 3. Convergent Validty (Phase I)

Construct	Indicator	Loading Factor	Conclusion
Internal auditor integrity (X ₁)	IAI1	0.826	Valid
	IAI2	0.601	Not valid
	IAI3	0.751	Valid
	IAI4	0.715	Valid
	IAI5	0.555	Not valid
Moral courage (X ₂)	MC1	0.677	Not valid
	MC2	0.732	Valid
	MC3	0.825	Valid
	MC4	0.984	Valid
	MC5	0.765	Valid
Senior management support (Z)	SMS1	0.878	Valid
	SMS2	0.698	Not valid
	SMS3	0.799	Valid
	SMS4	0.567	Not valid
	SMS5	0.826	Valid
Internal audit effectiveness (Y)	IAE1	0.980	Valid
	IAE2	0.667	Not valid
	IAE3	0.961	Valid
	IAE4	0.772	Not valid
	IAE5	0.660	Valid

Source: Warp-PLS 8.0 output, processed data (2025).

The results of the convergent validity test using warp-PLS show that several indicators have loading factor values below 0.70, which indicates that they do not meet the criteria for convergent validity. Specifically, two indicators under the construct of internal auditor integrity (IAI2 = 0.601 and IAI5 = 0.555), one indicator under moral courage (MC1 = 0.677), two indicators under senior management support (SMS2 = 0.698 and SMS4 = 0.567), and three indicators under internal audit effectiveness (IAE2 = 0.667, IAE4 = 0.772, and IAE5 = 0.660) were identified as not valid. As these indicators fall below the acceptable threshold of 0.70, they should be eliminated to improve the accuracy and reliability of the measurement model. The revised model includes only indicators that demonstrate acceptable loading values, thereby meeting the requirement for convergent validity. The updated measurement model following the removal of invalid indicators is presented below.

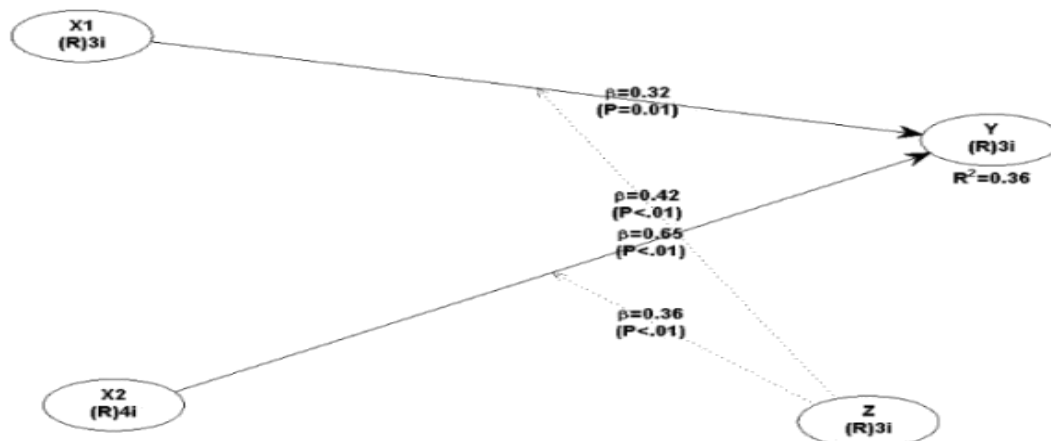


Figure 3. Outer Model (Phase II)

Figure 3 illustrates the research model based on structural equation modeling (SEM), which evaluates the interactions among four primary constructs: internal auditor integrity (X₁), moral courage (X₂), senior management support (Z), and internal audit effectiveness (Y). This model assesses both the direct effects of X₁ and X₂ on Y, as well as the moderating role of Z. The analysis results indicate that both auditor integrity and moral courage exert a positive and significant effect on the effectiveness of internal audit. Auditors with a high level of integrity tend to exhibit greater objectivity and ethical conduct,

whereas those with strong moral courage are able to report audit findings truthfully, even under pressure. Furthermore, senior management support is shown to strengthen the influence of both X_1 and X_2 on Y . This support includes the provision of resources, protection of auditor independence, and acknowledgment of audit outcomes. Overall, the model confirms that the effectiveness of internal auditing is determined not only by the personal attributes of the auditors but also by the extent to which organizational leadership supports the professional and ethical execution of the audit function.

Common Method Bias

Table 4. Common Method

Internal Auditor Integrity	Moral Courage	Senior Management Support	Internal Audit Effectiveness
2.399	3.085	2.632	2.569

Source: Warp-PLS 8.0 output, processed data (2025).

Based on table 4, it can be concluded that all latent constructs-internal auditor integrity, moral courage, senior management support, and internal audit effectiveness-have full collinearity VIF values below the threshold of 3.3. Therefore, it can be inferred that the model is free from multicollinearity issues or common method bias, and is thus considered suitable for further analysis.

Convergent Validity

Table 5. Convergent Validity

Construct	Indicator	Loading Factor	Conclusion
Internal auditor integrity (X_1)	IAI1	0.826	Valid
	IAI3	0.751	Valid
	IAI4	0.715	Valid
Moral courage (X_2)	MC2	0.732	Valid
	MC3	0.825	Valid
	MC4	0.984	Valid
	MC5	0.765	Valid
	MC5	0.765	Valid
Senior management support (Z)	SMS1	0.878	Valid
	SMS3	0.799	Valid
	SMS5	0.826	Valid
Internal audit effectiveness (Y)	IAE1	0.980	Valid
	IAE3	0.961	Valid
	IAE5	0.860	Valid

Source: Warp-PLS 8.0 output, processed data (2025).

The results of the convergent validity analysis after the removal of invalid indicators are presented in the table above. All remaining indicators for the constructs of internal auditor integrity (IAI), moral courage (MC), senior management support (SMS), and internal audit effectiveness (IAE) are considered valid. This conclusion is based on the fact that each indicator achieved a loading factor greater than the minimum threshold of 0.70, in accordance with the criteria recommended by (Sarstedt et al. 2021). The retained loading factor values range from 0.715 to 0.984, indicating that each indicator contributes significantly to its respective latent construct. These findings confirm that the measurement model has achieved adequate convergent validity following the elimination of indicators that did not meet the required standards.

Discriminant Validity

Table. 6 Discriminant Validity

	X_1	X_2	Z	Y	$Z \times X_2$	$Z \times X_1$
X_1	(0.828)	0.556	0.577	0.493	-0.432	-0.153
X_2	0.556	(0.747)	0.703	0.702	-0.155	-0.380
Z	0.493	0.702	(0.873)	(0.860)	-0.236	-0.266
Y	0.562	0.673	0.404	0.713	-0.132	-0.208
$Z \times X_2$	-0.432	-0.155	0.182	-0.236	(1.000)	0.586
$Z \times X_1$	-0.153	-0.380	-0.010	-0.266	0.586	(1.000)

Source: Warp-PLS 8.0 output, processed data (2025).

Based on the results presented in Table 5, all constructs in the model fulfill the criteria for discriminant validity. For example, the square root of the AVE for internal auditor integrity (IAI) is 0.828, which is greater than its correlations with moral courage (MC) at 0.556, Management support from senior

management (MSM) at 0.493, and internal audit effectiveness (IAE) at 0.562. A similar pattern is observed across the other constructs, indicating that each construct is empirically distinct from the others. Therefore, it can be concluded that discriminant validity is adequately established across all constructs in this model.

R-Square

Table 7. R-Square

Variable	R-Square
Internal Audit Effectiveness	0.357

Based on table 6, the R-square value for the internal audit effectiveness variable is 0.357. This indicates that 35.7% of the variance in internal audit effectiveness can be explained by the variables internal auditor integrity, moral courage, and senior management support. The remaining 64.3% is influenced by other factors not included in the current research model. Referring to Chin & Marcoulides, (1998) rule of thumb, an R-square value of 0.67 is considered substantial, 0.33 moderate, and 0.19 weak. Therefore, the R-square value of 0.357 falls within the moderate category, suggesting that the model has a moderate explanatory power in predicting internal audit effectiveness.

Discussion

Hypothesis Testing

Direct Effect

Table 8. Direct Effect

Hypothesis	Predicted Sign	Path Coefficients	Standard Error	Effect Size	P-Value	Conclusion
$X_1 \rightarrow Y$	+	0.321	0.134	0.194	0.010	Accepted
$X_2 \rightarrow Y$	+	0.650	0.116	0.496	< 0.001	Accepted

Source: Warp-PLS 8.0 output, processed data (2025).

As shown in table 8, the p-value for the effect of internal auditor integrity (X_1) on internal audit effectiveness (Y) is 0.010, which is below the significance threshold of 0.05. The path coefficient of 0.321 indicates a positive influence, thereby confirming that hypothesis H_{a1} is supported and H_{o1} is rejected. Similarly, the influence of moral courage (X_2) on internal audit effectiveness (Y) is also statistically significant, as indicated by a p-value of <0.001 and a path coefficient of 0.650. These results support hypothesis H_{a2} and reject H_{o2} , suggesting a strong positive effect.

Indirect Effect

Table 9. Indirect Effect

Hypothesis	Path Coefficients	Standard Error	Effect Size	P-Value	Moderation Conclusion
$Z \rightarrow X_1$	0.423	0.128	0.226	< 0.001	Strengthening
$Z \rightarrow X_2$	0.361	0.131	0.108	0.004	Strengthening

Source: Warp-PLS 8.0 output, processed data (2025).

As presented in table 8, the moderating effect of senior management support (Z) on the relationship between internal auditor integrity (X_1) and internal audit effectiveness (Y) is statistically significant, with a path coefficient of 0.423 and a p-value of <0.001. This result indicates that senior management support strengthens the effect of auditor integrity on audit effectiveness, supporting hypothesis H_{a3} and rejecting H_{o3} . Furthermore, the interaction between senior management support and moral courage (X_2) on internal audit effectiveness (Y) is also statistically significant, with a path coefficient of 0.361 and a p-value of 0.004. Hence, hypothesis H_{a4} is supported, and H_{o4} is rejected, implying that senior management support also strengthens the relationship between moral courage and audit effectiveness.

Internal Auditor Integrity and Internal Audit Effectiveness

The hypothesis testing results indicate that internal auditor integrity has a positive effect on internal audit effectiveness. This finding is consistent with the first hypothesis (H_1), which posits that auditors with high integrity will perform their duties in accordance with the code of ethics and uphold the values of honesty, objectivity, and independence. Integrity serves as a fundamental cornerstone for the effective execution of internal audit functions. Integrity enables auditors to make fair and trustworthy decisions while maintaining the confidentiality of audit information. The higher the level of auditor integrity, the greater their ability to provide high-quality recommendations, preserve independence, and enhance

management's trust in the internal audit function. This finding aligns with entity theory, which views the auditing profession as one grounded in high moral and ethical standards in the pursuit of organizational objectives. This result is supported by prior studies, such as Gamayuni (2016), which demonstrated a significant relationship between auditor integrity and internal audit effectiveness. Similarly, research by Yanti & Permatasari (2020) found that higher auditor integrity improves the ability to detect irregularities and contributes positively to achieving organizational goals.

Moral Courage and Internal Audit Effectiveness

The results also show that auditors' moral courage positively influences internal audit effectiveness, confirming the second hypothesis (H_2). Auditors with high moral courage perform their duties honestly and objectively, even when under pressure from internal or external parties within the organization. Moral courage reflects the auditor's resolve in disclosing irregularities, resisting unethical interference, and communicating audit findings that may be unpopular or disadvantageous to certain parties. Morally courageous auditors are more likely to uphold auditing standards and are less susceptible to personal or political pressure.

This finding is in line with contingency theory, which posits that individual auditor behavior is significantly shaped by environmental conditions and personal characteristics. In this context, moral courage becomes a critical internal factor that supports the effective implementation of internal audit tasks amid complex and high-risk situations. This research is further reinforced by Sirajuddin & Merlin (2019), who found that auditors' moral courage significantly influences their performance. A similar conclusion was drawn by Sirajuddin & Merlin (2019), who observed that morally courageous auditors tend to be more objective, accurate, and bold in reporting audit findings, even under pressure.

The Moderating Role of Senior Management Support on the Influence of Internal Auditor Integrity and Moral Courage Toward Internal Audit Effectiveness

Senior management support has been shown to strengthen the relationship between auditor integrity and internal audit effectiveness. When auditors operate in a supportive environment where audit findings are valued, adequate resources are provided, and auditor independence is preserved their integrity translates more effectively into audit performance. Supportive management fosters an environment where auditors can fully execute their oversight functions. Integrity-related values such as honesty, responsibility, and professionalism can be expressed more effectively when structural and institutional support is present. Likewise, senior management support also reinforces the effect of moral courage on internal audit effectiveness. Auditors who feel supported are more willing to report sensitive or high-risk findings. A transparent and supportive organizational climate provides auditors with a safe space to adhere to ethical and professional standards, even when facing internal resistance or organizational pressure. These findings are consistent with research by Endaya & Hanefah (2016), which showed that senior management support strengthens the relationship between individual auditor characteristics and audit effectiveness. Similar results were reported by Yanti & Permatasari (2020), who emphasized the critical role of management support in enabling auditors to act with moral courage in decision-making. Rakhmat et al. (2019) further asserted that internal audit effectiveness is not only determined by auditor competence and attitude but is also heavily influenced by how much support an organization provides for the audit function.

CONCLUSION

The findings of this study indicate that internal auditor integrity and moral courage have a significant positive impact on internal audit effectiveness. Auditors with high levels of integrity perform their duties in accordance with professional ethical codes, upholding values such as honesty, objectivity, and independence. Integrity forms the fundamental basis for effective internal audit execution, as it enables auditors to make fair and reliable judgments, maintain confidentiality, and provide high quality recommendations. These results align with previous studies such as Gamayuni (2016) and Yanti & Permatasari (2020), which emphasize that higher auditor integrity contributes substantially to achieving organizational goals. Furthermore, the study confirms that moral courage significantly enhances internal audit effectiveness. Auditors with strong moral courage are more likely to disclose irregularities, resist unethical interventions, and report audit findings even in the face of internal or external pressure. Moral

courage reflects the firmness, honesty, and ethical resilience of auditors in complex and high-pressure environments. These results are consistent with findings from Sirajuddin & Merlin (2019), who highlight the importance of moral courage in the auditing profession. A key novelty of this study lies in its examination of senior management support as a moderating variable between auditor characteristics (integrity and moral courage) and audit effectiveness. The results show that senior management support significantly strengthens these relationships. When management values audit outcomes, provides sufficient resources, and ensures auditor independence, the auditors' integrity and moral courage translate more effectively into audit performance. Supportive environments enable auditors to express ethical principles and take bold actions, even in sensitive or high-risk scenarios. This nuanced interaction between individual auditor traits and organizational conditions contributes a novel empirical perspective to the internal auditing literature particularly within the public sector context. This study provides practical implications for public organizations, especially in optimizing internal audit functions. It emphasizes the importance of organizational efforts in fostering ethical behavior among auditors through training, supervisory support, and institutional protection of auditor independence. Cultivating a culture that values integrity and moral courage is essential for improving audit quality and organizational accountability. Despite its contributions, the study has some limitations. It focuses solely on internal auditors from a single institution BPKP West Kalimantan thus limiting the generalizability of the results to broader auditor populations. Moreover, the data were collected through questionnaires only, without the use of observations or qualitative interviews, which may limit the depth of behavioral insights. Future research is encouraged to expand the sample across different institutions and regions and to include additional variables such as ethical organizational culture, incentive structures, or external pressures. Employing mixed method approaches could yield deeper and more holistic understandings of the factors affecting internal audit effectiveness in the public sector. Additionally, further studies could investigate the interplay between personal auditor values and organizational leadership strategies, expanding the theoretical scope and practical implications for governance reforms. Furthermore, this study recommends that future research consider replacing the indicators that failed to meet convergent validity with alternative items that better reflect the intended constructs. Carefully developed indicators based on qualitative insights, expert validation, or previous empirical findings can enhance the accuracy and robustness of construct measurement. This step is especially important to ensure that the underlying theoretical concepts, such as integrity and moral courage, are fully captured and effectively operationalized in diverse organizational contexts.

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