Seminar Nasional Fakultas Ekonomi dan Sains Teknologi (SINERGITEK) *ISSN: 3047-1354 (online)*
Vol. 1 No. 1 (2025)
https://doi.org/

The Influence of Internal Control Effectiveness and Management Transparency in Preventing Fraud （Production Cost）in PT Sun Kaca Indonesia

Susan Grace Nainggolan [1], Stella Priscilla Salim [2]
Akuntansi, Sekolah Tinggi Ilmu Ekonomi Eka Prasetya[1,2]
Email: veragolan22@gmail.com,[1] stellapriscillasalim@gmail.com[2] ,

ABSTRACT

Fraud in production costs remains a significant organizational risk, with the potential to generate substantial financial losses and diminish stakeholder trust. This study analyzes the impact of internal control effectiveness and management transparency on the prevention of production cost fraud at PT Sun Kaca Indonesia. Employing a quantitative research methodology, data were collected through structured questionnaires administered to 62 employees within the production department. The dataset was processed using validity and reliability assessments, classical assumption testing, and multiple linear regression analysis through IBM SPSS 25. The findings reveal that internal control exerts a significant positive influence on fraud prevention ($\beta = 0.462$, $p < 0.05$), while management transparency also contributes positively, albeit to a lesser extent ($\beta = 0.314$, $p < 0.05$). The study enriches the theoretical discourse on governance mechanisms and fraud prevention, while emphasizing the practical necessity of enhancing internal control systems and transparency practices to strengthen organizational accountability and mitigate fraud risk.
Keywords: production costs, fraud, internal control, management transparency.

INTRODUCTION

Globally, fraudulent practices in the manufacturing sector remain a serious issue. According to Association of Certified Fraud Examiners (2022)that the manufacturing sector is among the industries experiencing significant losses due to fraud. In addition, many fraud cases have been identified as originating from the operations department. In the context of manufacturing companies, this department is often associated with production activities, which underlines the importance of implementing effective internal controls so that every company activity can be monitored and the potential for irregularities minimized.

According toThe Committee of Sponsoring Organizations of the Treadway Commission (2013) emphasizes that effective internal control—encompassing control environment, risk assessment (including fraud risk), control activities, information and communication, and monitoring—is fundamental to mitigating fraud risk within organizations. This framework highlights that fraud risk should be explicitly considered as part of the risk assessment process, thereby ensuring that internal control systems not only support operational and reporting objectives but also safeguard against potential irregularities.

Complementing this, According to Bushman & Smith (2001) emphasize that management transparency, reflected in open financial reporting, clear accountability structures, and accessible communication channels, is equally vital in promoting accountability and minimizing fraudulent practices.

At PT Sun Kaca Indonesia, a company engaged in glass manufacturing, the production process is highly complex, involving procurement of raw materials, labor management, and product distribution. This complexity opens opportunities for fraud such as inflated raw material costs, manipulation of employee working hours, or fictitious expense reporting. Such risks are consistent with findings that manufacturing companies are particularly vulnerable to fraud related to production costs. While internal controls are important, they may not be sufficient unless supported by transparent management practices. Low transparency can obscure irregularities and delay timely corrective action.

Incorporate at least two or three references to prior research that empirically examined similar variables.This addition strengthens the theoretical foundation and situates your study within the broader academic discourse.

In addition, technological advancements in digital accounting and reporting bring both opportunities and challenges. Digitalization enhances efficiency and accuracy, yet without adequate internal control, it can also facilitate more sophisticated forms of fraud. Thus, evaluating the interplay between internal control and management transparency becomes increasingly crucial in mitigating fraud risks while leveraging technological progress.

Ultimately, in today's competitive business environment, safeguarding stakeholder trust and corporate reputation is essential. Fraud in production costs not only causes immediate financial losses but also undermines credibility and long-term sustainability. Therefore, this study aims to analyze the influence of internal control effectiveness (X1) and management transparency (X2) on

[1] Corresponding author.
E-mail address: iwanpurnama@gmail.com,@ulb.ac.id

SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

fraud prevention (Y) in production costs at PT Sun Kaca Indonesia, providing insights to strengthen governance and operational integrity.

LITERATURE REVIEW

Internal Control

Internal control is one of the important elements in sound corporate governance. While COSO (2013) emphasizes internal control as a framework for achieving operational and compliance objectives, Arens et al. (2017) highlight its role in protecting assets and ensuring the reliability of financial reporting. Collectively, these views demonstrate that internal control serves both preventive and monitoring functions essential to fraud mitigation.

These five components form the basis for assessing the effectiveness of internal control in this study, particularly in relation to the prevention of fraud in production costs.

Management Transparency

Management transparency is one of the main principles of good corporate governance. According to Bushman & Smith (2001), management transparency refers to the extent to which managers openly disclose information about the company's financial condition, strategies, and risks. Transparency creates market discipline, increases accountability, and strengthens stakeholder trust.

According to OECD (2004), transparency requires timely and accurate disclosure of all material matters—such as financial and operating results, company objectives, ownership and governance arrangements—so that stakeholders can assess the company's performance and hold management accountable. This transparency reduces information asymmetry and helps limit opportunities for mismanagement or fraudulent behaviour.

In the context of this study, management transparency indicators refer to several aspects, including:

1. Financial disclosure.
2. Clarity of organizational structure and responsibilities.
3. Communication between management levels.
4. Access to information for employees.
5. Whistleblowing mechanisms for reporting suspected fraud.

With a high level of transparency, the chances of fraud occurring can be reduced because every company activity can be monitored more openly.

Fraud Prevention

Fraud is a serious threat to companies, especially in the complex manufacturing sector, which involves many parties. According to Association of Certified Fraud Examiners (2022) fraud prevention is a series of policies and mechanisms designed to identify potential fraud and prevent irregularities from occurring in the first place. In production costs, fraud can occur in various aspects such as the purchase of raw materials, recording of working hours, and the use of overhead costs.

According to Arens et al., (2017) also emphasize that fraud prevention is a proactive measure taken by companies by designing internal control systems and monitoring procedures that minimize the opportunity for fraud, especially in operational processes that are prone to irregularities.

The indicators for internal control were adapted from the COSO (2013) framework, while management transparency indicators were based on Bushman and Smith (2001) and the OECD (2004) guidelines. Fraud prevention indicators were developed from the ACFE (2022) standards and prior empirical studies.

In this study, fraud prevention indicators include:

1. Verification of production costs.
2. Control over expenditures.
3. Accuracy of accounting records.
4. Regular internal audits.
5. Separation of duties and transaction authorization.

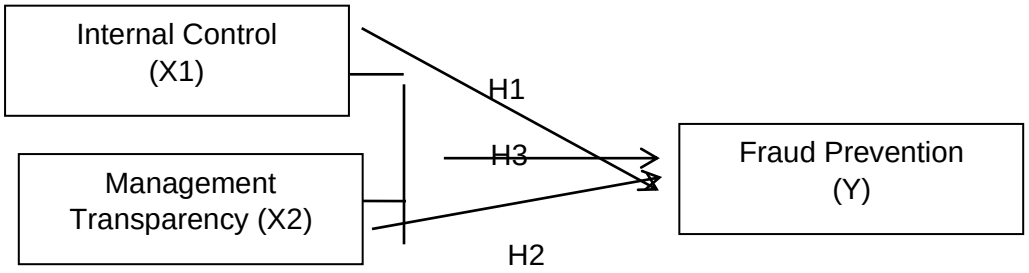
SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

Thus, fraud prevention is not merely a reactive measure after fraud has occurred, but rather a preventive effort that ensures internal control systems and management transparency are functioning effectively.

Relationship Between Variables

Based on the above literature review, it can be concluded that strong internal control (X1) plays an important role in preventing fraud (Y), while management transparency (X2) strengthens accountability and openness that support fraud prevention. Therefore, the combination of internal control and management transparency is believed to have a significant effect on fraud prevention in production costs in manufacturing companies, particularly PT Sun Kaca Indonesia.

Figure 1. Conceptual Framework



Based on the theoretical framework developed from prior literature and empirical findings, the following hypotheses are proposed:

H_1 : Internal Control has a significant effect on the prevention of production cost fraud at PT Sun Kaca Indonesia.

H_2 : Management Transparency has a significant effect on the prevention of production cost fraud at PT Sun Kaca Indonesia.

H_3 : Internal Control and Management Transparency collectively have a significant effect on the prevention of production cost fraud at PT Sun Kaca Indonesia.

RESEARCH METHOD

This research was conducted at PT Sun Kaca Indonesia, a glass manufacturing company located in West Jakarta at Tanjung Pura Street No.17, RT 009, RW 005, Pegadungan, Kalideres, West Jakarta. The company was selected as the research site because of its relevance to the study's objectives, which focus on examining the effectiveness of internal control and management transparency in preventing fraud in production costs. Its complex organizational structure—spanning departments of production, accounting, supervision, and administration—provided a suitable setting for testing the interrelationship of variables. The study was conducted over a six-month period, from April to September 2025, ensuring minimal disruption to operational activities.

This study employs a quantitative associative approach to examine the influence of internal control (X1) and management transparency (X2) on fraud prevention (Y) in production costs. The research was conducted at PT Sun Kaca Indonesia, a glass manufacturing company located in West Jakarta, over a six-month period from April to September 2025.

According to Sugiyono (2017), a population refers to a generalization region consisting of objects or subjects possessing specific characteristics determined by the researcher for study and conclusion drawing. The population of

SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

this study consisted of 62 employees directly involved in production processes, cost recording, internal control, and financial reporting. Because of the small population size, the research applied a saturated sampling technique, where all 62 employees were included as respondents.

The questionnaire items were adapted from the COSO (2013) internal control framework, Bushman and Smith (2001) and OECD (2004) for management transparency, and ACFE (2022) for fraud prevention. Each variable consisted of five indicators measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Data were analyzed using validity and reliability testing, followed by classical assumption tests (normality, multicollinearity, and heteroscedasticity) and multiple linear regression with IBM SPSS 25. These analyses aimed to verify data quality, fulfill regression assumptions, and test hypotheses concerning the relationship among variables.

RESULTS

Validity Test and Reliability Test

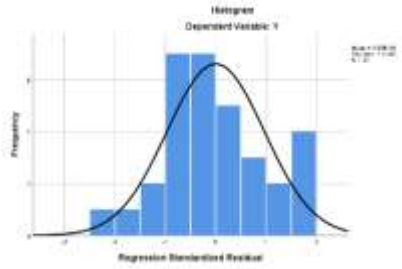
Based on the results of validity and reliability tests of 34 indicators with 12 internal control variable indicators, 12 management transparency indicators, and 10 fraud prevention indicators. The validity test results for variable X1 (Internal Control) indicators show that all indicators obtained a rcount value > 0.361, thus it can be concluded that all statements in the variable X1 questionnaire are valid. The validity test results for variable X2 (Management Transparency) indicators show that all indicators obtained a rhitung value > 0.361, thus it can be concluded that all statements in the variable X2 questionnaire are valid. The validity test results for variable Y (Fraud Prevention) indicators show that all indicators obtained a rcount value > 0.361, thus it can be concluded that all statements in the variable Y questionnaire are valid.

Based on the validity test using 62 respondents, the r-table value was 0.361 (df = 60, α = 0.05). All items of X1, X2, and Y variables have r-count values higher than r-table, indicating that all items are valid. According to Ghozali (2018) and Sugiyono (2017), an instrument is considered valid if r-count > r-table and reliable if Cronbach's Alpha > 0.6.

Internal Control (0.812), Management Transparency (0.845), and Fraud Prevention (0.798), indicating high reliability for all constructs. These results confirm that the questionnaire items are statistically valid and reliable, ensuring that subsequent regression analysis is based on robust measurement instruments.

Figure 2. Histogram Chart
Classical Assumption Test
Normality Test

The results of the normality test are as follows:

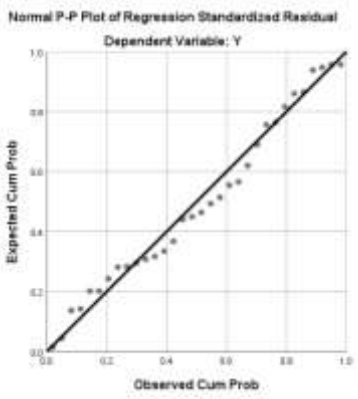


Source: Processed data, 2025 (Data Processed Using SPSS)

Based on Figure 2 above, it can be explained that the bell-shaped line does not deviate to the left or right. The results of this test show that the data is normally distributed.

SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

Figure 3. Normal P-Plot Graph



Source: Processed data, 2025 (Data Processed Using SPSS)

Based on Figure 3 above, it can be explained that the data is spread along a diagonal line. The results of this test show that the data is normally distributed.

Table 1. Normality Test Results

Unstandardized Residual	
N	32
Asymp. Sig. (2-tailed)c	200[c,d]

Source: Processed data, 2025 (Data Processed Using SPSS)

The Kolmogorov-Smirnov normality test was conducted and its results are presented in Table 1. The test yielded an asymptotic significance value of 0.200, which exceeds the standard alpha level of 0.05. Consequently, it can be inferred that the dataset adheres to a normal distribution.

Multicollinearity Test

The multicollinearity test is conducted to ensure that independent variables are not highly correlated, which could affect the accuracy of regression coefficient estimates.

The outcomes from the multicollinearity assessment are presented below:

Table 2. Multicollinearity Test Results

Model		Collinearity Statistic	
		Tolerance	VIF
1	(Constant)		
	Internal Control	0.497	2.011
	Management Transparency	0.497	2.011

a. Dependent Variable: Fraud Prevention

Source: Processed data, 2025 (Data Processed Using SPSS)

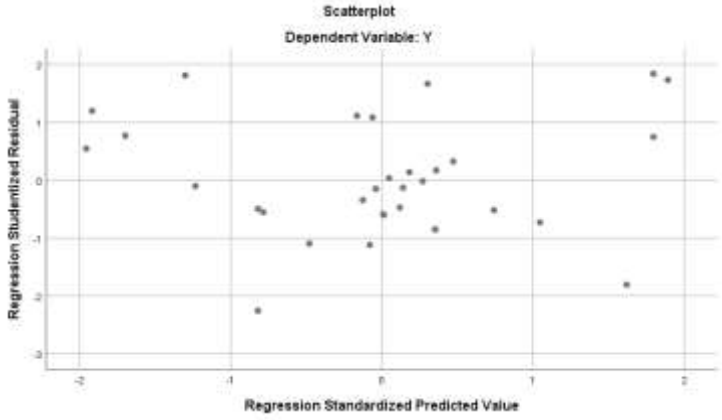
SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

The VIF value of 2.011 indicates a low correlation between independent variables, confirming that multicollinearity is not present. According to Ghozali (2018), VIF < 10 and Tolerance > 0.1 indicate the absence of significant multicollinearity.

Table 2 above shows that the correlation values for the Internal Control and Management Transparency variables have a tolerance value of 0.497 > 0.1 and a VIF value of 2.011 < 10. Thus, it can be concluded that the independent variables do not exhibit multicollinearity, ensuring the reliability of regression coefficients.

Figure 4. Scatterplot Graph
Heteroscedasticity Test

The results of the heteroscedasticity test are as follows:



Source: Processed data, 2025 (Data Processed Using SPSS)

Based on the scatterplot, the residuals appear to be randomly distributed around the zero line, indicating that heteroscedasticity is not present. As indicated in Figure 4, the data points are dispersed without a discernible pattern, both above and below the zero mark on the Y-axis. Consequently, it is reasonable to infer the absence of heteroscedasticity.

Multiple Linear Regression Analysis

The results of the multiple linear regression analysis produced the following equation:

Fraud Prevention = 6.135 + 0.220 Internal Control + 0.458 Management Transparency + e

The results of the regression analysis indicate that the baseline value of Fraud Prevention is 6.135 when Internal Control (X1) and Management Transparency (X2) are zero. A one-unit increase in Internal Control is associated with an increase of 0.220 in Fraud Prevention, while a one-unit increase in Management Transparency corresponds to an increase of 0.458, holding the other variable constant.

Use consistent academic phrasing: e.g., *"a one-unit increase in X1 is associated with an increase of 0.220 in Y, holding X2 constant.*

Determination Coefficient Test

An R^2 of 0.765 indicates that 76.5% of the variation in Fraud Prevention can be explained by Internal Control and Management Transparency, reflecting a strong predictive capability of the model (Ghozali, 2018). The remaining 23.5% may be influenced by other variables not included in the model.

t-test

The t-test results indicate that Internal Control (X1) has a t-value of 2.511 (p = 0.018), exceeding the critical t-value of 2.042, supporting H1. Management Transparency (X2) has a t-value of 4.845 (p = 0.000), also above the critical value, supporting H2. Both variables significantly influence Fraud Prevention at PT Sun Kaca Indonesia.

SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

Table 3. t-test Results

Model		t	Sig.
1	(Constant)	2.113	.043
	Internal Control	2.511	.018
	Management Transparency	4.845	.000

a. Dependent Variable: Fraud Prevention
Source: Processed data, 2025 (Data Processed Using SPSS)

Simultaneous Hypothesis Testing (F Test)
The F-test indicates that the regression model including Internal Control and Management Transparency significantly predicts Fraud Prevention ($F = 47.286$, $p < 0.001$), confirming that these variables collectively influence fraud prevention practices at PT Sun Kaca Indonesia.

Table 4. F Test Results

Model		F	Sig.
1	Regression	47.286	.000[b]

Source: Processed data, 2025 (Data Processed Using SPSS)

The F-test results show that the F-value is 47.286, which is greater than the F-table value of 3.33, with a significance level of 0.001 < 0.05. This proves that H3 is accepted, which states that internal control and management transparency affect fraud prevention at PT Sun Kaca Indonesia.

DISCUSSION

The Effect of Internal Control on Fraud Prevention

The statistical analysis, specifically the t-test, indicates that the internal control variable (X1) exerts a statistically significant positive influence on the fraud prevention variable (Y). The computed t-value of 2.511 surpasses the critical t-table value of 2.042, and the associated significance value of 0.001 is below the conventional threshold of 0.05. The t-test results indicate that Internal Control (X1) has a significant positive effect on Fraud Prevention (Y) at PT Sun Kaca Indonesia ($t = 2.511$, $p < 0.05$), supporting H1.

This result is in line with previous research by Ni Kadek Sandya Grahita et al., (2024) with the title "The Role of Accounting Information Systems, Internal Control, and Transparency in Fraud Prevention."

The Effect of Management Transparency on Fraud Prevention

Based on the t-test results, the effect of the management transparency variable (X2) on the fraud prevention variable (Y) has a t-value of 4.845 > t-table of 2.042 and a significance value of 0.001 < 0.05. Therefore, it can be concluded that H2 is accepted, which states that management transparency spatially has a positive and significant effect on fraud prevention at PT Sun Kaca Indonesia.

This result is in line with previous research by Utama et al., (2023) with the title "The Effect of Internal Control on Fraud Prevention with Transparency and Accountability as Intervening Variables".

The Effect of Internal Control and Management Transparency on Fraud Prevention

Based on the F test results, the internal control variable (X1) and management transparency variable (X2) have an Fcount value of 47.286 > Ftable of 3.33 with a significance of 0.001 < 0.05. Therefore, it can be concluded that H3

SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

is accepted, which states that internal control and management transparency have a positive and significant effect on fraud prevention at PT Sun Kaca Indonesia.

These results are in line with previous research by Ni Kadek Sandya Grahita et al., (2024)with the title "The Role of Accounting Information Systems, Internal Control, and Transparency in Fraud Prevention."

CONCLUSION

Based on the results of the analysis, this study concludes that both internal control (X1) and management transparency (X2) have a significant effect on fraud prevention (Y) in production costs. Internal control contributes to fraud prevention through the implementation of clear procedures, separation of duties, and a structured authorization system, all of which reduce opportunities for fraudulent behavior. Management transparency also positively influences fraud prevention, as the disclosure of information, clarity of organizational structure, and effective communication across management levels strengthen accountability and limit the potential for fraud.

When comparing the two variables, internal control demonstrates a stronger influence on fraud prevention than management transparency. This indicates that strict and well-functioning control mechanisms are more effective in detecting, preventing, and responding to early signs of fraud.

These findings imply that companies should prioritize strengthening internal control systems while simultaneously enhancing transparency practices. Improving both governance mechanisms will help reduce fraud risks, support operational efficiency, and reinforce organizational integrity.

REFERENCES

Arens, Elder, & Beasley. (2017). *Auditing and Assurance Services: An Integrated Approach (16th ed.)*. 360.

Association of Certified Fraud Examiners. (2022). *Occupational Fraud 2022: A Report to the Nations*.

Bushman, R. M., & Smith, A. J. (2001). Financial accounting information and corporate governance. *Journal of Accounting and Economics*, *32*(1–3), 237–333. https://doi.org/10.1016/S0165-4101(01)00027-1

Ni Kadek Sandya Grahita, Ni Putu Budiadnyani, I Nyoman Sunarta, & I.G.A. Desy Arlita. (2024). *Fakultas Ekonomi Dan Bisnis, Universitas Pendidikan Nasional* , *2*, 1–10.

OECD. (2004). *OECD Principles of Corporate Governance*. 20.

Prof. Dr. Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. 80–81.

The Committee of Sponsoring Organizations of the Treadway Commission. (2013). *Internal Control—Integrated Framework Executive Summary*. 5–9.

Utama, D. A., Sitawati, R., & Subchan, S. (2023). *Jurnal Riset Akuntansi Dan Keuangan*, *18*(2), 109. https://doi.org/10.21460/jrak.2022.182.423

SINERGITEK is licensed under an
Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)