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“Digital Transformation and Sustainable Business: Challenges and Opportunities for Higher Education Research and Development”

Independence, Internal Auditor Role, and Professionalism Effects on Internal Control System Effectiveness

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Abstract

This research investigates how independence, internal auditor role, and professionalism influence internal control system effectiveness at PT. Perkebunan Nusantara IV (Regional I) Medan. Employing multiple regression analysis via SPSS 26.0, data were collected from 39 respondents using saturated sampling technique through 44-item questionnaires measured on Likert scales. Results reveal independence demonstrates negative insignificant effects, internal auditor role shows positive insignificant effects, while professionalism exhibits positive significant effects on internal control system effectiveness. Collectively, all variables significantly impact internal control system effectiveness, explaining 43.7% of variance. These findings provide practical implications for strengthening internal audit functions within state-owned enterprises.

Keywords: Independence, Internal Auditor Role, Auditor Professionalism, Internal Control System, Implementation Effectiveness

Introduction

Contemporary organizational environments require robust internal control mechanisms ensuring operational efficiency, financial reporting reliability, and regulatory compliance (Appiah et al., 2022). State-owned enterprises face particular scrutiny regarding control system effectiveness, given their public accountability obligations and stakeholder expectations for transparent governance practices.

Indonesia's Supreme Audit Agency (BPK) documented 293 findings containing 503 problems across 22 state-owned enterprises during Semester II 2023, comprising 255 internal control weaknesses, 214 regulatory non-compliance issues, and 34 inefficiency instances (BPK, 2023). Comparative analysis with Semester II 2022 data, revealing 217 findings with 359 problems across 21 entities, indicates deteriorating control environments (BPK, 2022). These escalating deficiencies underscore critical vulnerabilities within state-owned enterprise governance frameworks.

PT. Perkebunan Nusantara IV (Regional I) Medan faces specific challenges implementing effective internal control systems, particularly insufficient Internal Supervisory Unit personnel aligned with established nomenclature requirements. This organizational constraint potentially compromises control function comprehensiveness and monitoring effectiveness.

This research addresses significant gaps by examining internal auditor characteristics influencing control system effectiveness within Indonesian state-owned enterprises. Understanding these relationships provides actionable insights for strengthening governance mechanisms and enhancing organizational performance outcomes.



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Literature Review

Agency Theory

Agency theory, originally developed by Jensen and Meckling (1976), explains contractual relationships where principals engage agents to perform services involving delegated decision-making authority. Information asymmetries between parties create potential conflicts, as agents may prioritize personal interests over principal objectives (Nguyen et al., 2020). Within organizational contexts, management serves as agents for shareholders (principals), necessitating monitoring mechanisms ensuring alignment between managerial actions and shareholder wealth maximization goals.

Agency conflicts drive demand for quality audit functions, as comprehensive internal control systems mitigate information asymmetries and reduce opportunistic managerial behavior (Pizzi et al., 2021). When auditors encounter significant agency conflicts, enhanced audit performance improves reported information quality, thereby reducing monitoring costs and strengthening stakeholder confidence.

Internal Control System Effectiveness

Internal control encompasses organizational structures, methods, and coordinated measures safeguarding assets, verifying accounting data accuracy, promoting operational efficiency, and ensuring policy compliance (Alzeban, 2020). The Committee of Sponsoring Organizations (COSO) framework defines internal control as processes implemented by governance bodies, management, and personnel providing reasonable assurance regarding reliable financial reporting, operational effectiveness, and regulatory compliance objectives (Saidin et al., 2021).

Effective internal control systems incorporate five interrelated components: control environment establishing organizational tone, risk assessment identifying potential threats, control activities implementing policies and procedures, information and communication systems facilitating data flow, and monitoring activities evaluating system performance (Dalci et al., 2022). Implementation effectiveness reflects organizational capability translating control frameworks into operational practices achieving intended objectives.

Auditor Independence

Independence represents freedom from situations threatening internal auditor objectivity when executing responsibilities impartially (Institute of Internal Auditors, 2017). This fundamental principle ensures auditors maintain unbiased perspectives, reporting findings based exclusively on objective evidence rather than organizational pressures or personal relationships (Tackie et al., 2020).

Independence manifests through two dimensions: independence in fact, representing actual mental state free from compromising influences, and independence in appearance, reflecting external perceptions regarding auditor objectivity (Kaawaase et al., 2021). Both dimensions prove essential for maintaining audit credibility and stakeholder confidence in reported findings.

Internal Auditor Role

Internal auditors function as organizational employees providing continuous supervision, assessment, and advisory services regarding control system adequacy and operational effectiveness (Alzeban, 2020). Unlike external auditors maintaining arms-length relationships, internal auditors constitute integral organizational components understanding institutional contexts and operational complexities.



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Contemporary internal audit roles extend beyond traditional watchdog functions, encompassing consultant and evaluator responsibilities (Castanheira et al., 2022). As watchdogs, auditors monitor compliance and detect irregularities; as consultants, they provide recommendations improving processes; as evaluators, they assess control effectiveness and organizational performance against established benchmarks.

Auditor Professionalism

Professionalism encompasses auditor attitudes and behaviors demonstrating integrity, responsibility, and performance excellence when executing duties (Tackie et al., 2020). Professional internal auditors apply technical knowledge, exercise due professional care, and maintain competencies commensurate with assignment complexities (Institute of Internal Auditors, 2017).

Professional characteristics include specialized expertise, ethical conduct adherence, continuous professional development commitment, and service orientation prioritizing organizational interests (Kaawaase et al., 2021). These attributes enable auditors providing high-quality services strengthening internal control environments and supporting organizational objectives.

Hypotheses Development

Independence and Internal Control System Effectiveness

Agency theory suggests independent auditors more effectively monitor management actions, reducing information asymmetries and improving control system reliability (Nguyen et al., 2020). When auditors maintain objectivity free from management influence, they identify control weaknesses more comprehensively and recommend appropriate corrective actions. However, organizational pressures and relationship dynamics may compromise independence, potentially limiting audit effectiveness within internal audit contexts (Tackie et al., 2020).

H₁: Independence significantly affects internal control system effectiveness.

Internal Auditor Role and Internal Control System Effectiveness

Comprehensive internal auditor roles encompassing watchdog, consultant, and evaluator functions enhance control system effectiveness by providing multifaceted perspectives addressing diverse organizational needs (Castanheira et al., 2022). Expanded roles enable auditors identifying weaknesses, recommending improvements, and evaluating implementation outcomes, thereby strengthening overall control environments. Research demonstrates positive relationships between comprehensive audit roles and control system quality (Alzeban, 2020).

H₂: Internal auditor role significantly affects internal control system effectiveness.

Professionalism and Internal Control System Effectiveness

Professional auditors possessing technical competencies, ethical commitments, and continuous development orientations deliver superior audit quality strengthening internal control systems (Kaawaase et al., 2021). Professionalism enhances auditor capability identifying control deficiencies, evaluating risk exposures, and recommending effective improvements aligned with organizational objectives. Empirical evidence confirms positive relationships between auditor professionalism and control system effectiveness (Tackie et al., 2020).

H₃: Auditor professionalism significantly affects internal control system effectiveness.

Simultaneous Effects



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Collective consideration of independence, role comprehensiveness, and professionalism provides holistic perspectives on internal audit function quality. When auditors maintain objectivity, fulfill comprehensive roles, and demonstrate professional competencies simultaneously, control system effectiveness maximizes through enhanced monitoring capabilities, improvement recommendations, and implementation assessments (Pizzi et al., 2021).

H4: Independence, internal auditor role, and professionalism simultaneously affect internal control system effectiveness.

Methods

Research Design

This quantitative research employs causality approaches investigating independent variable influences on dependent variables through statistical analysis. The study utilizes survey methodologies collecting primary data via structured questionnaires administered to relevant organizational personnel.

Population and Sample

The research population comprises 39 management employees from Internal Supervisory Units and Accounting-Finance Departments at PT. Perkebunan Nusantara IV (Regional I) Medan. Saturated sampling technique includes all population members as respondents, eliminating sampling error and ensuring comprehensive coverage.

Data Collection

Primary data collection employs questionnaires containing 44 statements measuring research variables using five-point Likert scales ranging from strongly disagree (1) to strongly agree (5). Questionnaire distribution occurred over one month, ensuring adequate response time and maximizing completion rates.

Variable Measurements

Dependent Variable:

- Internal Control System Effectiveness: Measured through comprehensive indicators assessing control environment quality, risk assessment processes, control activity implementation, information system effectiveness, and monitoring function adequacy.

Independent Variables:

- Independence: Measured using indicators developed by Kalbers and Forgarty (1995) encompassing independence in fact and independence in appearance dimensions.
- Internal Auditor Role: Assessed through watchdog, consultant, and evaluator role dimensions reflecting comprehensive audit function scope.
- Auditor Professionalism: Evaluated through technical competence, ethical conduct, continuous development, and service orientation indicators.

Data Analysis

Multiple linear regression analysis examines relationships between independent and dependent variables using SPSS 26.0 software. Classical assumption tests verify normality, multicollinearity absence, and heteroscedasticity absence, ensuring regression model validity. Hypothesis testing employs partial t-tests



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evaluating individual variable effects, simultaneous F-tests assessing collective variable influences, and determination coefficients quantifying explanatory power.

Results and Discussion

Classical Assumption Tests

Normality Test

Table 1. Normality Test Results

Test Component	Value
N	39
Mean	.0000000
Std. Deviation	4.21028128
Absolute	.137
Positive	.098
Negative	-.137
Test Statistic	.137
Asymp. Sig. (2-tailed)	.061

Source: SPSS 26 processed results, 2025

Kolmogorov-Smirnov test results demonstrate significance value 0.061 exceeding 0.05 threshold, confirming normal data distribution satisfying regression assumptions. Histogram analysis reveals symmetrical distribution patterns without left or right skewness, further validating normality assumptions.

Heteroscedasticity Test

Scatterplot analysis demonstrates randomly distributed data points without clear pattern formation, with points dispersed above and below zero on the Y-axis. These patterns confirm heteroscedasticity absence, satisfying regression model assumptions regarding constant error variance.

Multicollinearity Test

Table 2. Multicollinearity Test Results

Variable	Tolerance	VIF
Independence	.620	1.614
Internal Auditor Role	.433	2.308
Auditor Professionalism	.521	1.918

Source: SPSS 26 processed results, 2025

All variables demonstrate tolerance values exceeding 0.10 and VIF values below 10.00, confirming multicollinearity absence. These results validate independent variable distinctiveness without problematic intercorrelations compromising regression coefficient interpretation.



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Multiple Linear Regression Analysis

Table 3. Multiple Linear Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	8.949	9.847		.909
Independence	-.137	.288	-.073	-.475
Internal Auditor Role	.018	.372	.009	.048
Auditor Professionalism	1.104	.258	.721	4.281

Source: SPSS 26 processed results, 2025

Regression Equation: Internal Control System Effectiveness = 8.949 - 0.137(Independence) + 0.018(Internal Auditor Role) + 1.104(Auditor Professionalism)

Interpretation:

- Constant (8.949): Base internal control system effectiveness when all independent variables remain unchanged
- Independence coefficient (-0.137): Each unit increase in independence decreases effectiveness by 0.137 units
- Internal Auditor Role coefficient (0.018): Each unit increase in role comprehensiveness increases effectiveness by 0.018 units
- Auditor Professionalism coefficient (1.104): Each unit increase in professionalism increases effectiveness by 1.104 units
-

Hypothesis Testing

Partial Significance Test (t-Test)

Table 4. Partial Significance Test Results

Variable	t-value	Sig.	Decision
Independence	-.475	.638	H ₁ Rejected
Internal Auditor Role	.048	.962	H ₂ Rejected
Auditor Professionalism	4.281	.000	H ₃ Accepted

Source: SPSS 26 processed results, 2025

Independence Effect: Results demonstrate negative coefficient (-0.137) with significance value 0.638 exceeding 0.05 threshold, indicating independence exerts negative insignificant effects on internal control system effectiveness. Therefore, H₁ is rejected.



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Internal Auditor Role Effect: Analysis reveals positive coefficient (0.018) with significance value 0.962 exceeding 0.05 threshold, demonstrating internal auditor role generates positive but insignificant effects on internal control system effectiveness. Consequently, H_2 is rejected.

Auditor Professionalism Effect: Testing shows positive coefficient (1.104) with significance value 0.000 below 0.05 threshold, confirming auditor professionalism produces positive significant effects on internal control system effectiveness. Thus, H_3 is accepted.

Simultaneous Significance Test (F-Test)

Table 5. Simultaneous Significance Test Results

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	626.292	3	208.764	10.847	.000
Residual	673.606	35	19.246		
Total	1299.897	38			

Source: SPSS 26 processed results, 2025

F-test results demonstrate F-value 10.847 with significance level 0.000 below 0.05 threshold, confirming independence, internal auditor role, and auditor professionalism collectively exert significant effects on internal control system effectiveness. Therefore, H_4 is accepted.

Determination Coefficient Test

Table 6. Determination Coefficient Results

Model	R	R Square	Adjusted R Square
1	.694	.482	.437

Source: SPSS 26 processed results, 2025

Adjusted R Square value 0.437 indicates independence, internal auditor role, and auditor professionalism explain 43.7% of internal control system effectiveness variance, while remaining 56.3% reflects other factors including organizational culture, management support, technological infrastructure, and external regulatory environments.

Discussion

Independence and Internal Control System Effectiveness

Independence demonstrates negative insignificant effects on internal control system effectiveness, contradicting theoretical expectations but reflecting practical organizational realities within state-owned enterprises. Internal auditors maintaining excessive independence may encounter resistance from operational management, limiting access to critical information and reducing audit effectiveness (Tackie et al., 2020). Additionally, organizational cultures emphasizing collaborative relationships over arms-length independence may prioritize cooperative problem-solving approaches rather than adversarial monitoring functions.



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This finding suggests independence alone proves insufficient without complementary factors including management support, organizational commitment, and adequate resources supporting audit activities (Pizzi et al., 2021). Within Indonesian state-owned enterprise contexts, hierarchical organizational structures and relationship-oriented cultures may diminish independence importance relative to other auditor characteristics.

Internal Auditor Role and Internal Control System Effectiveness

Internal auditor role exhibits positive but insignificant effects on internal control system effectiveness, indicating role comprehensiveness contributes positively yet insufficiently impacts control outcomes independently. This result potentially reflects implementation challenges where formally defined comprehensive roles fail translating into practical audit activities due to resource constraints, competing priorities, or inadequate authority levels (Castanheira et al., 2022).

Furthermore, role effectiveness depends upon organizational receptiveness to audit recommendations and management willingness implementing suggested improvements (Alzeban, 2020). Without supportive organizational environments facilitating role execution, expanded audit functions yield limited control system enhancements despite theoretical advantages.

Auditor Professionalism and Internal Control System Effectiveness

Auditor professionalism demonstrates positive significant effects on internal control system effectiveness, confirming professional competencies, ethical conduct, and continuous development orientations substantially strengthen control environments. Professional auditors possess technical expertise identifying control weaknesses, evaluating risk exposures, and recommending effective improvements aligned with organizational objectives (Kaawaase et al., 2021).

This finding aligns with prior research demonstrating professionalism as critical determinant of audit quality and control system effectiveness across diverse organizational contexts (Tackie et al., 2020). Professional auditors maintain credibility with organizational stakeholders, ensuring audit findings receive serious consideration and recommended improvements obtain necessary implementation support.

Simultaneous Effects Analysis

Collective analysis confirms independence, internal auditor role, and auditor professionalism simultaneously influence internal control system effectiveness significantly, validating comprehensive perspectives considering multiple auditor characteristics. While individual variables demonstrate varying significance levels, their combined effects produce substantial control system impacts reflecting synergistic relationships between auditor attributes (Pizzi et al., 2021).

This result emphasizes holistic approaches developing internal audit functions rather than focusing exclusively on single characteristics. Effective internal control systems require auditors possessing appropriate independence levels, comprehensive role definitions, and professional competencies operating within supportive organizational environments facilitating audit function success.

Conclusion



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This research examines independence, internal auditor role, and auditor professionalism effects on internal control system effectiveness at PT. Perkebunan Nusantara IV (Regional I) Medan, yielding several significant conclusions:

Individual Effects: Independence demonstrates negative insignificant effects, internal auditor role shows positive insignificant effects, while auditor professionalism exhibits positive significant effects on internal control system effectiveness. These findings indicate professionalism emerges as the most critical individual factor influencing control outcomes within this organizational context.

Simultaneous Effect: Independence, internal auditor role, and auditor professionalism collectively exert significant effects on internal control system effectiveness, confirming the importance of comprehensive auditor characteristic consideration.

Explanatory Power: The model explains 43.7% of internal control system effectiveness variance, with remaining factors including organizational culture, management support, technological infrastructure, and regulatory environments influencing control outcomes.

Recommendations

For Management:

- Prioritize internal auditor professional development through continuous training programs, technical certification support, and knowledge-sharing initiatives enhancing audit function capabilities,
- Implement comprehensive performance evaluation systems assessing auditor professionalism dimensions including technical competence, ethical conduct, and service quality,
- Develop supportive organizational environments facilitating audit function effectiveness through adequate resource allocation, management commitment, and receptiveness to audit recommendations,

For Internal Auditors:

- Strengthen professional competencies through formal education, professional certifications, and continuous learning activities maintaining technical expertise currency.
- Balance independence requirements with collaborative approaches fostering constructive stakeholder relationships supporting audit function success.
- Expand role comprehensiveness by developing consultant and evaluator capabilities complementing traditional watchdog functions.
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For Future Research:

- Extend study periods capturing long-term relationship dynamics and temporal variations in auditor characteristic effects.
- Increase sample sizes incorporating multiple state-owned enterprises enabling generalization and cross-organizational comparisons.
- Incorporate additional variables including organizational culture, management support, technological infrastructure, and external regulatory factors providing comprehensive explanatory frameworks.
- Employ mixed-methods approaches combining quantitative analyses with qualitative investigations exploring contextual factors influencing internal audit effectiveness.



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References

Alzeban, A. (2020). The impact of audit committee, CEO, and external auditor quality on the quality of financial reporting. *Corporate Governance: The International Journal of Business in Society*, 20(2), 263-279. <https://doi.org/10.1108/CG-07-2019-0204>.

Appiah, K. O., Awunyo-Vitor, D., Mireku, K., & Ahiagbah, C. (2022). Compliance with internal control systems and performance: The role of stakeholder pressure and coercive forces in Ghanaian SMEs. *International Journal of Productivity and Performance Management*, 71(6), 2278-2300. <https://doi.org/10.1108/IJPPM-11-2020-0604>.

BPK RI. (2022). *Ikhtisar Hasil Pemeriksaan Semester II Tahun 2022*. Badan Pemeriksa Keuangan Republik Indonesia. <https://www.bpk.go.id/ihps>.

BPK RI. (2023). *Ikhtisar Hasil Pemeriksaan Semester II Tahun 2023*. Badan Pemeriksa Keuangan Republik Indonesia. <https://www.bpk.go.id/ihps>.

Castanheira, N., Rodrigues, L. L., & Craig, R. (2022). Factors influencing the evolution of internal auditing practices: An institutional theory approach. *Accounting History*, 27(1), 108-133. <https://doi.org/10.1177/10323732211046938>.

Dalci, I., Tanis, V. N., & Kosan, L. (2022). A study on the effectiveness of internal control system in the public sector: The case of Turkey. *Journal of Accounting & Organizational Change*, 18(3), 361-383. <https://doi.org/10.1108/JAOC-08-2020-0105>.

Institute of Internal Auditors. (2017). *International Professional Practices Framework (IPPF): International Standards for the Professional Practice of Internal Auditing*. The IIA. <https://www.theiia.org>.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X).

Kaawaase, T. K., Nalukwago, L., & Bananuka, J. (2021). Corporate governance, internal audit quality and financial reporting quality of financial institutions. *Asian Journal of Accounting Research*, 6(3), 348-366. <https://doi.org/10.1108/AJAR-11-2020-0117>.

Kalbers, L. P., & Fogarty, T. J. (1995). Professionalism and its consequences: A study of internal auditors. *Auditing: A Journal of Practice & Theory*, 14(1), 64-86.

Nguyen, L. A., Hoang, T. G., & Truong, H. T. (2020). Effect of independence of members of the audit committee on earnings quality: Evidence from Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(3), 61-70. <https://doi.org/10.13106/jafeb.2020.vol7.no3.61>.

Pizzi, S., Venturelli, A., Variale, M., & Macario, G. P. (2021). Assessing the impacts of digital transformation on internal auditing: A bibliometric analysis. *Technology in Society*, 67, 101738. <https://doi.org/10.1016/j.techsoc.2021.101738>.

Saidin, S. Z., Scully, G., & Willett, R. (2021). The evolution of internal control in the Australian public sector: A critical analysis. *Financial Accountability & Management*, 37(1), 24-45. <https://doi.org/10.1111/faam.12250>.

Tackie, G., Marfo-Yiadom, E., & Achina, S. O. (2020). Determinants of internal audit effectiveness in decentralized local government administrative systems. *Meditari Accountancy Research*, 28(4), 677-698. <https://doi.org/10.1108/MEDAR-09-2019-0565>.