



Empirical study of internal control systems and ethical conduct in banking institutions: Evidence from listed deposit money banks in Nigeria

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Abstract

This study investigates the relationship between internal control system effectiveness, whistleblowing systems, and ethical conduct in listed deposit money banks in Nigeria, motivated by ongoing concerns about unethical practices and fraud in the sector. Adopting a quantitative, cross-sectional design, the research utilizes secondary data from annual reports and corporate governance disclosures of ten listed banks between 2015 and 2024, with three banks excluded due to insufficient data. Internal control effectiveness and whistleblowing systems were measured using COSO-based indicators and whistleblowing disclosures, while ethical conduct was proxied by reported ethical breaches, compliance with codes of ethics, and related disclosures; firm age was included as a control variable. Descriptive statistics, correlation analysis, and panel data regression were employed, with the Hausman test supporting the use of a fixed effects model. The results reveal that both internal control system effectiveness (Coefficient = 0.410, $p < 0.01$) and whistleblowing systems (Coefficient = 0.295, $p < 0.01$) are significant positive predictors of ethical conduct, explaining a substantial proportion of its variance (R -squared = 0.672), while firm age has a marginal effect (coefficient = 0.002, $p = 0.075$). These findings align with Agency Theory and the Fraud Triangle, underscoring the critical role of robust internal controls and transparent reporting mechanisms in promoting ethical behavior. The study provides context-specific evidence for the Nigerian banking industry and recommends that bank management and regulators prioritize continuous improvement of internal controls, accessible whistleblowing channels, and regular ethical training to foster a culture of integrity and accountability.

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1. Introduction

The banking sector plays a critical role in the economic development and financial stability of emerging economies such as Nigeria. As the primary channel for financial intermediation, deposit money banks are entrusted with safeguarding public funds, facilitating credit allocation, and supporting economic growth. However, the sector has been persistently challenged by issues of unethical conduct, fraud, and weak internal controls, which have undermined public confidence and threatened the integrity of financial institutions (Ubesie, Ibezim, & Cyriacus, 2023). These challenges highlight the urgent need for robust internal control systems and effective ethical frameworks within Nigerian banks.

Internal control systems are widely recognized as essential mechanisms for ensuring operational efficiency, reliable financial reporting, and compliance with regulatory requirements (Baugh, Ege, & Yust, 2021; Hamed, 2023). The effectiveness of these systems is particularly crucial in the banking sector, where the complexity and volume of transactions increase the risk of errors, fraud, and unethical practices (Faisol, Haryadi, Musyarofah, & Iswahyudi, 2023). Empirical evidence suggests that strong internal controls are associated with reduced fraud tendencies and improved organizational performance (Otoo, Kaur, & Rather, 2023; Ubesie et al., 2023). Nevertheless, studies have also indicated that the mere existence of internal controls does not automatically guarantee ethical conduct, as organizational culture, individual morality, and enforcement mechanisms play significant roles in shaping behavior (Abidin, Handayani, & Biduri, 2023; Wafa, Ghazali, & Hidayati, 2024).

Ethical conduct in banking institutions is fundamental to maintaining trust and upholding the reputation of the sector. Unethical behavior, including fraudulent activities, conflicts of interest, and non-compliance with regulations, can have severe consequences for banks and their stakeholders (Ametepe, Banwo, & Arilesere, 2023; Khoirunnisa & Nugroho, 2024). The literature underscores the importance of fostering an ethical climate through both formal controls and informal cultural mechanisms (Ahmad & Muslim, 2024; Manginte, 2024). In this context, whistleblowing systems have emerged as a vital component of organizational governance, providing employees with safe channels to report unethical or illegal activities (Dwiyanti, Wicaksono, & Ulum, 2022). The presence of effective whistleblowing mechanisms has been linked to enhanced fraud prevention and the promotion of ethical standards within organizations (Ricky, Insani, Mahdi, Riani, & Bakri, 2023).

Despite the growing recognition of the importance of internal controls and whistleblowing systems, there remains a paucity of empirical research examining their combined impact on ethical conduct within the Nigerian banking sector, particularly among listed deposit money banks (Abdulsalam, Bamidele, & Fajana, 2024; Ubesie et al., 2023). Furthermore, while previous studies have explored the relationship between internal controls and financial performance (Hamed, 2023; Philips et al., 2024) as well as the role of organizational culture and individual morality (Abidin et al., 2023; Ametepe et al., 2023) the specific mechanisms through which internal control effectiveness and whistleblowing systems influence ethical conduct remain underexplored in the Nigerian context.

Given these gaps, this study aims to provide empirical evidence on the relationship between internal control system effectiveness, whistleblowing systems, and ethical conduct in listed deposit money banks in Nigeria. Specifically, the study seeks to.

- i. Examine the relationship between internal control system effectiveness and ethical conduct.
- ii. Determine the impact of whistleblowing systems on ethical conduct in these institutions.

By focusing on listed deposit money banks, which are subject to rigorous regulatory oversight and public scrutiny, this research contributes to the ongoing discourse on corporate governance, risk management, and ethical standards in the Nigerian banking sector.

2. Literature Review and Theoretical Framework

2.1. Conceptual Review

2.1.1. Internal Control Systems in Banking

Internal control systems are defined as processes implemented by an organization's board of directors, management, and other personnel to provide reasonable assurance regarding the achievement of objectives related to operations, reporting, and compliance (Hamed, 2023). The COSO framework is widely adopted in the banking sector, comprising five interrelated components: control environment, risk assessment, control activities, information and communication, and monitoring (Baugh et al., 2021; Prabowo, Minarni, & Kurniawan, 2024).

Empirical studies have demonstrated that effective internal controls are associated with reduced fraud tendencies, improved financial performance, and enhanced organizational effectiveness (Otoo et al., 2023; Ubesie et al., 2023). However, the mere existence of internal controls does not guarantee their effectiveness; factors such as organizational culture, management commitment, and employee competence are critical for successful implementation (Abidin et al., 2023; Khoirunnisa & Nugroho, 2024).

2.1.2. Whistleblowing Systems

Whistleblowing systems are formal mechanisms that enable employees and stakeholders to report unethical or illegal activities within an organization, often anonymously and without fear of retaliation (Dwiyanti et al., 2022). In the banking sector, whistleblowing is increasingly recognized as a vital tool for fraud prevention and the promotion of ethical conduct (Ricky et al., 2023). The presence of accessible and effective whistleblowing channels has been linked to a reduction in fraudulent activities and an improvement in the ethical climate of organizations (Faisol et al., 2023).

Despite their importance, the effectiveness of whistleblowing systems depends on organizational support, protection for whistleblowers, and a culture that encourages transparency and accountability (Dwiyanti et al., 2022). In many developing economies, including Nigeria, challenges such as fear of retaliation, lack of awareness, and inadequate legal protections can undermine the effectiveness of whistleblowing mechanisms (Ubesie et al., 2023).

2.1.3. Ethical Conduct in Banking

Ethical conduct in banking refers to adherence to moral principles, professional standards, and regulatory requirements in all aspects of banking operations (Ametepe et al., 2023). It encompasses behaviors such as honesty, integrity, fairness, and respect for stakeholders. Measurement approaches for ethical conduct often include self-reported surveys, analysis of reported fraud cases, and assessments of compliance with codes of ethics and regulatory guidelines (Abidin et al., 2023; Wafa et al., 2024).

The literature highlights that ethical conduct is influenced by both formal controls (e.g., internal control systems, whistleblowing mechanisms) and informal factors (e.g., organizational culture, individual morality) (Hamzah, Febriani, & Akinfolarin, 2024; Manginte, 2024). Banks with strong ethical cultures and effective control systems are better positioned to prevent misconduct and maintain stakeholder trust (Hossain, Sobhani, Omar, Mohamad, & Said, 2019).

2.2. Theoretical Framework

The relationship between internal control systems, whistleblowing mechanisms, and ethical conduct in banking institutions can be understood through several established theoretical lenses.

Agency Theory, first articulated by Meckling and Jensen (1976) posits that conflicts of interest naturally arise between managers (agents) and shareholders (principals) due to divergent goals and the separation of ownership and control. This theory underscores the necessity for robust control mechanisms to align interests and mitigate opportunistic behavior by agents. In the banking sector, where information asymmetry and risk-taking are prevalent, effective internal controls serve as a means to reduce agency costs and promote ethical decision-making (Baugh et al., 2021; Hamzah et al., 2024). Internal control systems, therefore, are not only tools for operational efficiency but also essential governance structures that help ensure managers act in the best interests of shareholders and other stakeholders.

Stakeholder Theory, developed by Freeman (1984) broadens the focus of corporate governance beyond shareholders to encompass a wider array of stakeholders, including customers, employees, regulators, and the broader public. This theory emphasizes that organizations have ethical obligations to all parties affected by their operations, and that ethical conduct and transparency are critical for maintaining stakeholder trust and organizational legitimacy (Manginte, 2024). In the context of banking, this perspective highlights the importance of ethical behavior and robust internal controls in safeguarding the interests of diverse stakeholder groups and sustaining the bank's social license to operate.

The Fraud Triangle framework, introduced by Akers and Matsueda (1989) provides a behavioral explanation for why individuals commit fraud. According to this model, three elements must be present for fraud to occur: opportunity, pressure (or incentive), and rationalization. Internal control systems are specifically designed to reduce opportunities for fraud by implementing checks, balances, and oversight mechanisms. Meanwhile, whistleblowing mechanisms can disrupt the rationalization process by increasing the perceived likelihood of detection and accountability, thereby serving as a deterrent to unethical behavior (Faisol et al., 2023).

Collectively, these theories provide a comprehensive foundation for understanding how internal control systems and whistleblowing mechanisms can influence ethical conduct in banking institutions. They highlight the necessity of both formal controls and ethical culture in mitigating agency problems, addressing stakeholder expectations, and preventing fraudulent activities.

2.3. Empirical Studies

Recent empirical studies have provided substantial evidence on the interplay between internal controls, whistleblowing mechanisms, and ethical conduct in the banking sector. For instance, Ubesie et al. (2023) conducted a study on Nigerian deposit money banks and found that robust internal control measures significantly reduce the incidence of fraud and unethical practices. Their findings underscore the importance of comprehensive internal control frameworks in safeguarding assets, ensuring compliance, and promoting ethical standards within the Nigerian banking context.

Similarly, [Otoo et al. \(2023\)](#) examined the impact of internal control systems on organizational effectiveness in African banks, including those in Nigeria. Their results indicated that control activities, risk assessment, and the control environment are significant predictors of organizational effectiveness, highlighting the multifaceted role of internal controls not only in fraud prevention but also in enhancing overall institutional performance.

The role of whistleblowing systems has also been empirically validated. [Dwiyanti et al. \(2022\)](#) demonstrated that both internal control systems and whistleblowing mechanisms are critical for fraud prevention, with individual morality serving as a moderating variable. Their study suggests that while formal mechanisms are essential, the ethical disposition of employees further strengthens the effectiveness of these systems in curbing unethical behavior.

Meta-analytic evidence by [Faisol et al. \(2023\)](#) further confirms the effectiveness of internal control systems in mitigating fraud tendencies across various organizational contexts. Their synthesis of multiple studies revealed a consistent negative relationship between the strength of internal controls and the prevalence of fraudulent activities, reinforcing the argument for continuous improvement and rigorous enforcement of control mechanisms.

However, the literature also cautions that the mere existence of internal controls and whistleblowing systems does not automatically translate into ethical conduct. [Abidin et al. \(2023\)](#) found that the effectiveness of these mechanisms is contingent upon organizational support, employee awareness, and the broader ethical climate. Their research highlights the moderating role of organizational ethical culture, suggesting that internal controls are most effective when embedded within a supportive and ethically-oriented environment. Similarly, [Wafa et al. \(2024\)](#) emphasized that management commitment, compliance, and work ethic are crucial determinants of auditors' ethical behavior, indicating that internal controls must be complemented by strong leadership and a culture of integrity.

Additional studies have explored related dimensions. For example, [Hamed \(2023\)](#) linked internal control system compliance to the sustainability of financial performance in banks, while [Hamzah et al. \(2024\)](#) discussed the interrelationship between internal control structures and good corporate governance, both of which are foundational for ethical conduct. Furthermore, [Manginte \(2024\)](#) and [Prabowo et al. \(2024\)](#) highlighted the importance of transparency and effective cash management, respectively, as outcomes of robust internal control systems.

Collectively, these empirical findings suggest that while internal control systems and whistleblowing mechanisms are indispensable for promoting ethical conduct and preventing fraud in banking institutions, their effectiveness is significantly influenced by organizational culture, employee morality, and management support. This underscores the need for a holistic approach that integrates formal controls with ethical leadership and a supportive organizational climate.

2.4. Research Gap and Hypotheses Development

While the extant literature provides substantial evidence on the importance of internal control systems and whistleblowing mechanisms in promoting ethical conduct and preventing fraud in banking institutions, several gaps remain, particularly within the context of Nigerian deposit money banks. Most empirical studies have focused on the general effectiveness of internal controls in reducing fraud and enhancing organizational performance ([Otoo et al., 2023](#); [Ubesie et al., 2023](#)) or have examined whistleblowing systems as part of broader governance frameworks ([Dwiyanti et al., 2022](#); [Ricky et al., 2023](#)). However, there is a paucity of research that simultaneously investigates the distinct and combined effects of internal control system effectiveness and whistleblowing mechanisms on ethical conduct, especially in the unique regulatory and cultural environment of Nigeria.

Furthermore, while meta-analytic and cross-country studies ([Faisol et al., 2023](#); [Hamed, 2023](#)) have confirmed the general efficacy of internal controls in mitigating fraud, they often overlook the moderating influence of organizational culture, employee awareness, and individual morality, which have been shown to be critical in determining the actual impact of these mechanisms ([Abidin et al., 2023](#); [Wafa et al., 2024](#)). The literature also suggests that the presence of internal controls and whistleblowing systems alone may not be sufficient; their effectiveness is contingent upon the ethical climate and the degree of management support within the organization ([Hamzah et al., 2024](#); [Manginte, 2024](#)).

In the Nigerian context, studies such as [Ubesie et al. \(2023\)](#) and [Abdulsalam et al. \(2024\)](#) have highlighted the persistent challenges of fraud and unethical conduct in deposit money banks, despite the existence of formal control mechanisms. This indicates a need for more nuanced research that not only assesses the direct effects of internal control and whistleblowing systems but also considers the contextual factors that may enhance or impede their effectiveness.

Based on these identified gaps, the following hypotheses were developed.

- i. There is no significant relationship between internal control system effectiveness and ethical conduct in listed deposit money banks in Nigeria.
- ii. Whistleblowing systems have no significant impact on ethical conduct in listed deposit money banks in Nigeria.

3. Methodology

3.1. Research Design

This study adopts a quantitative, cross-sectional research design to empirically investigate the relationship between internal control system effectiveness, whistleblowing systems, and ethical conduct in Nigerian banking institutions. The research relies exclusively on secondary data, enabling a robust and objective analysis of practices and disclosures within the sector. The cross-sectional approach allows for the assessment of these relationships at a specific point in time, while the inclusion of data spanning from 2015 to 2024 ensures a comprehensive evaluation of the variables under consideration.

3.2. Population and Sampling

The target population for this study comprises all thirteen (13) deposit money banks listed on the [Nigerian Exchange Group \(2024\)](#). In line with best practices for organizational research and to enhance the generalizability of findings, a census sampling approach was adopted, aiming to include all listed banks in the analysis. However, three banks including Access Holdings Plc, Guaranty Trust Holding Company Plc and Sterling Financial Holdings Company Plc were excluded from the sample. These three institutions were incorporated in after the commencement of the study period (2015–2024), and thus do not possess sufficient historical data for the entire period under review. Consequently, the final sample consists of ten (10) listed deposit money banks with continuous and available data from 2015 to 2024. This approach ensures that the analysis is based on a consistent and reliable dataset, thereby enhancing the validity of the study’s conclusions.

Table 1. Listed deposit money banks (DMBs) in Nigeria and their year of incorporation.

S/N	Bank name	Ticker	Date of incorporation
1	Ecobank Transnational Incorporated	ETI	October 3, 1985
2	FCMB Group Plc	FCMB	November 20, 2012
3	Fidelity Bank Plc	FIDELITYBK	November 19, 1987
4	First HoldCo Plc (FBN Holdings)	FIRSTHOLDCO	August 13, 2012
5	Jaiz Bank Plc	JAIZBANK	April 1, 2003
6	Stanbic IBTC Holdings Plc	STANBIC	March 14, 2012
7	United Bank for Africa Plc	UBA	February 23, 1961
8	Unity Bank Plc	UNITYBNK	April 27, 1987
9	Wema Bank Plc	WEMABANK	May 2, 1945
10	Zenith Bank Plc	ZENITHBANK	May 30, 1990

Source: [Nigerian Exchange Group \(2024\)](#).

3.3. Data Collection

Data for this study were obtained solely from secondary sources to ensure objectivity and replicability. Secondary data were extracted from the annual reports and corporate governance disclosures of the sampled banks, covering the period 2015 to 2024. These documents provided objective measures of internal control practices, whistleblowing mechanisms, ethical conduct, and firm age.

3.3.1. Measurement of Variables

- Internal Control System Effectiveness (Independent Variable): Measured using indicators derived from the COSO framework, including control environment, risk assessment, control activities, information and communication, and monitoring. Data were obtained through content analysis of annual reports and corporate governance disclosures.
- Whistleblowing System (Independent Variable): Assessed based on the presence, accessibility, and effectiveness of whistleblowing mechanisms, as disclosed in annual reports and corporate governance statements.
- Ethical Conduct (Dependent Variable): Measured using proxies such as the frequency and nature of reported ethical breaches, compliance with codes of ethics, and disclosures related to ethical practices, as reported in annual and sustainability reports.
- Firm Age (Control Variable): Operationalized as the number of years since the bank’s incorporation or listing on the Nigerian Exchange Group, as reported in official records.

3.4. Data Analysis Techniques

The data were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics including means, standard deviations, minimums, and maximums were computed to summarize the

characteristics of the variables and provide an overview of the data distribution across banks and over the study period.

For inferential analysis, panel data analysis was employed to exploit both the cross-sectional and time-series dimensions of the dataset, thereby enhancing the robustness and efficiency of the estimations. Specifically, both fixed effects and random effects models were estimated to examine the impact of internal control system effectiveness and whistleblowing systems on ethical conduct, while controlling for firm age. The use of panel data allows for the control of unobserved heterogeneity and provides more reliable parameter estimates.

To determine the most appropriate estimation technique, the Hausman test was conducted to compare the fixed effects and random effects models. The Hausman test assesses whether the unique errors are correlated with the regressors, thereby guiding the selection of the preferred model for inference.

In addition, Pearson correlation analysis was used to examine the bivariate relationships among the study variables. To ensure the robustness and validity of the panel regression results, several diagnostic tests were performed.

- Multicollinearity was assessed using the Variance Inflation Factor (VIF).
- Autocorrelation was tested using the Durbin-Watson statistic and, where appropriate, panel-specific tests for serial correlation.

These diagnostic procedures help to validate the underlying assumptions of the panel regression models and enhance the credibility of the findings.

3.5. Model Specification

The relationship between internal control system effectiveness, whistleblowing systems, and ethical conduct was modeled using multiple regression analysis. The general form of the regression model is specified as follows.

$$EC_{it} = \beta_0 + \beta_1 ICE_{it} + \beta_2 WBS_{it} + \beta_3 FA_{it} + \epsilon_{it} \quad (1)$$

Where:

- EC = Ethical Conduct score.
- ICE = Internal Control System Effectiveness.
- WBS = Whistleblowing System score.
- FA = Firm Age.
- β_0 = Intercept.
- $\beta_1, \beta_2, \beta_3$ = Regression coefficients.
- ϵ_i = Error term.

This model enables the estimation of the individual and combined effects of internal control system effectiveness and whistleblowing systems on ethical conduct, while accounting for the potential influence of firm age.

4. Results

4.1. Descriptive Statistics

Table 2 presents the summary statistics for the main variables used in the analysis, covering the period 2015–2024 for the ten listed deposit money banks included in the study. The table includes measures of central tendency and dispersion, as well as skewness, kurtosis, and the Jarque-Bera test for normality.

Table 2. Descriptive statistics.

Variable	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability	Obs.
EC	0.712	0.720	0.950	0.420	0.120	-0.25	2.65	1.85	0.40	100
ICE	0.785	0.790	0.950	0.500	0.110	-0.30	2.80	2.10	0.35	100
WBS	0.650	0.660	0.900	0.300	0.140	-0.10	2.50	1.20	0.55	100
FA	28.30	27.00	79.00	3.00	18.50	0.90	3.10	4.25	0.12	100

Source: Authors' Computations (2025).

The results indicate that all variables are approximately normally distributed, as evidenced by Jarque-Bera statistics and their associated p-values, which are all above the conventional 0.05 threshold. This suggests that the assumption of normality is not violated for the variables used in the regression analysis.

4.2. Correlation Analysis

Table 3 shows the Pearson correlation coefficients among the study variables.

Table 3. Correlation Matrix.

Variable	EC	ICE	WBS	FA
EC	1.000			
ICE	0.612	1.000		
WBS	0.545	0.410	1.000	
FA	0.120	0.080	0.150	1.000

Source: Authors' Computations (2025).

The results indicate a strong positive correlation between internal control system effectiveness and ethical conduct ($r = 0.612$), as well as between whistleblowing systems and ethical conduct ($r = 0.545$).

4.3. Regression Analysis

To examine the impact of internal control system effectiveness and whistleblowing systems on ethical conduct, panel data regression analysis was conducted using both fixed effects and random effects models. The results are presented in Tables 4 and 5 respectively. The Hausman test was subsequently employed to determine the most appropriate model for inference.

Table 4. Fixed effects regression results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ICE	0.410	0.085	4.824	0.0000
WBS	0.295	0.072	4.097	0.0001
FA	0.002	0.001	1.800	0.0750
C	0.210	0.080	2.625	0.0100
Statistic	Value			
R-squared	0.672			
Adjusted R ²	0.645			
F-statistic	24.500			
Prob(F-stat)	0.0000			
Durbin-Watson	2.03			

Source: Authors' Computations (2025).

4.3.1. Fixed Effects Model

The fixed effects model reveals that both internal control system effectiveness (ICE) and whistleblowing systems (WBS) have positive and statistically significant effects on ethical conduct (EC) at the 1% significance level. Firm age (FA) is positive but only marginally significant at the 10% level. The R-squared value of 0.672 indicates that approximately 67% of the variation in ethical conduct is explained by the model. The Durbin-Watson statistic of 2.03 suggests no evidence of autocorrelation in the residuals.

Table 5. Random effects regression results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ICE	0.395	0.090	4.389	0.0000
WBS	0.280	0.075	3.733	0.0003
FA	0.002	0.001	1.900	0.0600
C	0.225	0.085	2.647	0.0090
Statistic	Value			
R-squared	0.655			
Adjusted R ²	0.630			
F-statistic	22.100			
Prob(F-stat)	0.0000			
Durbin-Watson	2.01			

Source: Authors' Computations (2025).

4.3.2. Random Effects Model

The random effects model also shows that both ICE and WBS are positive and significant predictors of ethical conduct, with coefficients similar in magnitude to those in the fixed effects model. Firm age remains positive and marginally significant. The Durbin-Watson statistic of 2.01 again indicates no autocorrelation.

Table 6. Hausman test.

Test summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.842	3	0.0495

Source: Authors' Computations (2025).

4.3.3. Hausman Test

The Hausman test yields a p-value of 0.0495, which is less than the 0.05 threshold, indicating that the fixed effects model is preferred for this analysis.

The regression results provide robust evidence that both internal control system effectiveness and whistleblowing systems significantly enhance ethical conduct among listed deposit money banks in Nigeria. Specifically, a one-unit increase in internal control system effectiveness is associated with a 0.410 increase in the ethical conduct score, while a one-unit increase in the whistleblowing system score leads to a 0.295 increase in ethical conduct, holding other variables constant. Firm age, while positive, is only marginally significant, suggesting that older banks may have slightly higher ethical conduct, but this effect is not as strong as the main predictors.

The high R-squared values indicate that the models explain a substantial proportion of the variance in ethical conduct. The Durbin-Watson statistics, being close to 2, confirm the absence of autocorrelation, further validating the reliability of the regression estimates.

Overall, these findings underscore the critical importance of strengthening internal control systems and institutionalizing effective whistleblowing mechanisms as strategies for promoting ethical standards and reducing unethical practices in the Nigerian banking sector.

4.4. Diagnostic Test

4.4.1. Multicollinearity

To assess the presence of multicollinearity among the independent variables, the Variance Inflation Factor (VIF) was computed for each predictor in the regression model. Multicollinearity is considered problematic if the VIF exceeds 10, indicating that the variable is highly correlated with other predictors in the model.

Table 7. Variance inflation factor (VIF) results.

Variable	VIF	Tolerance
ICE	1.35	0.74
WBS	1.22	0.82
FA	1.10	0.91

Note: VIF values below 10 and tolerance values above 0.1 indicate no multicollinearity problem.

Source: Authors Computation, (2025)

The results in [Table 7](#) show that all VIF values are well below the commonly accepted threshold of 10, and all tolerance values are above 0.1. This indicates that multicollinearity is not a concern in this study, and the estimated coefficients for internal control system effectiveness (ICE), whistleblowing system (WBS), and firm age (FA) are reliable and not inflated due to high intercorrelations among the predictors.

4.5. Test of Hypotheses

The study formulated two null hypotheses to examine the relationships between internal control system effectiveness, whistleblowing systems, and ethical conduct in listed deposit money banks in Nigeria. The hypotheses were tested using panel data regression analysis, with the fixed effects model selected as the most appropriate estimator based on the Hausman test.

4.5.1. Test of Hypothesis One

H01: There is no significant relationship between internal control system effectiveness and ethical conduct in listed deposit money banks in Nigeria.

The regression results in [Table 4](#) indicate that internal control system effectiveness (ICE) has a positive and statistically significant effect on ethical conduct (coefficient = 0.410, $p < 0.01$). This finding demonstrates that improvements in internal control mechanisms are associated with higher levels of ethical conduct among the sampled banks. Given the significance of the coefficient, the null hypothesis (H01) is rejected. Thus, it is concluded that internal control system effectiveness is a significant predictor of ethical conduct in listed deposit money banks in Nigeria.

4.5.2. Test of Hypothesis Two

H02: Whistleblowing systems have no significant impact on ethical conduct in listed deposit money banks in Nigeria.

The regression analysis also reveals that the whistleblowing system (WBS) variable is positively and significantly related to ethical conduct (coefficient = 0.295, $p < 0.01$). This result suggests that the presence and effectiveness of whistleblowing mechanisms contribute meaningfully to the promotion of ethical behavior within the banks. As the effect is statistically significant, the null hypothesis (H02) is likewise rejected. Therefore, whistleblowing systems are found to have a significant positive impact on ethical conduct in listed deposit money banks in Nigeria.

4.6. Discussion of Result

The results of this study provide robust empirical evidence that both internal control system effectiveness and whistleblowing systems are significant and positive predictors of ethical conduct among listed deposit money banks in Nigeria. The fixed effects panel regression, which was selected as the most appropriate model based on the Hausman test, demonstrates that improvements in internal control mechanisms and the institutionalization of effective whistleblowing channels are associated with higher levels of ethical conduct. The marginal significance of firm age suggests that while older banks may have slightly more established ethical practices, the primary drivers of ethical conduct are the quality of internal controls and the presence of whistleblowing systems.

These findings are consistent with the theoretical expectations of Agency Theory, which posits that robust control mechanisms are necessary to align the interests of managers and stakeholders and to mitigate opportunistic behavior (Hamzah et al., 2024). The results also support the Fraud Triangle framework, as effective internal controls reduce opportunities for unethical behavior, while whistleblowing systems increase the perceived risk of detection, thereby discouraging rationalization of misconduct (Faisal et al., 2023).

The findings of this study align closely with previous empirical research in the field. For instance, Ubesie et al. (2023) found that strong internal control measures significantly reduce fraud and unethical practices in Nigerian banks, a result echoed in the present analysis. Similarly, Otoo et al. (2023) reported that control activities and risk assessment are significant predictors of organizational effectiveness in African banks, reinforcing the importance of internal controls in the banking sector.

The positive impact of whistleblowing systems on ethical conduct is also consistent with the work of Dwiyantri et al. (2022) who demonstrated that whistleblowing mechanisms, in conjunction with internal controls, are critical for fraud prevention. The current study extends these findings by showing that the effect remains significant even after controlling for firm age and using a panel data approach.

However, the marginal effect of firm age observed in this study differs from some prior research, such as Hamed (2023) which found a stronger relationship between organizational maturity and ethical practices. This discrepancy may be attributed to differences in sample composition, measurement approaches, or the unique regulatory environment of the Nigerian banking sector.

The implications of these findings are multifaceted. For policymakers and regulators, the results underscore the necessity of enforcing stringent internal control requirements and encouraging the adoption of comprehensive whistleblowing frameworks across the banking sector. Regulatory bodies may consider developing standardized guidelines for internal control assessment and whistleblowing system implementation to ensure consistency and effectiveness.

For bank management, the study highlights the strategic importance of investing in robust internal control systems and fostering a culture that supports ethical behavior and transparent reporting. Management should prioritize regular training, clear communication of ethical standards, and the protection of whistleblowers to enhance the effectiveness of these mechanisms.

For future research, the study suggests the value of exploring additional organizational and environmental factors that may influence ethical conduct, such as corporate governance structures, leadership styles, and external regulatory pressures. Longitudinal studies and qualitative approaches could provide deeper insights into the dynamics of ethical behavior in the banking sector.

In summary, this study contributes to the growing body of literature on corporate ethics and governance by providing empirical evidence that effective internal controls and whistleblowing systems are critical levers for promoting ethical conduct in Nigerian deposit money banks. The findings offer actionable insights for stakeholders seeking to strengthen ethical standards and reduce the incidence of unethical practices in the financial sector.

5. Conclusion

This study investigated the relationship between internal control system effectiveness, whistleblowing systems, and ethical conduct in listed deposit money banks in Nigeria, utilizing panel data from 2015 to 2024. The analysis, based on a fixed effects panel regression model, revealed that both internal control system effectiveness and whistleblowing systems are significant and positive predictors of ethical conduct. The findings demonstrate that banks with robust internal control frameworks and well-institutionalized whistleblowing mechanisms are more likely to exhibit higher standards of ethical behavior. The marginal effect of firm age suggests that while organizational maturity may play a role, the primary determinants of ethical conduct are the quality of internal controls and the presence of effective whistleblowing systems.

These results are consistent with theoretical expectations and prior empirical research, reinforcing the critical role of internal governance mechanisms in promoting ethical standards and reducing the incidence of unethical practices in the banking sector. The study thus contributes to the literature by providing context-specific evidence from the Nigerian banking industry and underscores the importance of strengthening both formal controls and reporting channels to foster an ethical organizational climate.

5.1. Recommendations

Based on the findings, the following recommendations are proposed.

- i. Bank management should prioritize the continuous improvement of internal control frameworks, ensuring that all components—such as risk assessment, control activities, information and communication, and monitoring—are effectively implemented and regularly reviewed. This will help mitigate opportunities for unethical behavior and enhance overall organizational integrity.
- ii. Banks should establish and maintain accessible, confidential, and well-publicized whistleblowing channels. It is essential to create a culture where employees feel safe to report unethical practices without fear of retaliation. Management should also ensure that all reported cases are thoroughly investigated and appropriately addressed.
- iii. Regulatory authorities, such as the Central Bank of Nigeria and the Nigerian Exchange Group, should enforce stricter compliance requirements regarding internal controls and whistleblowing systems. The development of standardized guidelines and periodic audits can help ensure consistency and effectiveness across the sector.
- iv. Regular training programs on ethical standards, internal controls, and whistleblowing procedures should be conducted for all bank employees. Such initiatives will enhance awareness, reinforce ethical values, and empower staff to act responsibly.

In conclusion, the promotion of ethical conduct in Nigerian deposit money banks requires a holistic approach that integrates strong internal controls, effective whistleblowing systems, and a supportive ethical culture. By implementing these recommendations, banks and regulators can enhance trust, safeguard stakeholder interests, and contribute to the long-term stability and reputation of the Nigerian banking industry.

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