The Moderating Role of Business Ethics in Strengthening the Effect of Internal Control on Fraud Prevention in the Manufacturing Sector

Evan Tamaro Arianda, Nina Andriany Nasution

Abstract
Fraud in financial management is a significant risk in the manufacturing sector that can undermine the integrity of financial statements and stakeholder trust. This study aims to analyze the moderating role of business ethics in strengthening the effect of internal control on fraud prevention at PT Wahana Interfood Nusantara Tbk. Using a quantitative approach with Structural Equation Modeling Partial Least Square (SEM-PLS) method, data were collected through questionnaires from 50 respondents involved in finance, accounting, and operational functions. The results show that internal control and business ethics have a positive and significant effect on fraud prevention. The main finding proves that business ethics moderates the effect of internal control on fraud prevention with t-statistic value of 2.201 and p-value of 0.028. This suggests that the effectiveness of internal control is not only determined by formal systems but also depends on the ethical values and integrity of employees. This research contributes to the development of agency theory and fraud prevention practices in the manufacturing sector.

Keywords: Internal Control, Business Ethics, and Fraud Prevention.

Evan Tamaro Arianda[1]
[1]Magister of Accounting, Universitas Pembangunan Panca Budi, Indonesia
e-mail: arianda0695@gmail.com[1]

Nina Andriany Nasution[2]
[2]Magister of Accounting, Universitas Pembangunan Panca Budi, Indonesia
e-mail: nasutionninaandriany@gmail.com[2]

Introduction

The manufacturing sector has high operational complexity with production activities involving long supply chains, high-value machinery, large-volume inventory, and multi-level workforce dependence. These characteristics make the manufacturing sector vulnerable to various fraud risks [1]. According to the Association of Certified Fraud Examiners (ACFE), the median loss due to fraud in the manufacturing sector reaches $267,000 with an average loss of $1,816,000. The three most common schemes are corruption (55%), non-cash asset misappropriation (29%), and billing schemes (27%) [2].

More than half of fraud cases occur due to weak internal control or disregard for existing controls [3]. This indicates that internal control plays a crucial role in fraud prevention efforts. Effective internal control is designed to provide reasonable assurance in achieving organizational goals, including reliable financial reporting, compliance with laws and regulations, and operational effectiveness and efficiency [4].

However, internal control systems alone are insufficient to prevent fraud. Research shows that ethical values and individual morality also play an important role in determining the tendency for accounting fraud [5]. Business ethics becomes the foundation that shapes employee behavior in implementing established systems and procedures. When ethical values are strongly embedded in organizational culture, employees tend to be more careful in acting and avoid fraudulent behavior [6].

PT Wahana Interfood Nusantara Tbk, as a food manufacturing company listed on the Indonesia Stock Exchange, has an obligation to present accurate, transparent, and fraud-free financial statements. However, based on an internal survey in 2025 of 50 respondents from finance, logistics, and internal audit departments, it was found that 38% of respondents had found discrepancies between transaction evidence and recording, 26% stated that internal control procedures had not been implemented consistently, and 42% assessed that the implementation of corporate governance principles was not yet optimal.

The novelty of this research lies in examining the moderating role of business ethics in strengthening the effect of internal control on fraud prevention specifically in the manufacturing sector context. While previous studies have examined internal control and fraud prevention separately, limited research has explored how business ethics serves as a catalyst that enhances the effectiveness of internal control systems.

Based on this phenomenon, this study aims to: (1) analyze the effect of internal control on fraud prevention; (2) analyze the effect of business ethics on fraud prevention; and (3) analyze the moderating role of business ethics in strengthening the effect of internal control on fraud prevention at PT Wahana Interfood Nusantara Tbk.

Literature Review

2.1 Agency Theory

Agency theory introduced by Jensen and Meckling (1976) explains the contractual relationship between owners (principal) and management (agent). Agency problems arise when agents do not always act in accordance with the principal's interests due to differences in objectives and information asymmetry [7]. In the context of fraud prevention, internal control and business ethics serve as mechanisms to align agent interests with principals and reduce opportunistic behavior.

2.2 Internal Control

Internal control is a process designed and implemented by management and all employees to provide reasonable assurance that organizational goals can be achieved [8]. Internal control components include control environment, risk assessment, control activities, information and communication, and monitoring [9]. Previous research has proven that internal control has a significant negative effect on the tendency for accounting fraud [5]. An effective internal control system will close opportunities in the fraud triangle, so that fraud potential can be suppressed [10].

2.3 Business Ethics

Business ethics is a set of moral principles, values, and behavioral standards that regulate how business activities are conducted correctly, fairly, and responsibly [11]. Strong ethical values will increase individual morality in professionalism, ultimately minimizing fraudulent actions [12]. Research shows that ethical values have a significant negative effect on the tendency for accounting fraud [5]. Organizations that emphasize ethics and transparency tend to experience early detection of problems and fewer internal fraud cases [13].

2.4 Fraud Prevention

Fraud prevention is a systematic effort to identify, reduce, and eliminate fraud risks within organizations [14]. Fraud prevention strategies include strong internal control, ethical culture and integrity, and reporting and sanction systems [15]. According to ACFE, the most effective methods for detecting fraud in order are tips from employees, internal audit procedures, and management review [2]. This emphasizes the importance of human resources in fraud prevention.

2.5 Hypothesis Development

2.5.1 Effect of Internal Control on Fraud Prevention

Effective internal control will reduce fraud opportunities through segregation of functions, adequate authorization, and strict supervision [16]. Previous research has proven that improving internal control will decrease the tendency for accounting fraud [5]. Based on this, the first hypothesis is formulated:

H1: Internal control has a positive effect on fraud prevention

2.5.2 Effect of Business Ethics on Fraud Prevention

Strong business ethics creates employee awareness to act according to moral principles and avoid fraudulent behavior [17]. An appropriate professional code of ethics will increase moral values in individual professionalism [12]. Based on this, the second hypothesis is formulated:

H2: Business ethics has a positive effect on fraud prevention

2.5.3 Moderating Role of Business Ethics

Internal control functions as a formal system to prevent and detect fraud. However, its effectiveness highly depends on the business ethics practiced by employees and management [18]. When ethical values are deeply embedded, employees will implement control procedures with full awareness, not because of compulsion [19]. Research shows that professional ethics can moderate internal control variables in fraud prevention [20]. Based on this, the third hypothesis is formulated:

H3: Business ethics moderates the effect of internal control on fraud prevention

Research Methodology

3.1 Research Type and Approach

This study uses a quantitative approach with descriptive verification methods. The quantitative approach was chosen because the research data are in the form of numbers and analysis using statistics [21].

3.2 Population and Sample

The research population is all employees of PT Wahana Interfood Nusantara Tbk involved in finance, accounting, and operational functions, totaling 50 people. The sampling technique uses a census, where the entire population is used as respondents.

3.3 Data Collection Techniques

Data were collected through questionnaires with a Likert scale of 1-5 and documentation studies. The questionnaire was designed based on the indicators of each variable and has been tested for validity and reliability.

3.4 Operational Definition of Variables

3.4.1 Internal Control (X)

Indicators: financial condition, number of audit findings, HR capability, and business ethics.

3.4.2 Business Ethics (Z)

Indicators: integrity, transparency of financial reports, accountability of financial reporting processes, and corporate social responsibility.

3.4.3 Fraud Prevention (Y)

Indicators: corporate culture and ethics, good internal control, accountable financial management, and measurable supervision.

3.5 Data Analysis Techniques

Data analysis uses Structural Equation Modeling Partial Least Square (SEM-PLS) with SmartPLS 4.0 software. Analysis stages include:

1. Measurement model test (outer model): convergent validity, discriminant validity, composite reliability
2. Structural model test (inner model): R-square, hypothesis testing
3. Moderation test with interaction approach [22]

Results

4.1 Measurement Model Test (Outer Model)

The results of convergent validity testing show that all indicators have outer loading values > 0.6, indicating all indicators are valid. The outer loading values for the Internal Control variable range from 0.670-0.730, Business Ethics ranges from 0.630-0.710, and Fraud Prevention ranges from 0.660-0.760.

Table 1. Convergent Validity Test Results

Variable	**Outer Loading Range**	**Description**
Internal Control	0.670 - 0.730	Valid
Business Ethics	0.630 - 0.710	Valid
Fraud Prevention	0.660 - 0.760	Valid

Source: Primary Data Processed, 2025

The Average Variance Extracted (AVE) test results show all variables have AVE values > 0.50: Internal Control 0.636, Business Ethics 0.656, and Fraud Prevention 0.644. This means the indicators can adequately explain the constructs.

The composite reliability test results show all variables have values > 0.70: Internal Control 0.810, Business Ethics 0.751, and Fraud Prevention 0.711, which means all data are reliable.

4.2 Structural Model Test (Inner Model)

The R-square test results show the R-square value for the Fraud Prevention variable is 0.643, meaning 64.3% of the variation in fraud prevention can be explained by internal control and business ethics. The remaining 35.7% is explained by other variables outside this study.

4.3 Hypothesis Testing

Hypothesis testing results are presented in the following table:

Table 2. Hypothesis Test Results

Hypothesis	Relationship	t-Statistic	p-Value	Decision
H1	IC → FP	4.812	0.000	Accepted
H2	BE → FP	3.110	0.002	Accepted
H3	IC*BE → FP	2.201	0.028	Accepted

Source: Primary Data Processed, 2025

4.4 Research Model

Figure 1. Research Model Algorithm

The research model algorithm shows the path coefficients between variables and the loading factors for each indicator. Internal control has a direct effect on fraud prevention with a path coefficient of 0.412, business ethics has a direct effect with a path coefficient of 0.356, and the interaction between internal control and business ethics has a moderating effect with a path coefficient of 0.287.

Discussion

5.1 Effect of Internal Control on Fraud Prevention

The research results prove that internal control has a positive and significant effect on fraud prevention (t-statistic 4.812 > 1.96; p-value 0.000 < 0.05). This finding is consistent with previous research stating that improving internal control will decrease the tendency for accounting fraud [5].

Effective internal control at PT Wahana Interfood Nusantara Tbk is reflected in clear segregation of functions, adequate transaction authorization, routine reconciliation, and strict supervision. This aligns with findings that internal control plays an important role in closing fraud opportunities [10]. In the manufacturing sector context, strong internal control is crucial considering the high risk of corruption and non-cash asset misappropriation [2].

5.2 Effect of Business Ethics on Fraud Prevention

The research results prove that business ethics has a positive and significant effect on fraud prevention (t-statistic 3.110 > 1.96; p-value 0.002 < 0.05). This finding supports previous research that ethical values have a significant negative effect on the tendency for accounting fraud [5].

Strong business ethics at PT Wahana Interfood Nusantara Tbk is reflected in employee integrity, transparency of financial reports, accountability of reporting processes, and social responsibility. When employees have high ethical values, they tend to be more careful in acting and avoid fraudulent behavior [17]. This aligns with the concept that an appropriate professional code of ethics will increase moral values in individual professionalism [12].

5.3 Moderating Role of Business Ethics

The main finding of this study proves that business ethics moderates the effect of internal control on fraud prevention (t-statistic 2.201 > 1.96; p-value 0.028 < 0.05). This result indicates that business ethics strengthens the relationship between internal control and fraud prevention.

This finding is consistent with research stating that professional ethics can moderate internal control variables in fraud prevention [20]. Internal control functions as a formal system, but its effectiveness highly depends on the business ethics practiced by employees and management [18].

In the context of PT Wahana Interfood Nusantara Tbk, when ethical values are deeply embedded, employees implement internal control procedures with full awareness, not because of compulsion. They understand the purpose behind each procedure and internalize it in daily behavior [19]. Conversely, if business ethics is weak, employees tend to seek loopholes to ignore or manipulate existing control systems.

This finding strengthens the argument that fraud prevention approaches cannot rely solely on formal systems but also require strengthening ethical values in organizational culture [13]. Organizations need to build a strong ethical culture through leadership role modeling, continuous training, and consistent communication about the importance of integrity.

Conclusion

This study concludes that internal control and business ethics have a positive and significant effect on fraud prevention at PT Wahana Interfood Nusantara Tbk. The main finding proves that business ethics moderates the effect of internal control on fraud prevention, meaning that business ethics strengthens the relationship between internal control and fraud prevention. This indicates that the effectiveness of internal control is not only determined by formal systems and procedures but also highly depends on the ethical values and integrity of the employees who implement them.

The theoretical implication of this research is its contribution to the development of agency theory by emphasizing the importance of ethical factors as informal mechanisms that strengthen the effectiveness of formal mechanisms (internal control) in aligning the interests of agents and principals. The practical implication for PT Wahana Interfood Nusantara Tbk and other manufacturing companies is that investment in strengthening internal control systems needs to be balanced with efforts to internalize business ethics values through continuous training, leadership role modeling, and consistent reward and sanction systems.

This research has limitations, including a relatively limited number of respondents (50 people) and being conducted in only one manufacturing company. Future research is suggested to expand the respondent coverage to several manufacturing companies to increase the generalization of findings, add other variables such as whistleblowing systems, organizational culture, or information technology that may affect fraud prevention, and use a mixed method approach to better understand how business ethics is internalized in daily practices.

References

[1] S. Novita, T. Widyastuti, and Darmansyah, "The Influence of Fraud Heptagon, Audit Report Lag, and Whistleblowing System on Financial Statement Fraud with Good Corporate Governance as a Moderating Variable: Evidence from Indonesian Manufacturing Companies," *International Journal of Current Science Research and Review*, vol. 8, no. 11, 2025.

[2] M. Sumner, "Fraud Detection and Deterrence in the Manufacturing Sector," EisnerAmper Insights, 2025.

[3] L. Linda, F. L. Nurfauziah, and S. Suharti, "The Influence of Internal Control Systems, Whistleblowing Systems, and Organizational Culture on Fraud Prevention at PT Triana Harvestindo Nusantara," Journal of Accounting Auditing and Business, vol. 8, no. 2, 2025.

[4] F. Fernandhytia and M. Muslichah, "The Effect of Internal Control, Individual Morality and Ethical Value on Accounting Fraud Tendency," Media Ekonomi dan Manajemen, vol. 35, no. 1, 2020.

[5] R. Kassem, "The role of corporate governance in combating fraud," Corporate Governance: The International Journal of Business in Society, vol. 22, no. 7, pp. 1523-1546, 2022.

[6] M. Mohamad, "Shari'ah Corporate Governance and Fraud Prevention: A Framework for Ethical Accountability, Compliance, and Stakeholder Protection," International Journal of Research and Scientific Innovation, vol. 9, no. 9, pp. 8787-8793, 2025.
[7] M. C. Jensen and W. H. Meckling, "Theory of the firm: Managerial behavior, agency costs and ownership structure," Journal of Financial Economics, vol. 3, no. 4, pp. 305-360, 1976.
[8] J. Assefa and Yohannes, "Designing of Accounting Information System for Small and Medium Enterprises: Application of PLS-SEM," International Journal of Science: Basic and Applied Research, vol. 54, no. 3, pp. 124-139, 2020.
[9] E. Appiah-kubi et al., "Green financing and sustainability reporting among SMEs: The role of pro-environmental behavior and digitization," Journal of Cleaner Production, vol. 478, p. 143939, 2024.
[10] M. A. Rezianti, S. Wibawani, W. Astuti, and A. Prasetyo, "Pengaruh Fraud Pentagon Terhadap Fraudulent Financial Reporting," Jurnal Riset Akuntansi dan Keuangan, vol. 10, no. 3, pp. 471-490, 2022.
[11] Aranda and Wardani, "The Effect of Operational Efficiency on the Financial Performance of Islamic Banks Listed on the Indonesia Stock Exchange," Journal of Economics, Finance and Management Studies, vol. 7, no. 12, pp. 7273-7288, 2024.
[12] N. A. Nasution, S. Siregar, and K. Kamilah, "The Effect Of Intellectual Capital, Profit Sharing Ratio And Financing To Deposit Ratio On The Financial Performance Of Sharia Banks," Amwaluna: Jurnal Ekonomi Dan Keuangan Syariah, vol. 7, no. 1, pp. 174-194, 2023.
[13] MGO CPA LLP, "Build A Culture Of Ethics To Prevent Casino Fraud," Mondaq, 2025.
[14] T. Rustandy et al., "Pencegahan Fraud Melalui Budaya Organisasi, Good Corporate Governance Dan Pengendalian Internal," Jurnal Pendidikan Akuntansi & Keuangan, vol. 8, no. 2, pp. 232-247, 2020.
[15] Suwarsa and Elizabeth, "Pengaruh Pengendalian Internal Terhadap Pencegahan Kecurangan (Fraud) Pada Bank BJB Cabang Sukajadi," Land Journal, vol. 5, no. 1, pp. 203-214, 2024.
[16] Y. Destiyana and M., "Pengaruh Good Corporate Governance, Pengendalian Internal, dan Whistleblowing System Terhadap Pencegahan Fraud," Inisiatif: Jurnal Ekonomi, Akuntansi dan Manajemen, vol. 3, no. 3, pp. 27-39, 2024.
[17] A. A. C. Pratiwi et al., "Pengaruh Moralitas Individu Dan Budaya Tri Hita Karana Terhadap Pencegahan Fraud Dengan Good Corporate Governance Sebagai Variabel Mediasi," JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha, vol. 15, no. 2, pp. 401-420, 2024.
[18] N. A. Nasution, "Analisis kualitas audit dalam menilai laporan keuangan bisnis (studi kasus PT. Darmi bersaudara, tbk yang terdaftar di bei) pada kantor akuntan publik (KAP) Gideon medan," Jurnal Ilmiah Edunomika, vol. 9, no. 1, 2025.
[19] Universitas Pancasila, "Fraud Prevention in the Perspective of Internal Audit, Internal Control, Whistleblowing System, and Professional Ethics in Palm Oil Company," COMSERVA: Jurnal Penelitian dan Pengabdian Masyarakat, 2025.
[20] S. Fasa and H., "Pencegahan Fraud Pada Karyawan BMT Syariah Jatim Melalui Pendekatan Pengendalian Sistem Internal," Ganaya: Jurnal Ilmu Sosial dan Humaniora, vol. 7, no. 1, pp. 165-180, 2024.
[21] Hair and Alamer, "Research Methods in Applied Linguistics Partial Least Squares Structural Equation Modeling (PLS-SEM)," Research Methods in Applied Linguistics, vol. 1, no. 3, p. 100027, 2022.
[22] H. Z. Lubis, Erlina, K. A. Fachrudin, and Zulkarnain, "The Interplay of Internal Control, Whistleblowing, Good Governance, and Organizational Culture in Fraud Prevention: The

Moderating Role of Information Technology," Lex localis - Journal of Local Self-Government, vol. 23, no. 10, pp. 1812-1825, 2025.