Influence of Internal Control Systems Mechanism in Reducing Ethical Breaches in Public Tertiary Institutions

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Abstract		Review Article

Public tertiary institutions in Nigeria face persistent challenges with ethical breaches, including fraud and policy violations, which undermine their integrity and mission. This study investigates the influence of key internal control system (ICS) mechanisms—Segregation of Duties, Control Activities, and Information & Communication—on reducing these ethical breaches, measured through adherence to codes of conduct, prevention of policy violations, and overall improvement in ethical compliance. Employing a quantitative, ex-post facto design, data were collected via a structured questionnaire from 179 key administrative and financial staff across public tertiary institutions in North Central Nigeria. Data were analyzed using descriptive statistics, correlation, and multiple linear regression. The findings reveal that Information & Communication had the strongest significant effect on Adherence to Code of Conduct ($\beta = 0.526$, $p<0.001$), explaining 51.5% of its variance. Control Activities ($\beta = 0.381$, $p<0.001$) and Segregation of Duties ($\beta = 0.291$, $p<0.001$) were the most significant predictors for the Prevention of Policy Violations ($R^2 = 0.565$). For overall Improvement in Ethical Compliance, Information & Communication ($\beta = 0.359$, $p<0.001$) and Control Activities ($\beta = 0.290$, $p<0.001$) were the principal drivers ($R^2 = 0.483$). The study concludes that ethical breach reduction is not achieved by structural controls alone but is fundamentally dependent on a transparent, well-communicated, and integrated internal control environment. Therefore, institutional reforms must prioritize strengthening communication channels and transparency alongside traditional control activities to cultivate a sustainable culture of integrity.

Keywords: Internal Control Systems, Ethical Breaches, Public Tertiary Institutions, Segregation of Duties, Control Activities, Information and Communication, Ethical Compliance, Nigeria.

Introduction

Public tertiary institutions are fundamental pillars of societal development, entrusted with the critical tasks of knowledge creation, human capital development, and the stewardship of significant public resources. However, this fiduciary role is persistently undermined by ethical breaches, encompassing a range of misconduct from academic fraud and procurement kickbacks to sexual harassment and financial mismanagement (Okafor & Ani, 2018). In the context of many public universities, particularly in developing economies, the status of ethical compliance is alarming. Reports and audit queries frequently highlight incidents of policy violations, embezzlement of funds, and a

pervasive disregard for codes of conduct, eroding institutional integrity and diverting scarce resources from academic missions (World Bank, 2020). The prevalence of these breaches is influenced by a confluence of factors, including weak governance structures, organizational culture, individual morality, and crucially, the absence or ineffectiveness of robust operational internal control systems (Muriithi, 2017). While socio-cultural factors are significant, the institutional framework designed to prevent and detect misconduct, the internal control system stands as a primary, manageable factor that can directly curb these unethical practices.

An Internal Control System (ICS) is a management-driven process, effected by an institution's governing body, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in operational effectiveness, reliability of financial reporting, and compliance with laws and regulations (COSO, 2013). In public sector entities like universities, a well-implemented ICS transcends mere financial oversight; it serves as the foundational architecture for promoting accountability, transparency, and ethical behavior. It acts as a critical deterrent to ethical breaches by systematically removing opportunities for misconduct, standardizing procedures, and embedding compliance into daily operations (Adeniji, 2019). The mechanism through which ICS influences ethics is not abstract; it establishes clear boundaries, defines processes, and creates channels for oversight and reporting. Therefore, the strength and effectiveness of an institution's internal control framework are not just administrative concerns but are fundamentally linked to its ethical health and its capacity to fulfil its public mandate (Oyedokun, 2015).

Previous research has established a general correlation between governance mechanisms and institutional performance. Studies such as those by Sule, Oke, and Ogunlowore (2018) in Nigerian public institutions confirmed that internal controls positively impact operational efficiency. Similarly, Peters (2019) explored fraud prevention in universities, identifying control weaknesses as enablers of misconduct. However, significant gaps remain. Firstly, many studies treat internal control as a monolithic construct, failing to empirically investigate the specific influence of its core sub-variables (segregation of duties, control activities, and information & communication mechanisms) on discrete ethical outcomes. Secondly, on the dependent variable side, research often measures fraud in financial terms, neglecting a broader assessment of ethical breach reduction in terms of adherence to code of conduct, prevention of diverse policy violations, and holistic improvement in ethical compliance (Kassem & Higson, 2016). Furthermore, there is a paucity of context-specific studies that intricately examine this relationship within the unique, complex operational environment of public tertiary institutions, where academic, financial, and administrative processes intersect (Nguyen & Duong, 2020). This study seeks to bridge these gaps by deconstructing both variables into their core components and analyzing their specific interrelationships within the stated sector.

This study is justified by the need to move beyond generic assertions and provide actionable insights into *how* specific internal control mechanisms can be leveraged to foster an ethical culture in universities. Its scope is delineated by a focused examination of three key internal control sub-variables (segregation of duties, control activities, information & communication) and their perceived influence on three dimensions of ethical breach reduction (adherence to code of conduct, prevention of policy violations, improvement in ethical compliance) within the context of public tertiary institutions. The significance of this research is multifold. For university administrators and councils, it will offer evidence-based guidance for strengthening control frameworks to mitigate ethical risks. For policymakers and regulatory bodies, it highlights the importance of mandating and assessing specific ICS components as part of institutional accreditation. For academia, it contributes to the literature on public sector governance by providing a nuanced conceptual model and setting an agenda for further empirical validation. In conclusion, this journal posits that a mechanistic understanding of internal controls is indispensable for systematically

combating the ethical challenges facing public higher education today.

Research Question

To address these research gaps, the study is guided by the following research questions:

i. How do Internal Control Systems affect Adherence to Code of Conduct among staff and administrators in Nigeria's public tertiary institutions?

ii. To what extent do Internal Control Systems influence the Prevention of Policy Violations in Nigeria's public tertiary institutions?

iii. What is the impact of Internal Control Systems on the Improvement in Ethical Compliance within Nigeria's public tertiary institutions?

Research Objectives

The primary aim of this study is to investigate the influence of internal control systems on ethical breaches. This aim is operationalized through the following specific objectives:

i. To examine the effect of Internal Control Systems on Adherence to Code of Conduct in Nigerian public tertiary institutions.

ii. To assess the influence of Internal Control Systems on the Prevention of Policy Violations in Nigerian public tertiary institutions.

iii. To analyze the impact of Internal Control Systems on the Improvement in Ethical Compliance within Nigerian public tertiary institutions.

Research Hypotheses

The following null hypotheses are formulated for testing in this study:

H_{01}: Internal Control Systems have no significant effect on Adherence to Code of Conduct in Nigerian public tertiary institutions.

H_{02}: Internal Control Systems have no significant influence on the Prevention of Policy Violations in Nigerian public tertiary institutions.

H_{03}: Internal Control Systems have no significant impact on the Improvement in Ethical Compliance within Nigerian public tertiary institutions.

Literature Review

Conceptual Review

Concept of Ethical Breache

An ethical breach in an organizational context refers to a violation of accepted codes of conduct, professional standards, or societal norms governing right and wrong behavior (Kaptein, 2017). In public tertiary institutions, which are custodians of public funds, intellectual integrity, and social trust, ethical breaches manifest in diverse forms, including financial fraud, academic plagiarism, sexual harassment, procurement corruption, and conflict of interest (Suleiman & Ogunleye, 2019). The prevalence of such misconduct undermines institutional credibility, erodes public confidence, and diverts resources from core educational mandates (World Bank, 2020).

Adherence to Code of Conduct: This refers to the degree to which members of an institution consciously conform to established ethical guidelines and principles. It moves beyond mere awareness to encompass observable behavioral compliance (Kaptein, 2017). In Nigerian public universities, weak adherence is often cited in audit reports, highlighting gaps between documented codes and actual practice (Okafor & Ani, 2018).

Prevention of Policy Violations: This sub-variable focuses on the proactive deterrence of specific infractions, such as fraud, embezzlement, grade manipulation, and breach of procurement guidelines. Effective prevention mechanisms reduce the *opportunity* for misconduct, a key element of the Fraud Triangle theory (Kassem & Higson, 2016). Studies on Nigerian public institutions consistently

link weak controls to recurring policy violations (Sule, Oke, & Ogunlowore, 2018).

Improvement in Ethical Compliance: This denotes a holistic, institutional shift towards a culture of integrity. It encompasses not only the reduction of negative events but also the promotion of positive ethical behavior, robust reporting mechanisms, and strong ethical leadership (Adebayo & Udegbe, 2020). It is the overarching outcome indicating that ethical norms are internalized within the organization's processes and climate.

Concept of Internal Control Systems (ICS)

An Internal Control System (ICS) is a process, effected by an entity's governing body, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the categories of operational effectiveness, reliable financial reporting, and compliance with laws and regulations (COSO, 2013). In the public sector, ICS is a critical governance tool for ensuring accountability, safeguarding assets, and promoting transparency (Oyedokun, 2015). For Nigerian public tertiary institutions, an effective ICS is argued to be a fundamental infrastructure for mitigating risks, including those leading to ethical breaches, by establishing clear procedures, checks, and balances (Muriithi, 2017). The effectiveness of the ICS is deconstructed into three core sub-variables, derived from the COSO framework:

Segregation of Duties (SoD): This is the foundational control activity that assigns different parts of a key process (e.g., authorization, custody, recording, reconciliation) to different individuals to reduce the risk of error or fraud (Adeniji, 2019). In university contexts, such as in procurement or student admissions, a lack of SoD creates opportunities for collusion and unilateral misconduct (Nguyen & Duong, 2020).

Control Activities: These are the specific policies, procedures, and techniques (e.g., approvals, verifications, reconciliations, physical security, performance reviews) that enforce management directives to mitigate risks (COSO, 2013). Examples in tertiary institutions include mandatory ethical

training, expenditure approval limits, and periodic inventory checks. Their consistent application is vital for enforcing compliance and preventing policy violations (Peters, 2019).

Information and Communication: This component ensures that relevant operational, financial, and compliance information is identified, captured, and communicated throughout the organization in a form and timeframe that enables personnel to fulfill their responsibilities (COSO, 2013). It includes clear dissemination of the code of conduct, functioning whistleblowing channels, and transparent reporting lines. Effective communication is pivotal for fostering adherence to ethical standards and creating a culture of openness (Adebayo & Udegbe, 2020).

Theoretical Review

This study is anchored on Agency Theory, first formalized by Jensen and Meckling (1976), provides a framework for analyzing relationships where one party (the principal) delegates work to another (the agent). The theory is predicated on the assumption that both parties are utility-maximizers and that the agent may not always act in the best interest of the principal. This conflict of interest, known as the agency problem, is exacerbated by information asymmetry, where the agent typically possesses more information about their actions and the task than the principal does (Eisenhardt, 1989). To mitigate the resulting agency costs, the costs incurred by the principal to monitor and control the agent, plus any residual loss, the theory prescribes two primary mechanisms: monitoring (investing in systems to observe agent behavior) and bonding (structuring contracts to align incentives). The effectiveness of these mechanisms in reducing opportunistic behavior is a central focus of the theory (Fama & Jensen, 1983).

The relevance of Agency Theory to this study on internal controls and ethical breaches in Nigerian public tertiary institutions is direct and multifaceted. Within this context, the government, governing councils, and the public serve as principals who delegate resource management and academic service delivery to university management and staff,

the agents. The prevalence of ethical breaches, such as financial misappropriation and policy violations, constitutes clear evidence of agency costs and opportunistic agent behavior. This study's independent variable, Internal Control Systems (ICS), is conceptually synonymous with the monitoring mechanisms prescribed by Agency Theory. Specifically, the ICS sub-variables are theoretical instruments for reducing asymmetry and aligning interests: Segregation of Duties limits an agent's discretionary power; Control Activities enforce compliance through verification; and Information & Communication systems reduce information gaps by ensuring transparency (Otalor & Eiya, 2013). Consequently, the dependent variable, Reduction of Ethical Breaches (manifested as improved adherence, prevention, and compliance), represents the successful mitigation of agency problems. Therefore, Agency Theory provides the explanatory logic that robust internal controls should curtail agent opportunism, thereby fostering an ethical institutional environment (Nguyen & Duong, 2020).

In conclusion, Agency Theory offers a robust and pertinent theoretical foundation for this investigation. It logically frames internal control systems not merely as administrative tools but as essential governance mechanisms to resolve inherent conflicts in principal-agent relationships within public institutions. By applying this lens, the study posits that strengthening the specific components of ICS (segregation of duties, control activities, and information systems) is a critical strategy for reducing information asymmetry, curbing opportunistic conduct, and ultimately diminishing ethical breaches in Nigerian public universities. The hypotheses of this study are, therefore, direct propositions derived from the core tenets of Agency Theory.

Empirical review

Adeyemi, Oyewo, and Olaoye (2021) in their study "Segregation of Duties and Fraud Mitigation in Nigerian Public Universities" conducted a survey of 150 administrative staff across three federal universities. Employing a descriptive survey design and regression analysis, the findings revealed a statistically significant inverse relationship between the implementation of Segregation of Duties and the incidence of financial fraud ($\beta = -0.712$, $p < 0.01$), accounting for 58% of the variance in fraud reduction ($R^2 = 0.58$). The study concluded that clear separation of authorization, custody, and recording functions is a critical deterrent. It recommended mandatory job rotations and periodic SoD audits. A key limitation was its narrow focus on financial fraud to the exclusion of other ethical breaches like academic misconduct.

Albrecht, Holland, and Rux (2019), in their work "Duty Separation as an Internal Control Keystone: Evidence from U.S. Higher Education," performed a comparative case study analysis of five institutions with reported fraud incidents. Through document analysis and auditor interviews, the results indicated that in 80% of investigated fraud cases, a fundamental breakdown in Segregation of Duties was the primary enabler. The authors concluded that SoD is the most cost-effective control for preventing collusion and recommended its integration into enterprise resource planning systems. The study's reliance on self-reported fraud incidents, which may not capture undetected misconduct, was a notable limitation.

Oluwagbemi, Abiodun, and Yusuf (2020), in "Control Activities and Operational Compliance in Tertiary Institutions of South-West Nigeria," employed a cross-sectional survey of 89 internal control officers. Using correlation analysis, the study found a strong positive correlation between the stringency of control activities (e.g., approvals, reconciliations) and budgetary compliance ($r = 0.79$, $p < 0.05$). It concluded that formalized and enforced control activities are essential for executing management directives and recommended the development of standardized control manuals. The study's findings were limited by its geographical focus on one region of Nigeria.

Muthoni and Kariuki (2022), in "Automated Controls and Fraud Prevention: A Case of Kenyan Public Universities," adopted an explanatory design, analyzing audit reports and conducting system simulations. Their findings showed institutions with automated controls in payroll and procurement

experienced a 40% lower rate of fictitious transaction fraud. The study concluded that automation enhances the reliability and consistency of control activities and recommended investment in integrated financial systems. The high cost of automation, posing a feasibility challenge for underfunded institutions, was a primary limitation.

Okafor and Eze (2019), in "Whistleblowing Channels and Ethical Reporting Culture in Nigerian Universities," surveyed 210 university staff. Using logistic regression, they found that effective and anonymous reporting channels increased the likelihood of reporting misconduct by 65% (Odds Ratio = 1.65). The study concluded that transparent communication channels are vital for surfacing ethical issues and recommended independent, third-party-managed hotlines. Social desirability bias in responses regarding reporting behavior was a key methodological limitation.

Suleiman (2021), in "Internal Communication Strategies and Staff Adherence to Policies in Ghanaian Technical Universities," used a mixed-methods approach. The research revealed that only 35% of staff felt well-informed about policy updates, and this group demonstrated 50% higher adherence scores. It concluded that proactive, multi-channel communication is directly linked to policy implementation success and recommended establishing dedicated internal communications offices. The study was limited by its focus on awareness rather than the quality of the information communicated.

Kaptein (2018), in the multi-national study "The Ethics Program and Managerial Conduct," analyzed survey data from over 5,000 employees. The methodology involved structural equation modelling, which demonstrated that the perceived integrity of management and the clarity of the code of conduct had a direct, positive effect on employee adherence (Standardized Path Coefficient = 0.47). The study concluded that a code's effectiveness depends heavily on leadership reinforcement. It recommended integrating ethical codes into performance management systems. A limitation was its cross-sectional design, which prevented definitive causal conclusions.

Peters (2019), in "Determinants of Fraud Prevention in Nigerian Public Universities," conducted a case study of two universities, utilizing document review and interviews with audit committee members. The findings identified that a weak culture of compliance, rather than the absence of rules, was the central factor undermining adherence. The study concluded that promoting ethical culture is as important as designing rules and recommended mandatory ethics training for all staff. The small sample size of two institutions limited the generalizability of the findings.

Nguyen and Duong (2020), in "Internal Control Systems and Operational Efficiency: Evidence from Vietnamese Universities," employed a quantitative survey of 127 university managers. Their regression analysis found a significant positive relationship between a composite internal control system score and a reduction in recorded policy violations ($\beta = 0.623$, $p < 0.01$). The study concluded that a holistic ICS is effective in preventing violations and recommended regular control self-assessments. The use of a subjective, self-reported measure for the dependent variable was a primary limitation.

Finally, Kassem and Higson (2016), in "External Auditors and Corporate Corruption," conducted a meta-analysis of prior fraud studies, though not specific to education. Their analytical review established that environments with strong, multi-layered control activities consistently reported fewer instances of major policy violations. They concluded that prevention requires a system of interconnected controls rather than a single policy. The recommendation was for a risk-based approach to control design. The main limitation was the aggregation of data from diverse industries, which may not be directly transferable to the university context.

Summary of Gaps in Literature

The existing body of research provides a foundational understanding of governance and ethics, yet critical gaps warrant further investigation. A primary limitation is the tendency to evaluate internal control systems (ICS) in aggregate, overlooking the need to isolate and measure the

specific effects of its core components (segregation of duties, control activities, and information systems) on distinct organizational outcomes (Adeyemi et al., 2021; Oluwagbemi et al., 2020). Concurrently, studies on ethical compliance often adopt a narrow lens, predominantly focusing on financial fraud while paying less attention to broader, equally critical breaches of academic and administrative policies (Kaptein, 2018; Peters, 2019). This conceptual narrowness is compounded by a geographical and contextual gap, as there is insufficient empirical research deeply rooted in the specific operational, cultural, and governance challenges of Nigerian public tertiary institutions (Suleiman, 2021). Furthermore, methodological constraints in prior work, such as reliance on self-reported data, limited sample scopes, and cross-sectional designs that inhibit causal analysis, highlight the need for more robust investigative approaches (Muthoni & Kariuki, 2022; Okafor & Eze, 2019). These collective gaps underscore the necessity for an integrated study that systematically examines how discrete ICS mechanisms influence multi-faceted ethical compliance within this vital sector.

Methodology

This study adopted a quantitative, ex-post facto research design to investigate the influence of internal control systems on the reduction of ethical breaches in public tertiary institutions in North Central Nigeria. The population comprised key administrative and financial staff from these institutions. Using the Krejcie and Morgan (1970) table, a sample size of 184 was indicated for an estimated population, and after accounting for accessibility, data were collected from 179 respondents selected through purposive sampling. Primary data were gathered using a structured five-point Likert-scale questionnaire focusing on the sub-variables of internal control systems (segregation of duties, control activities, information & communication) and ethical breach reduction (adherence to code of conduct, prevention of policy violations, improvement in ethical compliance). The instrument was pre-tested on 20 staff from similar institutions, and reliability was confirmed with a

Cronbach's Alpha above 0.70. Data collection was conducted with informed consent, ensuring confidentiality and anonymity. The data were analysed using descriptive statistics (frequencies, means, standard deviations) to summarise perceptions, Pearson's correlation to examine bivariate relationships, and multiple linear regression to determine the predictive effect of the internal control sub-variables on ethical outcomes. All analyses were conducted in STATA 17 and Microsoft Excel at a 0.05 significance level.

The study employed a multiple linear regression model to examine the influence of internal control systems on the reduction of ethical breaches. The composite model was specified as follows:
$$\text{REDUCTION\_OF\_ETHICAL\_BREACHES} = \alpha + \beta_1 \text{SoD} + \beta_2 \text{CA} + \beta_3 \text{I\&C} + \epsilon$$

Where:

• REDUCTION_OF_ETHICAL_BREACHES = Composite dependent variable (and separately its sub-variables: Adherence, Prevention, Improvement)

• SoD = Segregation of Duties (independent sub-variable)

• CA = Control Activities (independent sub-variable)

• I&C = Information & Communication (independent sub-variable)

• α = Intercept

• β_1, β_2, β_3 = Regression coefficients representing the effect of each ICS component

• ϵ = Error term

This model allowed the study to estimate the distinct effects of the three internal control mechanisms on ethical outcomes, providing a clear framework for testing the research hypotheses.

Results and Discussion of Findings

Descriptive Statistics of Respondents' Demographics

This section presents the background characteristics of the respondents who participated in the study. Analysing these demographics is crucial for

understanding the context of the data and the professional standing of the individuals providing insights into internal control systems and ethical compliance. The distribution of respondents by gender, age, highest educational qualification, years of service, and department/unit is summarised in Table 1.

Table 1: Demographic Profile of Respondents (N=179)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	122	68.2
	Female	57	31.8
Age	25-35 years	47	26.3
	36-45 years	74	41.3
	46-55 years	51	28.5
	Above 55 years	7	3.9
Highest Qualification	Bachelor's Degree/HND	50	27.9
	Master's Degree	103	57.5
	Doctorate Degree (PhD)	26	14.5
Years of Service	Less than 5 years	38	21.2
	5 - 10 years	41	22.9
	More than 10 years	100	55.9
Department/Unit	Internal Audit	51	28.5
	Finance & Accounts	45	25.1
	Procurement	33	18.4
	Registry/Administration	29	16.2

Academic Department (HOD level)	21	11.7

The demographic profile indicates that the data was sourced from a mature, experienced, and highly educated cohort, which enhances the credibility of the responses. The predominance of male respondents (68.2%) reflects a common gender distribution in senior administrative and financial roles within the studied region. The majority of respondents (73.7%) were aged 36 years and above, suggesting that the perceptions captured are informed by considerable professional maturity. Furthermore, an overwhelming 72.0% of respondents held a postgraduate qualification (Master's or PhD), indicating a high level of cognitive ability to comprehend and assess the technical issues of internal controls and ethics. Most critically, 55.9% of the respondents had served in their institution for over a decade, providing them with deep institutional memory and firsthand experience of operational practices and challenges. The distribution across key departments most notably Internal Audit (28.5%) and Finance &

Accounts (25.1%) confirms that the data was collected from personnel who are directly involved in the implementation, monitoring, and oversight of the internal control systems under investigation. This profile collectively affirms the suitability of the respondents to provide reliable data for this study.

Descriptive Statistics of Study Variables

This section presents the descriptive statistics for the core constructs of the study, namely the three sub-variables of the Independent Variable (Internal Control Systems) and the three sub-variables of the Dependent Variable (Reduction of Ethical Breaches). The statistics, summarised in Table 2, provide an overview of the central tendency (Mean) and the degree of consensus or dispersion (Standard Deviation) among the respondents' perceptions, measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Table 2: Descriptive Statistics of Study Variables (N=179)

Variable	Number of Items	Mean Score	Standard Deviation
Segregation of Duties (SoD)	5	3.42	1.08
Control Activities (CA)	6	3.88	0.92
Information & Communication (I&C)	5	3.15	1.12
Adherence to Code of Conduct (ACC)	5	3.28	1.05

Prevention of Policy Violations (PPV)	5	3.65	0.98
Improvement in Ethical Compliance (IEC)	4	3.51	1.01

The mean scores indicate moderate to moderately high perceptions of the various constructs among the respondents. For the internal control system components, Control Activities (Mean = 3.88, SD = 0.92) was perceived as the most established, suggesting that policies like approvals and verifications are relatively recognised. In contrast, Information & Communication (Mean = 3.15, SD = 1.12) received the lowest mean score and highest dispersion, pointing to significant inconsistencies and potential weaknesses in the clarity, flow, and accessibility of ethical policies and reporting channels within the institutions. Segregation of Duties (Mean = 3.42) also shows room for improvement. Regarding ethical outcomes, Prevention of Policy Violations (Mean = 3.65, SD = 0.98) scored highest, implying a perceived effectiveness in deterring specific misconduct. However, the lower mean for Adherence to Code of Conduct (Mean = 3.28) suggests a gap between the existence of rules and their internalisation by staff. The standard deviations, all near or above 1.0, reflect considerable variation in responses, highlighting those experiences and perceptions of both control effectiveness and ethical compliance are not uniform across the different institutions and departments sampled.

Correlation Matrix

This section presents the results of the Pearson's Product-Moment Correlation analysis, which was conducted to examine the strength and direction of the bivariate relationships between the independent variable sub-constructs (Internal Control Systems) and the dependent variable sub-constructs (Reduction of Ethical Breaches). The correlation matrix is presented in Table 3.

Table 3: Pearson's Correlation Matrix of Study Variables (N=179)

Variable	SoD	CA	I&C	ACC	PPV	IEC
SoD	1.000					
CA	.562**	1.000				
I&C	.487**	.601**	1.000			
ACC	.423**	.517**	.682**	1.000		

PPV	.581**	.645**	.534**	.498**	1.000	
IEC	.509**	.590**	.608**	.553**	.671**	1.000

The correlation matrix reveals several key findings. First, all three internal control system components show statistically significant positive correlations with all three measures of ethical breach reduction at the 0.01 significance level. This provides preliminary support for the study's hypotheses, indicating that as perceptions of ICS effectiveness increase, so do perceptions of improved ethical outcomes. The strongest observed relationship is between Control Activities (CA) and Prevention of Policy Violations (PPV) (r = .645, p<.01), suggesting that structured policies and procedures are closely associated with the direct deterrence of misconduct. Notably, Information & Communication (I&C) demonstrates the strongest correlation with Adherence to Code of Conduct (ACC) (r = .682, p<.01), highlighting the critical role of clear communication and transparency in fostering voluntary compliance with ethical standards.

Furthermore, the inter-correlations among the independent variables (SoD, CA, I&C) are all significant and moderately strong (ranging from .487 to .601). While this indicates that the constructs are related but distinct, it also necessitated a check for multicollinearity prior to regression analysis. Similarly, the dependent variables are positively interrelated, confirming that they represent different facets of a cohesive construct—ethical breach reduction. These results establish a foundational relationship between the variables, justifying the subsequent use of multiple regression analysis to examine their predictive power while controlling for their shared variance.

Regression Analysis and Test of Hypotheses

This section presents the results of the multiple linear regression analyses conducted to test the study's three null hypotheses. Each hypothesis is tested individually using a separate regression model, with the results, interpretation, and hypothesis decision detailed in the following subsections.

Test of Hypothesis One (H_{01})

H_{01}: Internal Control Systems have no significant effect on Adherence to Code of Conduct in Nigerian public tertiary institutions.

Table 4.1: Regression Model for Adherence to Code of Conduct (ACC)

Predictor Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (β)	t-value	p-value
(Constant)	0.284	0.233		1.218	0.225
Segregation of Duties (SoD)	0.146	0.080	0.150	1.825	0.070

Control Activities (CA)	0.267	0.086	0.262	3.105	0.002**
Information & Communication (I&C)	0.493	0.073	0.526	6.753	0.000***
Model Summary	R = 0.718	R² = 0.515	Adjusted R² = 0.507		
	F-statistic = 61.847	p-value = 0.000			

The regression model for Adherence to Code of Conduct (ACC) is statistically significant (F(3, 175) = 61.847, p < 0.001), explaining 51.5% of the variance (R^2 = 0.515). The analysis reveals that not all components of Internal Control Systems have a significant effect. Specifically:

- **Information & Communication (β = 0.526, p < 0.001)** has a strong, statistically significant positive effect on ACC.

- **Control Activities (β = 0.262, p < 0.01)** also has a significant positive effect.

- **Segregation of Duties (β = 0.150, p > 0.05)** does not show a statistically significant

unique effect on ACC when the other two variables are controlled for.

Since the overall model and two key predictors show significant effects, the null hypothesis (H₀₁) is rejected. It is concluded that Internal Control Systems, primarily through effective Information & Communication and Control Activities, have a significant positive effect on Adherence to Code of Conduct.

Test of Hypothesis Two (H₀₂)

H₀₂: Internal Control Systems have no significant influence on the Prevention of Policy Violations in Nigerian public tertiary institutions.

Table 4.2: Regression Model for Prevention of Policy Violations (PPV)

Predictor Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (β)	t-value	p-value
(Constant)	0.611	0.246		2.484	0.014*
Segregation of Duties (SoD)	0.264	0.064	0.291	4.125	0.000***

Control Activities (CA)	0.347	0.065	0.381	5.338	0.000***
Information & Communication (I&C)	0.146	0.062	0.167	2.355	0.020*
Model Summary	R = 0.752	R² = 0.565	Adjusted R² = 0.558		
	F-statistic = 75.632	p-value = 0.000			

The regression model for Prevention of Policy Violations (PPV) is highly significant (F(3, 175) = 75.632, p < 0.001), accounting for 56.5% of the variance (R² = 0.565). All three ICS components are significant predictors:

- **Control Activities (β = 0.381, p < 0.001)** has the strongest unique influence.

- **Segregation of Duties (β = 0.291, p < 0.001)** is also a strong and significant predictor.

- **Information & Communication (β = 0.167, p < 0.05)** has a smaller but still significant positive influence.

Given that all predictor variables are statistically significant, the null hypothesis (**H₀₂**) is **rejected**. It is concluded that Internal Control Systems have a significant positive influence on the Prevention of Policy Violations, with Control Activities and Segregation of Duties being the most influential components.

Test of Hypothesis Three (H₀₃)

H₀₃: Internal Control Systems have no significant impact on the Improvement in Ethical Compliance within Nigerian public tertiary institutions.

Table 4.3: Regression Model for Improvement in Ethical Compliance (IEC)

Predictor Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (β)	t-value	p-value
(Constant)	0.448	0.271		1.653	0.100
Segregation of Duties (SoD)	0.182	0.074	0.195	2.459	0.015*

Control Activities (CA)	0.297	0.083	0.290	3.578	0.000***
Information & Communication (I&C)	0.324	0.075	0.359	4.320	0.000***
Model Summary	R = 0.695	R² = 0.483	Adjusted R² = 0.474		
	F-statistic = 54.391	p-value = 0.000			

The regression model for Improvement in Ethical Compliance (IEC) is statistically significant (F(3, 175) = 54.391, p < 0.001), explaining 48.3% of the variance (R² = 0.483). The analysis indicates:

- **Information & Communication (β = 0.359, p < 0.001)** has the strongest significant unique impact on IEC.
- **Control Activities (β = 0.290, p < 0.001)** also shows a very strong significant impact.
- **Segregation of Duties (β = 0.195, p < 0.05)** has a modest but statistically significant positive impact.

As all three components of ICS demonstrate a statistically significant impact, the null hypothesis (H₀₃) is **rejected**. It is concluded that Internal Control Systems have a significant positive impact on the Improvement in Ethical Compliance, driven largely by Information & Communication and Control Activities.

Discussion of Findings

This study investigated the influence of internal control system (ICS) mechanisms on the reduction of ethical breaches within Nigerian public tertiary institutions. The findings provide substantial empirical evidence that supports the theoretical proposition of Agency Theory, demonstrating that structured monitoring and control mechanisms are critical for aligning agent behavior with principal objectives and mitigating ethical risks. The discussion interprets these key results in relation to the research objectives, hypotheses, and existing literature.

The demographic analysis established that the data was sourced from a credible and relevant cohort. The predominance of experienced, highly educated respondents from core oversight and finance departments (Internal Audit, Finance & Accounts) ensures that the perceptions captured are informed by professional expertise and direct involvement with the ICS, lending significant validity to the subsequent findings (Adebayo & Udegbe, 2020).

The descriptive statistics for the study variables revealed a critical diagnostic insight: while Control Activities were perceived as relatively strong, Information & Communication (I&C) was the weakest ICS component with the highest variability. This aligns with the observations of Suleiman (2021) and indicates a systemic flaw where policies may exist but are poorly communicated, understood, or trusted. This weakness directly correlates with the lowest score for Adherence to Code of Conduct, suggesting that staff cannot follow

rules that are not effectively disseminated or reinforced through transparent channels.

The correlation analysis provided initial support for all hypothesized relationships, with particularly strong linkages between Control Activities and the Prevention of Policy Violations (r = .645) and between Information & Communication and Adherence to Code of Conduct (r = .682). These strong bivariate relationships logically foreshadowed the outcomes of the regression analysis.

The test of Hypothesis One (H_{01}) confirmed that ICS significantly affects Adherence to Code of Conduct, but through specific mechanisms. The finding that Information & Communication is the strongest predictor (β = 0.526, p<0.001) is pivotal. It empirically validates the arguments of Kaptein (2018) and Okafor and Eze (2019) that an ethical code is inert without effective communication and secure reporting channels. It underscores that fostering voluntary adherence is less about policing and more about cultivating an environment of clarity and psychological safety. The non-significant unique effect of Segregation of Duties on adherence is logical, as SoD is a structural, preventative control, whereas adherence is a behavioral outcome more directly influenced by awareness and culture shaped by communication.

The test of Hypothesis Two (H_{02}) revealed that all ICS components significantly influence the Prevention of Policy Violations, with Control Activities (β = 0.381, p<0.001) and Segregation of Duties (β = 0.291, p<0.001) being the most potent. This finding robustly supports the core tenets of the COSO framework and fraud prevention literature (Kassem & Higson, 2016; Peters, 2019). It demonstrates that the concrete, procedural barriers—such as requiring approvals, verifying transactions, and separating conflicting duties—are highly effective in directly blocking opportunities for fraud, embezzlement, and other policy violations. This is the most direct operationalization of Agency Theory's monitoring solutions.

Finally, the test of Hypothesis Three (H_{03}) showed that ICS significantly impacts overall Improvement in Ethical Compliance. Here, Information & Communication (β = 0.359, p<0.001) again emerged

as a leading driver, alongside Control Activities. This result synthesizes the previous findings, indicating that a holistic improvement in the ethical climate is not achieved by structural controls alone. It requires the synergistic effect of clear rules (Control Activities), transparent and ethical leadership communication (I&C), and fair process design (SoD). This aligns with the holistic view of ethical compliance proposed by Adebayo and Udegbe (2020), moving beyond mere prevention to the cultivation of an integrity-based culture.

In summary, the findings present a nuanced model: Control Activities and Segregation of Duties are the primary engines for *preventing* misconduct by removing opportunity, while Information & Communication is the essential catalyst for fostering *willing adherence* and driving broad cultural *improvement*. The weakest link identified in the IC component points directly to a strategic area for institutional reform in Nigerian public universities. Strengthening whistleblowing mechanisms, ensuring transparent flow of ethical directives, and leadership's active communication of integrity are not ancillary activities but foundational to transforming the ethical landscape.

Summary, Conclusion and Recommendations

This study empirically examined the influence of internal control system components—Segregation of Duties, Control Activities, and Information & Communication—on reducing ethical breaches in Nigerian public tertiary institutions. Based on quantitative data from 179 key staff, the findings reveal that while Control Activities and Segregation of Duties are crucial for preventing specific policy violations, the often-overlooked element of Information & Communication is the most critical driver for fostering staff adherence to ethical codes and achieving broad compliance improvement. Therefore, the study concludes that the reduction of ethical breaches is not achieved by structural controls alone but is fundamentally dependent on a transparent, well-communicated, and integrated internal control environment that actively shapes the ethical culture of an institution.

Based on the findings, the study proposes the following recommendations:

i. University Management must urgently prioritize and resource the strengthening of Information and Communication mechanisms. This includes launching independent and protected whistleblowing platforms and mandating regular ethics communication campaigns led by top leadership to bridge the gap between policy and practice.

ii. Governing Councils and Audit Committees should mandate quarterly control self-assessments that specifically evaluate the real-world application of Segregation of Duties and the effectiveness of Control Activities in high-risk departments, with findings reported transparently.

iii. The National Universities Commission (NUC) can leverage these insights by incorporating specific ICS metrics, particularly related to transparency and fraud prevention, into its accreditation framework to incentivize systemic improvements across the sector.

iv. Heads of Internal Audit Units are encouraged to adopt a strategic advisory role, moving beyond compliance checks to proactively design and assess the integrated control and communication systems that underpin institutional integrity.

v. Researchers and policy analysts should delve deeper into the socio-cultural dynamics that interact with formal controls, conducting longitudinal studies to build a more nuanced understanding of sustainable ethical reform in Nigeria's public education sector.

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