

The Strengthening Fraud Prevention in Higher Education: An Empirical Study of Internal Control System and Good University Governance

Rudiawie Larasati 1,2 and Heru Tjaraka 1*

- ¹ Department of Accounting, Faculty of Economics and Business, Airlangga University, Surabaya 60286, Indonesia;
- ² Department of Accounting, Cenderawasih University, Jayapura 99351, Indonesia.
- * Corresponding author: heru_tjaraka@feb.unair.ac.id.

ABSTRACT: This research investigates how internal control systems and Good University Governance (GUG) influence fraud prevention in higher education institutions in Eastern Indonesia. Various instances of fraud in Indonesian universities have been attributed to the Internal Supervisory Unit (SPI), which plays a crucial role in enforcing GUG. The study adopts a quantitative approach with purposive sampling to analyze a mediating model involving internal control systems, fraud prevention, and GUG. Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) method was employed for data analysis. The findings demonstrate that both GUG and the implementation of internal control systems significantly contribute to fraud prevention. Moreover, the research highlights the indirect effect, where GUG acts as a mediator between internal control systems and fraud prevention. The results emphasize the importance of incorporating robust governance practices to reduce fraud in educational institutions in Indonesia.

Keywords: internal control systems, good university governance, fraud prevention, higher education, structural equation modeling (SEM).

I. INTRODUCTION

Higher education institutions were primarily established to provide advanced education to the community, with the goal of cultivating a generation that is both intellectually capable and morally upright [1]. The mission of higher education involved the implementation of the three fundamental pillars: education, research, and community service [2]. As knowledge producers, universities were required to continuously evaluate their central role within a knowledge-based society [3]. Moreover, the governance of higher education had become a priority in numerous countries as they sought to restructure their educational systems. One of the key results of these governance reforms was the development of more flexible and adaptable organizational structures, enabling them to quickly respond to the rapidly changing environment [4].

Despite its critical role in the public sector, the education sector faced severe challenges due to inadequate funding, ineffective service delivery, and poor administration [5]. Consequently, effective financial management, increased accountability, transparency in the allocation of educational resources, and the prevention of fraud and corruption became urgent priorities [6]. The World Education Forum highlighted corruption as the primary cause of inefficient resource utilization, stressing the necessity to address and eliminate it [5].



Higher education institutions, much like other public sector organizations, were vulnerable to fraudulent activities. Transparency International Ukraine reported in 2015 that 30 percent of the Ukrainian population expressed concerns about corruption in education, including issues related to college admissions [7]. The emergence of fraudulent practices within higher education was attributed to a lack of transparency, accountability, and weak internal controls [8]. Several instances of fraud within Indonesian higher education institutions, identified through audits, included the misallocation of social assistance funds that were neither distributed properly nor deposited into the state treasury [9, 10]. Additionally, there were cases involving double payments for honoraria and travel expenses, as well as the opening of fictitious accounts without Ministry of Finance approval [11]. Corruption in higher education extended beyond fund misappropriation and budget inflation, with the management of state university assets also being susceptible to fraudulent activities [12, 13].

The management performance of higher education institutions in Indonesia remains below expectations, largely due to persistent problems associated with the Internal Supervisory Unit (SPI), which is instrumental in realizing the principles of Good University Governance (GUG) [14]. The framework of GUG emerged as a response to various governance shortcomings in the academic sector, notably issues such as administrative inefficiency and corruption [15, 16]. Based on data collected by Indonesia Corruption Watch (ICW), between 2015 and 2019, the education sector was identified as one of the ten most corruption-prone sectors, contributing to state financial losses amounting to IDR 41.09 billion. Of the 202 corruption cases reported in this period within the education domain, approximately 10% equivalent to around 20 cases were traced back to higher education institutions, with estimated state losses reaching IDR 81.9 billion [17]. These occurrences are primarily the result of inadequate transparency in managing financial resources, which has opened the door to fraudulent practices [18]. As a result, the distribution and total amount of public funds allocated to state universities (PTN) often lack clarity.

In addition, the Audit Board of Indonesia (BPK), through its 2019 audit summary, identified a total of 66 weaknesses related to internal control systems, including 17 cases of unrecorded or inaccurate records, 14 cases of incomplete or non-existent Standard Operating Procedures (SOP), 10 instances where policy implementation resulted in potential revenue loss, and 25 other weaknesses in the Internal Supervisory Unit (SPI). Some of the identified issues included financial statements that still reflected cash balances in the expenditure treasury, which had not been deposited into the state treasury. Furthermore, receivables and intangible assets were not recorded, and there was a lack of SOPs for financial management, including procedures for collecting tuition fees for master's programs and the management of guesthouses and dormitory facilities. Additionally, the primary issue of non-compliance with legislative regulations governing the management of state-owned universities (PTN) and Legal Entity State Universities (PTN BH) was reported in 49 cases [19].

University management is directly shaped by government policies that emphasize efficiency. Furthermore, the significance of implementing strong governance practices within higher education institutions is grounded in three main principles: institutional autonomy, academic freedom, and transparent, responsive governance regulations [20]. According to [21], university governance refers to how an institution can optimize its educational system to achieve organizational goals, manage academic programs, improve student knowledge, oversee assets and finances, and enhance the skills of its human resources. The UGSC framework includes five key dimensions: (1) context, mission, and overall objectives; (2) management orientation; (3) autonomy; (4) accountability; and (5) participation [22, 23].

The principles of Good University Governance (GUG) were extensively developed by researchers, both locally and internationally, who categorized various aspects of GUG into different frameworks and models. The GUG principles proposed by [24] served as the foundation for the selection of the principles used in this study, which included transparency, accountability, responsibility, independence, and fairness. Additionally, an internal control system was recognized as a crucial element in the implementation of effective governance [25]. An efficient control system ensured the smooth and effective operation of organizations, while ensuring compliance with both internal regulations and external laws, thereby promoting accountability [26, 27]. Consequently, internal controls contributed to the achievement of



organizational goals, including enhanced performance, profit objectives, adherence to legal frameworks, and the mitigation of potential damages and other negative consequences.

According to [28], Internal control was defined as a system administered by the Internal Supervisory Unit (SPI), which bore responsibility for its implementation. In conjunction with a well-established internal control framework, SPI was expected to support institutional leaders in enforcing the principles of Good University Governance (GUG). The values of transparency and accountability were required to be consistently upheld within financial management practices, in accordance with recognized accounting standards, including the execution of both internal and external audits as mandated in higher education institutions. However, the principle of transparency in financial management faces specific challenges for universities due to frequent discrepancies between the prepared budget items and the operational activities of the universities, which tend to be flexible.

This research investigated a mediating model within a conceptual framework encompassing internal control systems, fraud prevention mechanisms, and good university governance in the context of Indonesian higher education institutions. While earlier studies had analyzed the direct link between internal control systems and fraud prevention [29-31] limited attention had been given to exploring the precursors of internal control through a mediating model, particularly within the higher education sector. This oversight underscored the necessity for university management in Indonesia to strengthen governance practices as a strategic approach to mitigating financial fraud. Additionally, scholarly inquiry into fraud within the higher education environment remained limited, especially in Eastern Indonesia. As the provincial capital of Papua, Jayapura offered a valuable opportunity to broaden global understanding by highlighting variables from a region frequently marginalized in research dominated by institutions in Java. Although the core mission of higher education institutions was to uphold the tri dharma education, research, and community service significant challenges persisted in addressing the risk of fraudulent practices.

II. LITERATURE REVIEW

The relationship between principals and agents within organizations, particularly in decision-making contexts, has been a significant subject of study in organizational theory. As higher education institutions face challenges in governance and fraud prevention, understanding the dynamics of agency relationships becomes crucial. Agency theory offered a conceptual basis for examining conflicts and associated costs that emerged from the delegation of decision-making authority. It highlights the issues that emerge when the interests of the principal and agent are misaligned, leading to inefficiencies and increased costs. This theory serves as a foundation for addressing governance issues in various sectors, including higher education where decision-makers (agents) did not necessarily act in alignment with the best interests of the institutions (principals). In this context, agency theory helps to explore the role of governance mechanisms in ensuring that agents align their actions with institutional goals.

1. AGENCY THEORY

Agency theory concentrated on the formulation of contracts aimed at resolving issues and escalating costs arising from agency relationships, especially concerning the delegation of decision-making authority to agents [32]. At its core, agency theory emphasized the dynamic between two parties: the principal, who delegates authority, and the agent, who accepts it. This interaction was framed within a collaborative construct often referred to as the "nexus of contracts." The theory conceptualized the relationship as one in which the agent was entrusted with carrying out tasks or delivering services under a contract established on behalf of the principal, thereby granting the agent significant discretion to formulate policies intended to advance the principal's interests. The principal, in turn, engaged the agent through contractual agreements to ensure that actions were aligned with the principal's objectives [33].

2. FRAUD THEORY

The initial Fraud Theory included three components that triggered fraudulent behavior: Pressure, Opportunity, and Rationalization. This framework, commonly known as the fraud triangle, was introduced



by [34]. The theory formed the basis for subsequent theories, such as the fraud diamond, introduced by [35], which added a fourth element: capability. Expanding further, the fraud pentagon presented by Crowe "incorporated arrogance as an additional element, while the fraud hexagon introduced collusion". Collusion referred to the actions of a group of individuals working together to deceive and defraud others, often through coordinated agreements aimed at doing so. In certain instances, related party transactions led to dishonest agreements that compromised stakeholder interests [36].

This study utilized the fraud hexagon as one of its variables, as it represented the most recent theory and an enhancement of the previous three models proposed by Vousinas. The fraud hexagon included six elements: Pressure, Capability, Opportunity, Rationalization, Collusion, and Arrogance. Study [37] later introduced collusion as a new factor, identifying it as a critical element that drove individuals to commit financial fraud. Collusion emerged as a central factor in several complex and harmful cases, referring to fraudulent agreements made between two or more individuals [38-40]. Collusion in the public sector, particularly at the regional level, became increasingly widespread [41-42]. Collusion involved dishonest and illegal behavior, often characterized by secret agreements, frequently accompanied by bribes or monetary inducements benefiting specific individuals or groups.

3. STEWARDSHIP THEORY

Stewardship theory provides a framework in which managers are driven not by personal goals but by the desire to achieve outcomes that benefit the organization [43-44]. According to [45] executives under this theory act as stewards, motivated to align their actions with the interests of the principal. Additionally, stewards are unlikely to leave the organization, as they are committed to achieving organizational goals. The theory posits that individuals within an organization should prioritize the organization's objectives over their personal ambitions. This theory is particularly applicable to research in public sector accounting, where government organizations are designed to meet the informational needs regarding the relationship between stewards and principals [46]. Unlike private organizations that focus on profit generation, public sector organizations emphasize the delivery of services.

4. INTERNAL CONTROL SYSTEM

According to the Committee of Sponsoring Organizations (COSO), as referenced in [47], internal control was characterized as a systematic set of processes executed by a company's board of directors, executive management, and other personnel. Its purpose was to furnish reasonable assurance that the organization would attain objectives in three key domains: (a) operational effectiveness and efficiency; (b) reliability of financial reporting; and (c) adherence to applicable laws and regulations. When internal control mechanisms were implemented effectively and remained closely aligned with the institution's strategic aims, they were considered to be of high quality. The performance of these controls was evaluated based on the degree to which each activity or program fulfilled its predetermined objectives.

5. COMPONENTS OF INTERNAL CONTROL

The COSO framework identified five core elements of internal control. The first, the Control Environment, highlighted the importance of properly implementing control mechanisms especially within accounting processes and related procedures. This environment was shaped by factors such as organizational integrity and ethical standards, dedication to professional expertise, the influence of the board of directors and audit committee, management's guiding philosophy and operational approach, the organizational hierarchy, clear assignment of authority and accountability, and human resource policies [48]. The second element, Risk Assessment, entailed detecting and evaluating risks that could impede the organization, then devising appropriate mitigation strategies. Third, Control Activities required that all transactions receive authorization from designated personnel, combined with adequate segregation of duties, thorough documentation, secure record-keeping, independent verifications, and routine assessments of recorded data. These activities fell into four categories: duty segregation, information-processing controls, physical safeguards, and performance evaluations [48]. Fourth, Information Processing and Communication involved



the continual collection, processing, and sharing of information, allowing employees to adapt their responsibilities as necessary. The fifth element, Monitoring, ensured that internal controls remained effective over time. Together, these components operated to offer reasonable assurance that the organization would meet its goals concerning dependable financial reporting, efficient operations, and adherence to relevant laws and regulations.

6. GOOD UNIVERSITY GOVERNANCE

Corporate governance is associated with effective decision-making, which is facilitated through organizational culture, values, processes, policies, and structures to achieve profitable, efficient, and responsible business management while considering stakeholder interests [49]. In contrast, Good University Governance (GUG), as described by [24], refers to the application of the fundamental principles of the "good governance" concept within the governance systems and processes of higher education institutions. This is achieved through adjustments based on values that must be upheld in the administration of higher education and education in general. GUG encompasses key principles such as transparency, accountability, responsibility, independence, and fairness. Furthermore, the implementation of GUG enhances public accountability by ensuring that decisions, policies, or programs within higher education institutions are accessible to stakeholders who require them. This is especially critical in the planning, implementation, and reporting processes of the Three Pillars, ensuring that stakeholders remain informed through public access and proper procedures [50].

7. FRAUD PREVENTION

Accounting fraud is deemed illegal and encompasses any deliberate attempt to deceive and acquire assets or rights belonging to others [51]. According to [52], accounting fraud can be classified into three primary types: "financial statement fraud, asset misappropriation, and corruption. Financial statement fraud involves manipulating financial reports to serve specific interests." Asset misappropriation refers to the theft or misuse of organizational assets, and this type of fraud is the easiest to detect due to its measurable nature. Corruption, the most difficult type of fraud to detect, involves collusion with other parties and is particularly prevalent in developing countries, where law enforcement is weak and awareness of good governance is limited, raising concerns about the integrity of officials. Corruption may include abuses of authority, conflicts of interest, bribery, illegal gratuities, and economic extortion.

Fraud prevention is an integrated strategy aimed at addressing the root causes, such as reducing opportunities for fraudulent activities, minimizing employee pressure to meet needs, and eliminating justifications for committing fraud [53]. Preventing fraud is often considered the most effective method to mitigate losses from fraudulent activities [54, 55] elaborated on fraud prevention by outlining several control mechanisms, including the creation of policies, procedures, organizational structures, control techniques, and fostering employee participation. Organizations must establish policies that create an environment conducive to preventing and addressing fraudulent behavior. Both management and employees must be committed to preventing fraud and deviations. Public university websites also play a significant role by informing both internal and external stakeholders about the institution's anti-corruption efforts [6].

8. HYPOTHESIS DEVELOPMENT

8.1 The Impact of Internal Control Systems on Good University Governance

Good University Governance (GUG) plays a crucial role in ensuring transparency, accountability, and financial integrity within higher education institutions. However, failures in governance often stem from weak internal controls, leading to financial mismanagement and fraud [56]. Agency Theory [33] these issues, suggesting that university administrators (agents) might act in their own self-interest rather than prioritize institutional goals. Internal control systems help mitigate such risks by enforcing accountability, audit procedures, compliance measures, and enhancing governance practices [57]. Law No. 12 of 2012 in Indonesia mandates that universities adhere to principles of governance, including transparency and accountability. Effective internal controls strengthen compliance, reduce financial irregularities, and improve governance



effectiveness [57]. Therefore, internal control systems are vital for ensuring institutional governance, compliance, and ethical leadership. Based on this, the following hypothesis is proposed:

• H1: The implementation of internal control systems enhances transparency, accountability, and financial compliance in higher education institutions, thereby strengthening university governance.

8.2 The Impact of Good University Governance on Fraud Prevention

Good University Governance enables the application of fundamental governance principles within higher education institutions, incorporating values related to education, academic knowledge, and human development [58]. Corruption within higher education, particularly in public universities, indicates that existing systems may not function effectively or are considered inadequate. All policies, programs, and funds used in higher education must be managed transparently, as they pertain to the three pillars of higher education. This aligns with the Fraud Hexagon theory of collusion, which is often observed in universities. The GUG framework serves as an extension of Good Governance and effective governmental management. Research has shown that corporate governance is critical in preventing and detecting fraud [59]. Good University Governance is considered a foundational element for implementing management practices that are essential for fraud prevention in higher education institutions [60]. Therefore, Good University Governance is necessary to prevent fraud. Thus, we propose the following hypothesis:

• H2: Good University Governance has a positive influence on Fraud Prevention.

8.3 The Impact of Internal Control Systems on Fraud Prevention

Internal control is essential for achieving organizational objectives. Fraud represents a significant risk that requires the implementation of internal controls to reduce or eliminate its occurrence within an organization. Internal control encompasses organizational structures, procedures, and standards that safeguard company assets, verify the accuracy of financial data, promote operational efficiency, and ensure compliance with management policies. Internal control systems are put in place to achieve organizational goals, such as securing assets, assessing data accuracy, improving operational performance, and ensuring compliance with regulations. This aligns with Stewardship Theory, which posits that individuals within an organization should prioritize the organization's objectives over their personal interests. Previous studies have shown that effective internal control systems significantly influence fraud prevention and detection [29-31]. If internal controls are poorly implemented and procedures are not followed, it creates opportunities for employees to engage in fraudulent behavior. Other studies highlight that internal controls are pivotal in curbing accounting fraud among finance employees in higher education institutions [58-61]. Based on this, the following hypothesis is proposed:

• H3: Internal Control Systems positively influence Fraud Prevention.

8.4 The Impact of Control Systems on Fraud Prevention through Good University Governance

The adoption of Good University Governance (GUG) has encouraged several higher education institutions to implement policies to prevent fraud. One approach involves facilitating internal audits and optimizing internal control systems to mitigate potential fraud within the organization. When fraud prevention techniques are applied effectively, they enhance the organization's reputation, thereby fostering public trust. Based on the Fraud Diamond theory in the context of university management, the propensity for individuals to commit fraud may be influenced by the capability aspect. This element of capability can be evaluated based on factors such as job position, moral reasoning, and competencies. Inadequate internal control systems within an organization can reveal inefficient operational practices, which may lead to fraud [62]. Moreover, the principles of good university governance go beyond merely establishing codes of ethics to prevent illegal activities; they also include aspects such as transparency, non-discrimination, clear accountability, and optimal public service. Therefore, the following hypothesis is proposed:

H4: Internal Control Systems positively influence Fraud Prevention through Good University Governance.

Figure 1 depicted the study's conceptual framework, delineating the connections among Internal Control Systems, Good University Governance, and Fraud Prevention, as well as the four hypotheses (H1–H4) under investigation. This framework enabled the assessment of both the direct and mediated impacts of internal



control systems on fraud prevention via the mechanism of good university governance. Hypotheses were evaluated through Partial Least Squares Structural Equation Modeling (PLS-SEM).

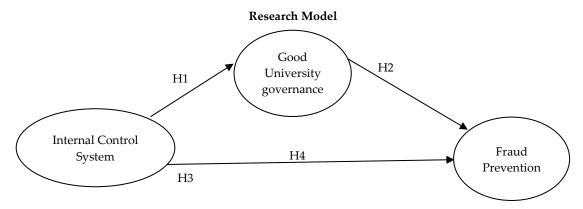


FIGURE 1. Research model.

III. METHODOLOGY

The research adopted a causal design to investigate the relationships among internal control systems, good university governance, and fraud prevention within higher education institutions. A quantitative methodology was implemented, and hypotheses were assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The study incorporated latent variables to assess constructs that could not be directly measured, focusing on reflective latent variables, where the independent variable was reflected in its indicators. The population consisted of individuals involved in budget preparation and expenditure within higher education institutions in Jayapura, Indonesia. A purposive sampling technique was applied, targeting Deans, Associate Deans, Treasurers, Heads of Departments, and members of the Quality Assurance Team. Primary data were collected through online questionnaires distributed to the relevant participants. Instruments included questionnaires with Likert scale items measuring internal control systems, good university governance, and fraud prevention. Indicators for internal control were based on the COSO framework, while governance principles were adapted from Wijatno [63], and fraud prevention indicators followed Edwards [64]. Data analysis was conducted using PLS-SEM, with the structural model assessed using R-squared, the Q-squared for predictive relevance, and t-tests for the significance of path coefficients. The measurement model was evaluated for convergent and discriminant validity based on correlations and AVE square roots, with a focus on ensuring reliable construct measures.

IV. RESULTS AND DISCUSSION

1. THE DESCRIPTION OF DATA COLLECTION

The data for this study were collected using a Purposive Sampling technique, targeting specific criteria related to the research objectives. An online survey was administered to gather empirical evidence on the influence of internal control systems on fraud prevention, with internal control systems acting as an intervening variable. A total of 129 respondents participated in the survey, consisting of academic staff, including Deans, Associate Deans, Heads of Departments, Heads of Study Programs, Treasurers, and members of the Quality Assurance Team (SPI). These responses formed the sample used for the analysis in this research.



Table 1. Demographic characteristics of survey respondents.

No	Demographic Items	Category	Frequency	Percentage
		Cenderawasih University	100	77.5
1	College	Jayapura University of Science and Technology	7	5.4
		Yapis University of Papua	22	17.1
		Faculty of Economics and Business	27	20.9
		faculty of Law	9	7.0
		Faculty of Social and Political Sciences	19	14.7
	Unit	Faculty of Medicine	7	5.4
_		Faculty of Teacher Training and Education	27	20.9
2		Faculty of Health	5	3.9
		Faculty of Mathematics and Natural Sciences	5	3.9
		Faculty of Engineering	13	10.1
		Graduate program	4	3.1
		Internal Audit Unit	13	10.1
	Last education	Doctor	64	49.6
3		Master	38	29.5
		Bachelor	27	20.9
		Member of Internal Audit Unit	11	8.5
		Treasurer	28	21.7
		Dean	10	7.8
	Position	Head of Internal Audit Unit	1	0.8
		head of program	16	12.4
4		head of the study program	33	25.6
		Secretary of Internal Supervisory Unit	1	0.8
		Vice Dean 1	10	7.8
		Vice Dean 2	10	7.8
		Vice Dean 3	9	7.0
		<30 years	9	7.0
5	Age	>51 years	37	28.7
	Č	31-51 years	83	64.3
	Gender	Man	53	41.1
6		Woman	76	58.9

2. VALIDITY TESTING

A validity assessment was performed with SmartPLS, utilizing convergent validity criteria to evaluate the constructs in this research. The study examined three key constructs: the independent variable (implementation of the internal control system), the mediating variable (Good University Governance), and the dependent variable (fraud prevention). Each construct's validity was determined by reviewing its outer model loadings, where convergent validity was indicated by sufficiently high loading values.

The results of the outer model measurement, as shown in Figure 2, confirmed the convergent validity of the indicators used in the study. All indicators demonstrated outer loading values greater than 0.5, indicating that they were valid for measuring the intended variables.



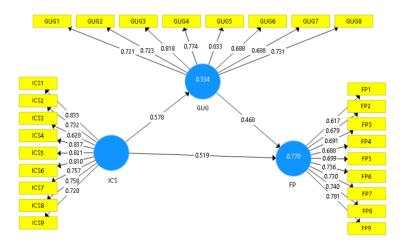


FIGURE 2. Outer model measurement results confirming convergent validity.

The results of the outer model test, as presented above, indicate that all indicators have outer loading values greater than 0.5. Therefore, these indicators are considered valid for measuring the intended variables.

3. RELIABILITY TESTING

Reliability was evaluated by analyzing the consistency of the indicator sets for each construct. Two statistics were employed: Composite Reliability and Average Variance Extracted (AVE). Table 2 displays the Composite Reliability outcomes for each construct, all of which exceeded the 0.70 threshold, thereby confirming that the indicators demonstrated acceptable reliability for inclusion in the analysis.

Table 2. Composite reliability and average variance extracted (AVE) for constructs.

Variable	Cronbach's	Composite	AVE
	Alpha	reliability (rho_a)	
Fraud Prevention	0.876	0.900	0.502
Good University Governance	0.889	0.910	0.561
Internal Control System	0.912	0.928	0.591

3.1 Composite Reliability

The composite reliability results are considered valid if the reliability values for the variables and indicators exceed 0.70. As presented in Table 1, the composite reliability values for all variables were above this threshold, suggesting that the indicators are trustworthy and suitable for use in this study. Specifically, the composite reliability values for the variables were as follows: Fraud Prevention recorded a value of 0.00, Good University Governance had a value of 0.910, and the Internal Control System showed a value of 0.928. These findings confirm the strong reliability of these variables, indicating that they are robust and dependable for further analysis. The high reliability values also highlight the accuracy and consistency of the data, ensuring that the results are valid and can be confidently used in subsequent research.

3.2 Average Variance Extracted (AVE)

To assess discriminant validity, the AVE values for each variable were compared to the correlation between the variables in the model. The results of the Average Variance Extracted (AVE) for the variables are presented in Table 1. The AVE values for the variables were as follows: Fraud Prevention had an AVE of 0.502, Good



University Governance had an AVE of 0.561, and the Internal Control System had an AVE of 0.534. These results suggest good discriminant validity, as the AVE values are above the threshold of 0.50.

4. INNER MODEL TESTING

The structural (inner) model was examined to assess the hypothesized relationships, their statistical significance, and the R-squared values for the dependent constructs. Analysis commenced with the calculation of R-squared for each endogenous latent variable, reflecting the proportion of variance explained by the predictor constructs. The adjusted R-squared was 0.750 for Fraud Prevention and 0.306 for Good University Governance, indicating that the predictors accounted for 75.0% and 30.6% of the variance in these constructs, respectively. Figure 3 presented the bootstrap-derived path diagram, which visually illustrated the relationships among the Internal Control System, Good University Governance, and Fraud Prevention constructs.

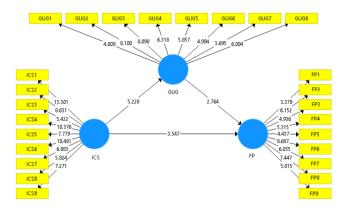


FIGURE 3. Bootstrap-derived path diagram of the structural model.

5. HYPOTHESIS TESTING

The estimation of parametric significance provided crucial insights into the relationships between the variables in this study. The criterion for accepting or rejecting the proposed hypotheses was established at ± 1.96 . The results from the estimated output, which can be found in Table 3, demonstrate the significance of the correlations between the variables. These results allowed for the evaluation of the hypotheses, determining whether the proposed relationships were statistically significant.

		_	
	T statistics	P values	Description
Internal Control System – Good	5.228	0.000	H1 accepted
University Governance			
Good University Governance -	2.764	0.000	H2 accepted
Fraud Prevention			
Internal Control System – Fraud	3.547	0.000	H3 accepted
Prevention			
Internal Control System ->	2.216	0.034	H4 accepted
Good University Governance->			
Fraud Prevention			

Table 3. Hypothesis testing.



The results from the hypothesis testing strongly support all the proposed hypotheses. Hypothesis 1 was confirmed with a T-statistic value of 5.228, exceeding the critical value of 1.96, and a p-value of 0.000, which indicates statistical significance below the 0.005 threshold. Similarly, Hypothesis 2 was confirmed with a T-statistic of 2.764, surpassing the critical value of 1.96, and a p-value of 0.000, further confirming the hypothesis. Hypothesis 3 was also validated, with a T-statistic of 3.547, exceeding the 1.96 threshold, and a p-value of 0.000. Finally, Hypothesis 4 was confirmed through the indirect effect (path analysis), showing a T-statistic value of 2.216, surpassing the critical value of 1.96, and a p-value of 0.034, which is below the 0.005 significance level. These results provide strong evidence supporting all four hypotheses, confirming their statistical significance.

5.1 The Impact of the Implementation of the Internal Control System on Good University Governance

The findings indicate that the implementation of internal control systems has a significant and positive impact on Good University Governance (GUG). This aligns with the work of [65], who demonstrated that internal controls have a positive and significant effect on fraud prevention. The result supports Stewardship Theory, which suggests that management in higher education institutions is responsible to stakeholders for protecting assets through effective internal controls. In this scenario, the owner acts as the principal, while management functions as the steward. Furthermore, the trust placed in higher education institutions allows them to provide quality services and meet their financial accountability, thereby achieving governance objectives. Adhering to the Government Internal Control System (SPIP) may indicate that financial reporting is transparent and free from fraud, as indicated by [66]. However, these findings contradict a study by [67], which found no significant variation in internal control implementation when specific criteria were met.

5.2 The Impact of Good University Governance on Fraud Prevention

The study revealed that Good University Governance has a significant and positive effect on fraud prevention. This finding aligns with prior research that emphasizes the importance of good governance practices in higher education, which incorporate values related to education, academic knowledge, and holistic human development [58]. Good University Governance grants universities the autonomy to manage their affairs independently, as argued by [68]. The autonomy in higher education requires the adoption of governance practices that adhere to fundamental principles, which in turn help to reduce fraudulent activities. Effective implementation of these principles, especially in budgeting and financial management, can lead to fraud prevention. Previous studies, including those by [69] and [70], found that good governance principles significantly impact fraud prevention in the public sector. Moreover, [71] concluded that implementing Good University Governance positively affects university performance, contributing to a reduction in fraud.

5.3 The Impact of the Implementation of the Internal Control System on Fraud Prevention

The results confirm that internal control systems have a significant and positive effect on fraud prevention. This finding supports previous studies [29-31] which demonstrated the significant impact of internal controls on fraud prevention. Fraud in universities has become a growing concern for governments and stakeholders [5] fueled by the rise of academic capitalism [72]. Evidence also suggests that weakened state controls have created opportunities for management to exert excessive influence [73]. According to Fraud Theory, pressure from weak internal controls creates opportunities for fraudulent behavior. However, when internal controls are well-designed and effective, they can significantly protect against fraud, even when there are individuals within the academic community prone to fraudulent actions. Fraud has negative consequences on universities and society, as it damages the reputation of academic institutions [74], and threatens the legitimacy of universities as knowledge producers, which in turn impacts societal progress [75]. To mitigate fraud, universities should implement fraud-prevention initiatives, such as anti-corruption training, which have been proven to be effective [76].

5.4 The Impact of the Control System on Fraud Prevention through Good University Governance

The study confirmed that internal control systems significantly impact fraud prevention through Good University Governance. As the organizational control system improves, so does the governance of the



educational institution. A well-established internal control system enhances employees' efficiency in executing tasks and functions. Clear regulations and a well-structured work culture improve resource effectiveness, which in turn reduces fraudulent activities. This is consistent with the view that fraud often arises from poor organizational management [77]. Good university governance provides autonomy, allowing institutions to manage their affairs independently [78]. By applying the principles of good governance, fraudulent behavior can be reduced. When linked to Fraud Diamond Theory in the context of higher education management, the capability element explains that the propensity to commit fraud is influenced by factors such as job position, moral reasoning, and competencies. Previous studies suggest that inadequate internal control systems expose inefficient operational practices, which may lead to fraud [62]. Fraud is often a result of opportunity, pressure, and rationalization, and when individuals possess the necessary skills and capabilities, they may engage in fraudulent activities within the context of higher education governance.

V. CONCLUSION

The study demonstrated that the adoption of internal control systems had a favorable effect on Good University Governance (GUG). Moreover, both GUG and the implementation of internal control systems were shown to exert significant positive influences on fraud prevention within higher education settings. The indirect-effect analysis further revealed that internal control systems impacted fraud prevention through the mediating role of GUG. To enhance governance effectiveness and diminish fraud occurrences in academic institutions, this study underscored the necessity of cooperative engagement among all higher education stakeholders. Nonetheless, the research bore certain limitations: it was confined to institutions in Jayapura and considered only the internal control system as the independent variable affecting fraud prevention. Future investigations should extend the scope to include universities across Indonesia and incorporate additional predictors of fraudulent behavior, thereby providing a more holistic understanding of the determinants of fraud in higher education.

Funding Statement

This research was not supported by any external funding sources.

Author Contributions

Rudiawie Larasati: Conceptualization, Methodology, Writing Original Draft, Supervision. Heru Tjaraka: Investigation, Resources, Writing Review & Editing, Validation. All authors have approved the final manuscript submitted for publication.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data utilized in this study can be made available upon reasonable request to the corresponding author. However, certain data cannot be shared publicly due to concerns regarding ethics, privacy, or security. Data relevant to this study will be available for future consideration according to the Share Upon Reasonable Request policy followed by this journal.

Acknowledgments

We would like to express our deepest gratitude to all parties who have contributed to the completion of this research. Our sincere appreciation goes to the institutions and individuals who have provided valuable data and insights.



REFERENCES

- Giroux, H. A. (2012). Neoliberalism, youth, and the leasing of higher education. In Global neoliberalism and education and its consequences. Routledge.
- 2. Supartono, W., Wahyuni, H. I., Yulianto, V. I., & Umemiya, N. (2024). The impact of studying abroad on the three pillars of higher education at Universitas Gadjah Mada, Indonesia: Challenges and breakthroughs. In Sustainable Development Goals Series (pp. 163–179). Springer.
- 3. Etzkowitz, H., & Klofsten, M. (2005). The innovating region: Toward a theory of knowledge-based regional development. R and D Management, 35(3), 243–255.
- Huang, F. (2017). University governance in China and Japan: Major findings from national surveys. International Journal of Educational Development, October 2016.
- 5. Joseph, C., Omar, N. H., Janang, J. T., Rahmat, M., & Madi, N. (2021). Development of the university fraud prevention disclosure index. Journal of Financial Crime, 28(3), 883–891.
- 6. Hallak, J., & Poisson, M. (2007). Corrupt schools, corrupt universities: What can be done? Paris: International Institute for Education Planning.
- 7. Osipian, A. L. (2017). University autonomy in Ukraine: Higher education corruption and the state. Communist and Post-Communist Studies, 50(3), 233–243.
- 8. Shore, C. **(2018)**. *How corrupt are universities? Audit culture, fraud prevention, and the big four accountancy firms*. *Current Anthropology, 59*(S18), S92–S104.
- Arifin, J. (2020). Determinan kecurangan akuntansi di lingkungan perguruan tinggi. EKUITAS (Jurnal Ekonomi dan Keuangan), 4(2), 187–204.
- 10. Ikbal, M., Irwansyah, I., Paminto, A., Ulfah, Y., & Darma, D. C. (2020). Explores the specific context of financial statement fraud based on empirical from Indonesia. Universal Journal of Accounting and Finance, 8(2), 29–40.
- 11. Thoyibatun, S. **(2012)**. Faktor-faktor yang berpengaruh terhadap perilaku tidak etis dan kecenderungan kecurangan akuntansi serta akibatnya terhadap kinerja organisasi. EKUITAS (Jurnal Ekonomi dan Keuangan), 16(2), 245.
- 12. Andriani, L., Nugroho, Y. W., Firdaus, M. A., & Kholidah, K. (2023). Juridical analysis of land asset utilization on legal entity college State University of Surabaya. E3S Web Conf., 450, 03008.
- 13. Umar, H., Safaria, S., Mudiar, W., & Purba, R. B. (2022). Analysis of the implementation of corruption detection using Hu-model in state financial management institutions. Vol. 6(12), 765–778.
- 14. El Junusi, R. (2020). COSO-based internal control: Efforts towards good university governance. Journal of Islamic Accounting and Finance Research, 2(1), 27.
- 15. Geng, X., & Geng, X. (2023). RETRACTED: Combining grey relation analysis with MCGDM to evaluate the higher education management quality with interval-valued neutrosophic sets. Journal of Intelligent & Fuzzy Systems, 45(3), 3791–3805.
- 16. Larasati, R., Asnawi, M., & Hafizrianda, Y. (2018). Analisis penerapan good university governance pada perguruan tinggi di Kota Jayapura. Journal of Applied Managerial Accounting, 2(2), 304–323.
- 17. Tempo. (2023). ICW temukan lima modus korupsi di kampus. Koran Tempo.
- 18. Wiguna, I. M. A., Atmadja, A. T., & Yuniarta, G. A. (2022). Fraud dalam pengelolaan keuangan desa adat. Vol. 12(3), 547-558.
- 19. BPK. (2019). Ikhtisar hasil pemeriksaan BPK.
- 20. Trakman, L., & South, N. (2008). Governance. Vol. 62(April), 63-83.
- 21. UGSC. (2012). The University Governance Screening Card: A Tool for Benchmarking University Governance. The World Bank, 1–2.
- 22. Wijatno, S. (2009). Pengelolaan Perguruan Tinggi Secara Efisien, Efektif dan Ekonomis. Jakarta: Salemba Empat.
- Danescu, T., Prozan, M., & Danescu, A. C. (2011). Internal Control Activities: Cause and Effect of a Good Governance of Accounting Reportings and Fiscal Declarations. Annales Universitatis Apulensis Series Oeconomica, 2(13), 339–349.
- 24. Braithwaite, J. (1982). All use subject to JSTOR Terms and Conditions Enforced Self-Regulation: A New Strategy for Corporate Crime Control. Michigan Law Review, 80(7), 1466–1507.
- 25. Daniri, M. A., Wahyudi, S., Pangestuti, I. R. D., & Hersugondo. (2023). The Role of Good University Governance for Transformation Towards the Entrepreneurial University. Corporate and Business Strategy Review, 4(1), 167.
- 26. Rezyta, D. A. (2019). Pengaruh Satuan Pengawasan Internal (SPI), Internal Control, dan Budaya Organisasi Terhadap Good University Governance (GUG). Doctoral Dissertation, Unimed.
- 27. Rashid, C. A. (2022). The Role of Internal Control in Fraud Prevention and Detection. Journal of Global Economics and Business, 3(8), 4355.



- 28. Ogwiji, J., & Lasisi, I. O. (2022). Internal Control System and Fraud Prevention of Quoted Financial Services Firms in Nigeria: A Smart PLS-SEM Approach. European Journal of Accounting, Auditing and Finance Research, 10(4), 1–33.
- 29. Bhat, S. (2023). The Effectiveness of Internal Controls in Preventing Fraud and Financial Misconduct. Journal of Law and Sustainable Development, 11(5), e1178.
- 30. Hendrastuti, R., & Harahap, R. F. (2023). Agency Theory: Review of the Theory and Current Research. Jurnal Akuntansi Aktual, 10(1), 85100
- 31. Jensen, M., & Meckling, W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics, 3(30).
- 32. Cressey, D. R. (1953). Other People's Money: A Study of the Social Psychology of Embezzlement.
- 33. Wolfe, D. T., & Hermanson, D. R. (2004). The Fraud Diamond: Considering the Four Elements of Fraud. The CPA Journal, 74(12), 38–42.
- 34. Horwath, C. (2011). IIA Practice Guide: Fraud and Internal Audit. Western Regional Conference, pp. 1-49.
- 35. Bader, A. A. A., Hajar, Y. A. A., Weshah, S. R. S., & Almasri, B. K. (2024). Predicting Risk of and Motives Behind Fraud in Financial Statements of Jordanian Industrial Firms Using Hexagon Theory. Journal of Risk and Financial Management, 17(3), p. 120.
- 36. Vousinas, G. L. (2019). Advancing Theory of Fraud: The S.C.O.R.E. Model. Journal of Financial Crime, 26(1), 372-381.
- 37. Bajari, P., & Ye, L. (2003). Deciding Between Competition and Collusion. Review of Economics and Statistics, 85(4), 971–989.
- 38. Luz, R. D., & Spagnolo, G. (2017). Leniency, Collusion, Corruption, and Whistleblowing, 13(4).
- 39. Sadowksi, G., & Rathle, P. (2015). The World's Leading Graph Database Fraud Detection: Discovering Connections Using Graph Databases.
- 40. Khan, A., & Krishnan, S. (2021). Moderating Effects of Business-Systems Corruption on Corruption in Basic National Institutions and Electronic Government Maturity: Insights from a Dynamic Panel Data Analysis. International Journal of Information Management, 59, p. 102349.
- 41. Paredes, M., Gianella, C., & Olivera, S. (2024). Corrupting Climate Change Institutions from the Inside: Systemic Collusion in the Peruvian Forest Governance. Political Geography, 108, p. 102991.
- 42. Lestari, E. B., Tarjo, & Prasteyono. (2017). The Factors Affecting Tendency of Fraud in Government Sector. Journal of Auditing, Finance, and Forensic Accounting, 5(2), p. 67.
- 43. Martin, J. A., & Butler, F. C. (2017). Agent and Stewardship Behavior: How Do They Differ? Journal of Management & Organization, 23(5), 633-646
- 44. Donaldson, L., & Davis, J. H. (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns. Australian Journal of Management, 16(1), 49–64.
- 45. Torfing, J., & Bentzen, T. Ø. (2020). Does Stewardship Theory Provide a Viable Alternative to Control-Fixated Performance Management? Administrative Sciences, 10(4), Art. no. 4.
- 46. Rubino, M., & Vitolla, F. (2014). Internal Control Over Financial Reporting: Opportunities Using the COBIT Framework, 29(8).
- 47. Boynton, W. C., Johnson, R. N., & Kell, W. G. (2001). Modern Auditing, Subsequent edition. New York: John Wiley & Sons Inc.
- 48. Yuwono, C. (2011). Pengaruh Peranan Auditor Internal Terhadap Penerapan Good Corporate Governance Pada BUMN Jember. SKRIPSI Universitas Diponegoro.
- 49. David, J., Tewall, B., Sendow, G. M., Trang, I., & Lumintang, G. G. (2022). Good University Governance, Reputation Risk, and Public Accountability in Private Universities (PTS). Jurnal Ilmiah Manajemen dan Bisnis, 7(2), 142–156.
- 50. Agrawal, A., & Cooper, T. (2015). Insider Trading Before Accounting Scandals. Journal of Corporate Finance, 34, 169–190.
- 51. Kassem, R., & Higson, A. W. (2016). External Auditors and Corporate Corruption: Implications for External Audit Regulators. Current Issues in Auditing, 10(1), 1–10.
- 52. Sudarmo, A., Sawardi, T., & Yulianto. (2008). *Fraud Auditing* (5th ed.). Bogor: Pusat Pendidikan dan Pelatihan Pengawasan Badan Pengawasan Keuangan dan Pembangunan.
- 53. Rathakrishnan, S., & Baskar, T. (2024). Fortifying Financial Integrity: Insights into Fraud Detection and Prevention Strategies Across Various Financial Companies in Sri Lanka from the Perspectives of Accountants and Internal Auditors in an Analytical Review. International Journal of Research and Innovation in Social Science, VII(VI), 2168–2181.
- 54. Sujana, E., & Saputra, K. A. K. (2020). Fraud Detection and Prevention Methods: Inspector's Auditor's Perception in Bali. Journal of Advanced Research in Dynamic and Control Systems, 12(4), 08–16.
- 55. Muslim, M. (2025). The Failure of Governance and Internal Controls in Preventing Fraud in the Company. Advances in Managerial Auditing Research, 3(1), 15–29.
- 56. Ziorklui, J. E. K., Ampofo, F. O., Antwi, B. O., & Nyonyoh, N. (2024). Effectiveness of Internal Controls Mechanisms in Preventing and Detecting Fraud. Finance & Accounting Research Journal, 6(7), 1259–1274.



- 57. Ansori, A. F., Evana, E., & Gamayuni, R. R. (2018). The Effect of Good University Governance, Effectiveness of Internal Controlling System, and Obedience of Accounting Regulation on the Tendency of Fraud in PTKIN-BLU. Research Journal of Finance and Accounting, 9(4), 105112.
- 58. Halbouni, S. S., Obeid, N., & Garbou, A. **(2016)**. Corporate Governance and Information Technology in Fraud Prevention and Detection: Evidence from the UAE. Managerial Auditing Journal, 31(6/7), 589–628.
- 59. Qinthara, A. F., & Prasetyo, H. (2023). Penguatan Rancangan Good University Governance Dalam Pencegahan Korupsi Di Perguruan Tinggi. Rechtldee, 8(1), 87–105.
- 60. Kurrohman, T., Lailiyah, A., & Wahyuni, N. I. (2017). Determinant of Fraudulent in Government: An Empirical Analysis in Situbondo Regency, East Java, Indonesia. International Journal of Economics and Management, 11(1), 133–140.
- 61. Yulianti, R., Maryam, C., Hamdiah, Mahdi, & Khairuna. (2024). The Role of Internal Control Systems and Good Corporate Governance in Fraud Prevention Efforts: A Literature Review. Frontiers in Business and Economics, 3(1), 39–54.
- 62. Wijanto, S. (2009). Pengelolaan Perguruan Tinggi Secara Efisien, Efektif, dan Ekonomis. Jakarta: Salemba Empat.
- 63. Edwards, J. (2012). Company Investigations. In Fraud. Routledge.
- 64. Mappanyukki, R., Setyawati, H., & Muti'ah. (2012). Pengaruh Penerapan Pengendalian Internal terhadap Pencegahan Fraud Pengadaan Barang dan Implikasinya pada Kinerja Keuangan (Studi pada Rumah Sakit Pemerintah dan Swasta di Jakarta). Profita, IV, 11–26.
- Altamuro, J., & Beatty, A. (2010). How Does Internal Control Regulation Affect Financial Reporting?. Journal of Accounting and Economics, 49(1), 58–74.
- 66. Bongani, N. (2013). Application of Internal Controls in NGOs: Evidence from Zimbabwe. Journal of Finance and Accounting, 1(2), Art. no.2.
- 67. Shattock, M. (2006). Policy Drivers in UK Higher Education in Historical Perspective: 'Inside Out', 'Outside In' and the Contribution of Research. Higher Education Quarterly, 60(2), 130–140.
- 68. Periansya, P., Dewata, E., R, S. A., Sari, Y., & Basyith, A. (2023). Whistleblowing, Fraud Prevention, and Fraud Awareness: Evidence from the Palembang Local Government of Indonesia. Problems and Perspectives in Management, 21(2), 556–566.
- 69. Kamaliah, K., Marjuni, N.-S., Mohamed, N., Mohd-Sanusi, Z., & Anugerah, R. (2018). Effectiveness of Monitoring Mechanisms and Mitigation of Fraud Incidents in the Public Sector. REVISTA ADMINISTRATIE SI MANAGEMENT PUBLIC, 2018(30), 82–95.
- 70. Riana, K. E., & Hadiwidjaja, R. D. (2024). Good University Governance to Universities Performance: Systematic Literature Review. Eduvest Journal of Universal Studies, 4(5), 4229–4243.
- 71. Shore, L. M., Cleveland, J. N., & Sanchez, D. (2018). *Inclusive Workplaces: A Review and Model. Human Resource Management Review*, 28(2), 176–189.
- 72. Muir, T., & Geiger, V. (2016). The Affordances of Using a Flipped Classroom Approach in the Teaching of Mathematics: A Case Study of a Grade 10 Mathematics Class. Math Ed Res J, 28(1), 149–171.
- 73. Ramos, R., Gonçalves, J., & Gonçalves, S. P. (2020). The Unbearable Lightness of Academic Fraud: Portuguese Higher Education Students' Perceptions. Education Sciences, 10(12), Art. no. 12.
- 74. Chapman, D. W., & Lindner, S. (2016). Degrees of Integrity: The Threat of Corruption in Higher Education. Studies in Higher Education, 41(2), 247–268.
- 75. Campa, D. (2018). Regulatory Enforcement and the Effectiveness of Fraud Training: A European Investigation into Earnings Manipulation. Comptabilité Contrôle Audit, 24(1), 81–111.
- 76. Youngblood, J. R. (2015). A Comprehensive Look at Fraud Identification and Prevention. New York: Routledge.

The existence of authorization by authorized parties for all transactions.

77. Sethna, B. N. (2024). Changing and Unchanging Principles in an Uncertain Age of University Governance: Autonomy, Accountability, and Innovation. In The Routledge Handbook of Global and Digital Governance Crossroads, Routledge India.

APPENDICES

Code	Item	
	Variable: Internal Control System (COSO,2002)	
ics1	The institution has a policy to create an organizational environment that is characterized by integrity and ethics.	
ics2	Every decision-making process has taken ethical values into consideration.	
ics3	Always conducting identification of risks encountered in the formulation of strategic decisions.	
ics4	The internal control system has been effectively implemented in managing activities to achieve the realization	
	of Good University Governance (GUG).	

ics5



ics6	The presence of a separation of activities or assignments in each task.	
ics7	Each university can provide a comprehensive, accurate, and timely information system.	
ics8	Internal controls can be effectively monitored through specific assessments or in alignment with established policies.	
ics9	The existence of a policy to conduct monitoring and evaluation activities.	
	Variable: Good University Governance (Wijatno, 2009)	
gug1	Conducting socialization about the strategic plan that has been developed to the academic community	
gug2	Openness in the field of finance, the system and procedures for new student admissions, the accounting system,	
	the reporting system, the recruitment of lecturers and employees, as well as the selection of structural officials	
gug3	The university where you work has evidence of financial audit reports conducted regularly.	
gug4	The existence of fair and balanced treatment to the related stakeholders (students, community, lecturers, and employees)	
gug5	An opportunity is given to interested parties to provide input and opinions for the benefit of the university.	
gug6	The existence of a positive compensation policy (rewards) for employee success.	
gug7	The existence of policies concerning punishment and/or reprimands for poor performance from each unit.	
gug8	In carrying out their respective duties and functions, each unit within the university always avoids domination	
	by any party.	
	Variable: Fraud Prevention (Festi at al.,2014)	
fp1	The university has established an anti-fraud policy.	
fp2	The establishment of fraud prevention handling procedures should preferably be done in writing and standardized.	
fp3	The university has established adequate internal controls for achieving its objectives.	
pk4	Carrying out the separation of functions that creates a mutual check condition between work units	
fp5	Has adequately implemented fraud detection procedures in the system	
fp6	The management has processed and acted against the fraud perpetrator.	
fp7	The Internal Audit has carried out the responsibility to conduct periodic evaluations and continuous	
	organizational activities at the university.	
fp8	The agency has implemented a clear division of tasks so that no one person controls all aspects of a transaction.	

Internal Audit implements adequate control over operational support media.

fp9