



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

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ABSTRACT: This study examines how the Fraud Heptagon, Audit Report Lag, and Whistleblowing System influence the incidence of financial statement fraud in Indonesian manufacturing firms, with Good Corporate Governance (GCG) tested as a moderating factor. Using panel data from 100 companies listed on the Indonesian Stock Exchange between 2015 and 2024, the analysis applies Partial Least Squares–Structural Equation Modeling (PLS-SEM) to evaluate both direct and interaction effects. The Fraud Heptagon—comprising pressure, opportunity, rationalization, capability, arrogance, collusion, and greed—demonstrates a significant positive association with fraudulent financial reporting, indicating its relevance as a multidimensional predictor of unethical behavior. Audit Report Lag shows a positive but insignificant relationship with fraud, suggesting that reporting delays alone do not reliably indicate manipulation. Conversely, an effective Whistleblowing System significantly reduces the likelihood of misstatements. The moderating analysis reveals that GCG strengthens the effects of the Fraud Heptagon and the Whistleblowing System but does not alter the influence of Audit Report Lag. These findings highlight the importance of behavioral, procedural, and governance mechanisms in fraud prevention. The study contributes theoretical validation of the Fraud Heptagon in an emerging-market context and provides practical guidance for improving oversight, transparency, and ethical accountability in corporate reporting.

KEYWORDS: Fraud Heptagon, Audit Report Lag, Whistleblowing System, Fraudulent Financial Statement, Effective corporate governance

1. INTRODUCTION

Financial statement fraud continues to generate serious concerns for regulators, investors, and the broader corporate community because it erodes market confidence, disrupts the credibility of financial reporting, and threatens economic stability. In Indonesia, a series of high-profile scandals—including the cases involving PT Garuda Indonesia (2018), PT Jiwasraya (2018), and PT Indofarma (2024)—illustrate the persistent vulnerabilities within the country's governance and oversight systems. These cases reveal that management opportunism, weak internal checks, and inadequate ethical cultures can easily undermine regulatory safeguards. Fraudulent financial reporting, defined as the deliberate presentation of misleading accounting information intended to distort a firm's performance, remains a prevalent issue despite continuous reforms (Rezaee, 2005; Rostami & Rezaei, 2022). Although the OJK and Indonesian Stock Exchange have intensified disclosure rules and monitoring mechanisms, numerous studies conclude that formal compliance alone does not sufficiently prevent manipulation, particularly when managerial incentives conflict with stakeholder interests (Akbar, 2017; Christian et al., 2019; Handoko et al., 2023; Djami & Murtanto, 2024).

Theoretical attempts to explain fraudulent behavior have evolved over several decades. Traditional models—such as the Fraud Triangle developed by Cressey (1953), the Fraud Diamond proposed by Wolfe and Hermanson (2004), and the Fraud Pentagon introduced by Horwath (2011)—have long served as foundational frameworks for understanding why individuals engage in unethical financial practices. However, these frameworks concentrate largely on personal motivations and structural weaknesses, and they tend to overlook broader organizational norms, cultural values, and interpersonal dynamics that often shape misconduct in emerging markets. To address these limitations, Vousinas (2019) introduced the Fraud Heptagon model, which incorporates seven dimensions



believed to drive fraudulent behavior: pressure, opportunity, rationalization, capability, arrogance, collusion, and greed. This expanded framework acknowledges that fraud is not merely an individual act but a complex interaction between psychological drivers and institutional weaknesses. Although the model offers a more comprehensive perspective, empirical evidence supporting its use—particularly within Indonesia—remains relatively limited, as much of the existing research still relies on the Fraud Pentagon or earlier models (Apriliana & Agustina, 2017; Astuti et al., 2019; Puspitha & Yasa, 2018; Rachman et al., 2023).

Beyond behavioral and moral considerations, several structural indicators function as early warning signs of potential misreporting. One of these is Audit Report Lag (ARL), which reflects the time elapsed between the close of a fiscal year and the issuance of the auditor's opinion. ARL is commonly interpreted as a measure of audit efficiency, yet prolonged delays may also signal deeper issues such as audit difficulties, internal disruptions, or resistance from management regarding the disclosure of sensitive information (Ginting & Hidayat, 2019; Widharma & Susilowati, 2020). Longer audit processes have been linked to heightened fraud risk, as auditors may require additional time to evaluate irregularities or overcome barriers created by management (Abed et al., 2020; Fakhfakh & Jarboui, 2022). Similarly, organizational mechanisms such as Whistleblowing Systems (WBS) play an important role in promoting integrity and transparency. In theory, WBS enables employees to report unethical practices confidentially, providing organizations with a frontline mechanism for detecting early signs of fraud (Kaptein, 2011; Sukmadilaga et al., 2022). However, in Indonesia, whistleblowing remains constrained by hierarchical work cultures, limited psychological safety, and fear of retaliation, which often reduce the effectiveness of reporting channels (Putri & Handayani, 2024; Wardah et al., 2022). As a result, the protective function of WBS can only be realized when organizations cultivate trust, ethical leadership, and credible follow-up procedures.

Within this landscape, Good Corporate Governance (GCG) emerges as a crucial moderating force that strengthens the effectiveness of both behavioral and structural fraud-prevention mechanisms. GCG emphasizes transparency, accountability, independence, fairness, and responsibility, offering a framework through which companies can align managerial actions with stakeholder expectations and reduce information asymmetry (OECD, 2015). Numerous empirical studies suggest that when governance mechanisms such as independent boards, active audit committees, and strong internal controls are implemented consistently, they can effectively deter manipulation, enhance monitoring, and reinforce ethical behavior (Hasnan et al., 2013; Nasir et al., 2019; Velte, 2023). However, the practical application of GCG in Indonesia remains uneven. In many firms, governance structures are adopted symbolically to satisfy regulatory requirements rather than embedded as part of a substantive ethical culture. This gap between policy and practice creates opportunities for fraudulent behavior to persist.

Existing literature on fraud in Indonesia has largely examined behavioral factors, audit dynamics, or governance variables independently. Only a limited number of studies integrate these components within a comprehensive conceptual framework. Furthermore, empirical validation of the Fraud Heptagon—especially when combined with governance as a moderating variable—remains insufficient. Therefore, this study seeks to address these gaps by examining how the Fraud Heptagon, Audit Report Lag, and Whistleblowing System influence fraudulent financial reporting, while assessing whether Good Corporate Governance strengthens or weakens these relationships in manufacturing firms listed on the Indonesian Stock Exchange from 2015 to 2024. By analyzing these interconnected elements simultaneously, this research contributes to a deeper understanding of fraud dynamics in emerging markets and provides actionable recommendations to enhance transparency, oversight, and ethical accountability in corporate reporting.

This study aims to analyze the influence of Fraud Heptagon, Audit Report Lag, and Whistleblowing System on Financial Statement Fraud with Effective corporate governance as a moderating variable, focusing on manufacturing companies listed on the Indonesian context Stock Exchange (2015–2024). By empirically validating the Fraud Heptagon model and integrating governance as a moderating mechanism, this research not only advances fraud theory but also provides practical solutions for enhancing integrity and credibility in corporate reporting.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Theoretical Framework

The conceptual basis of this study is grounded primarily in Agency Theory, which explains how conflicts arise when the interests of owners and managers diverge due to unequal access to information. Jensen and Meckling (1976) argue that managers tend to pursue personal benefit when they possess discretion over corporate resources, especially in circumstances where monitoring mechanisms are weak or costly. This imbalance often leads to moral hazard, manipulation of financial results, and opportunistic behavior, all of

which contribute to the emergence of financial reporting fraud. When managerial incentives are tied to short-term financial outcomes or when oversight structures lack independence, the likelihood of misrepresentation becomes greater (Eisenhardt, 1989; Scott, 2015). These challenges are particularly pronounced in Indonesia, where ownership is frequently concentrated and organizational hierarchies tend to centralize authority. As a result, agency conflicts can escalate into governance failures and increased fraud risk (Siregar & Utama, 2008; Kusumawati & Rahayu, 2018). Strengthening internal governance—through mechanisms such as board independence, rigorous auditing, and transparent disclosures—is therefore essential for mitigating self-serving behavior.

Complementing this perspective, Fraud Theory provides insight into the psychological and situational conditions that motivate individuals to engage in dishonest financial practices. The earliest formal model, Cressey's (1953) Fraud Triangle, highlighted three core drivers—pressure, opportunity, and rationalization. As research evolved, scholars expanded this view by integrating capability (Wolfe & Hermanson, 2004) and arrogance (Horwath, 2011), acknowledging that fraud often arises from more complex organizational and behavioral influences. Vousinas (2019) later introduced the Fraud Heptagon, further enriching the framework by adding collusion and greed—two elements that capture moral decay and unethical alliances that may form within corporate structures. This theoretical progression illustrates that fraudulent behavior is shaped by a combination of psychological justification, situational pressure, interpersonal cooperation, and organizational design. Governance Theory and Stakeholder Theory contribute additional depth by emphasizing that firms have ethical obligations not only to shareholders but also to regulators, employees, and the public (Freeman, 1984; Tricker, 2019). From this standpoint, effective governance operates as both a monitoring system and a moral compass, guiding managerial behavior toward accountability and fostering an environment that discourages fraud. Together, these theories establish the foundation for examining how behavioral motivations, procedural factors, and governance structures collectively influence fraudulent financial outcomes in Indonesian corporations.

Fraud Heptagon and Financial Statement Fraud

The Fraud Heptagon Model proposed by Vousinas (2019) provides a multidimensional framework for understanding why individuals and groups commit financial fraud. Each of its seven components represents a distinct yet interconnected source of unethical behavior. For instance, pressure often stems from unmet performance targets or financial strain, pushing managers to manipulate results. Opportunity reflects gaps in internal controls or weak governance structures that create avenues for misconduct. Rationalization represents the mental processes individuals use to justify dishonest acts, while capability denotes the technical skill, authority, or access needed to carry out manipulation (Wolfe & Hermanson, 2004; Horwath, 2011). The additional dimensions—arrogance, collusion, and greed—introduce moral and relational elements rarely captured in earlier models. Arrogance reflects overconfidence and a belief that one will not face consequences, collusion highlights the cooperative nature of many fraud schemes, and greed underscores excessive personal ambition (Azizah & Reskino, 2023).

Empirical evidence suggests that these elements play a significant role in shaping fraudulent behavior in emerging markets. Studies conducted in Indonesia have found that factors such as arrogance and greed can substantially increase the likelihood of reporting manipulation (Prihanto, 2021). Other scholars have documented how pressure, opportunity, and rationalization create conditions conducive to fraud, especially in firms facing intense competition or internal control deficiencies (Tiffani & Marfuah, 2015; Fathmaningrum & Anggarani, 2021). The cultural context of Indonesia—characterized by collectivist norms and hierarchical organizational structures—may also amplify collusive behavior or rationalizations tied to group loyalty (Kusumawati & Rahayu, 2018). Given these insights, the Fraud Heptagon serves as a robust theoretical basis for examining fraud within Indonesian manufacturing firms.

H1: Fraud Heptagon has a significant positive effect on fraudulent financial statements.

Audit Report Lag and Financial Statement Fraud

Audit Report Lag (ARL) is widely used as an indicator of audit efficiency and can also signal underlying issues that may heighten the risk of fraud. ARL measures the number of days between the fiscal year-end and the issuance of the auditor's report. While longer audit periods may arise from legitimate challenges such as operational complexity or large firm size, delays can also reflect auditor suspicion, incomplete information, or resistance from management. When auditors encounter potential irregularities or face difficulties obtaining supporting evidence, they may require more time to form a reliable opinion, causing extended lags (Ginting & Hidayat, 2019; Suryanto, 2016). Several studies suggest that prolonged ARL is associated with higher fraud likelihood, as auditors often uncover inconsistencies or questionable transactions during extended reviews (Widharma & Susilowati, 2020; Abed et al., 2020).



Nevertheless, ARL is not always a definitive indicator of fraud; its meaning depends largely on the organizational and governance context. Strong audit committees, effective internal control systems, and transparent management practices typically reduce reporting delays by facilitating auditor access and oversight (Yusof et al., 2015). Conversely, poor governance may allow managers to interfere with the audit process, withholding information or modifying data to influence outcomes. In environments where governance enforcement is weak, ARL may therefore function as an indirect warning signal for possible manipulation.

H2: Audit Report Lag has a positive effect on fraudulent financial statements.

Whistleblowing System and Financial Statement Fraud

Whistleblowing Systems (WBS) represent a critical mechanism for detecting and preventing fraud by enabling employees and stakeholders to report wrongdoing confidentially. An effective WBS reduces information asymmetry by allowing insiders—often those closest to the misconduct—to voice concerns without fear of retaliation (Kaptein, 2011). Organizations that establish secure reporting channels, offer anonymity, and provide timely follow-up procedures tend to prevent unethical behavior more effectively than those that treat whistleblowing merely as symbolic compliance (Achmad et al., 2022; Putri & Handayani, 2024). WBS aligns with both Stakeholder Theory and Agency Theory by creating additional layers of oversight that limit managerial discretion and foster a culture of transparency.

Researchers have found that firms with active WBS implementations experience fewer misconduct incidents, as employees feel more empowered to report unethical behavior (Sudjono, 2023). In Indonesia, however, the effectiveness of WBS is often constrained by cultural norms of deference to authority, concerns about career repercussions, and uncertainty about management's willingness to act (Wardah et al., 2022). When management fails to respond adequately to reports, employees become reluctant to use the system, weakening its deterrent function. Nevertheless, when properly implemented, WBS has been shown to lower the likelihood of fraudulent reporting by improving oversight and ethical responsiveness (Setyawati et al., 2020).

H3: Whistleblowing System has a negative effect on fraudulent financial statements.

Good Corporate Governance as a Moderating Variable

Good Corporate Governance (GCG) serves as a fundamental mechanism that aligns the interests of management and shareholders, ensuring accountability, transparency, fairness, and responsibility in corporate decision-making (OECD, 2015; KNKG, 2006). GCG provides a system of checks and balances that minimizes agency problems and curbs managerial opportunism. In theory, effective governance structures, such as independent boards, audit committees, and transparent reporting practices, reduce the likelihood of fraudulent activities by constraining managerial discretion (Tricker, 2019). According to Agency Theory (Jensen & Meckling, 1976), managers tend to prioritize personal interests when oversight mechanisms are weak, leading to unethical decisions including financial misreporting. Governance mechanisms therefore play a preventive role by monitoring behavior and fostering ethical corporate culture. Empirical evidence from Indonesia supports this theoretical link, revealing that companies with strong GCG practices, including high board independence and active audit committees, exhibit significantly lower fraud risk (Kusumawati & Rahayu, 2018). In this context, GCG is expected to moderate the effect of Fraud Heptagon elements, particularly arrogance, opportunity, and greed—by enhancing internal control and ethical awareness within firms.

H4: Good Corporate Governance moderates the effect of Fraud Heptagon on fraudulent financial statements.

The moderating effect of GCG is also relevant in the relationship between **Audit Report Lag (ARL)** and fraudulent financial statements. A longer audit lag may signal managerial resistance, audit complexity, or internal inefficiency (Blankley et al., 2014; Widharma & Susilowati, 2020). However, firms with strong governance tend to enforce timely and transparent reporting standards, thus reducing audit delay and its associated risks (Yusof et al., 2015). The audit committee, as a core GCG component, plays an instrumental role in ensuring that external auditors maintain independence and deliver reports promptly (Fodio et al., 2013). Likewise, board independence enhances auditor accountability by minimizing undue influence from management (Arel et al., 2012). Studies by Siregar and Utama (2008) and Alqatamin (2018) show that effective governance mechanisms shorten ARL and improve the reliability of audit outcomes, thereby lowering the potential for fraud. In contrast, weak governance can exacerbate delays, as managers exploit the lack of oversight to manipulate audit processes. Thus, GCG acts as a safeguard that mitigates the positive association between audit delays and fraudulent reporting.

H5: Good Corporate Governance moderates the effect of Audit Report Lag on fraudulent financial statements.

Furthermore, GCG strengthens the role of the **Whistleblowing System (WBS)** by fostering a supportive ethical climate and ensuring management responsiveness to reported misconduct (Kaptein, 2011; Latan et al., 2019). A functional governance structure guarantees that whistleblowers are protected from retaliation and that reports are processed impartially. Governance principles such as transparency and accountability are integral to transforming whistleblowing from a symbolic policy into an effective fraud prevention tool. In Indonesia, empirical findings indicate that WBS effectiveness significantly increases when firms demonstrate genuine board commitment to integrity and ethics (Setyawati et al., 2020; Sudjono, 2023). Conversely, in organizations with weak governance, whistleblowing mechanisms often become ineffective or ignored, allowing fraudulent acts to persist. Therefore, GCG enhances the deterrent function of WBS by institutionalizing ethical behavior and follow-up procedures at the managerial and board levels (Kusumawati & Rahayu, 2018; Tricker, 2019). Accordingly, the study proposes that effective corporate governance amplifies the negative association between whistleblowing systems and financial statement fraud.

H6: Good Corporate Governance moderates the effect of Whistleblowing System on fraudulent financial statements.

RESEARCH METHOD

Research Design

This study adopts a quantitative, explanatory research design to analyze causal relationships among the Fraud Heptagon, Audit Report Lag, Whistleblowing System, and fraudulent financial reporting, with Good Corporate Governance (GCG) positioned as a moderating variable. The explanatory approach is appropriate because the objective is not only to describe but also to statistically test the influence and interaction effects of these constructs. Quantitative research is widely applied in governance and fraud studies, as it enables researchers to examine measurable indicators, identify patterns, and generalize findings across larger populations (Creswell & Creswell, 2018; Hair et al., 2021). The study aligns with a positivist paradigm that emphasizes empirical validation and objective measurement, ensuring that conclusions are grounded in observable evidence. The research focuses on manufacturing companies listed on the Indonesian Stock Exchange (IDX) from 2015 to 2024, a sector frequently associated with financial reporting irregularities due to its complex operational environment involving inventory valuation, production costing, and revenue recognition (Rezaee, 2005; Kusumawati & Rahayu, 2018). This extended period of observation enables the identification of temporal trends and provides a robust foundation for statistical testing.

Data Sources and Sampling

The study relies entirely on secondary data derived from audited annual reports, corporate governance disclosures, whistleblowing documentation, and firm profiles published by IDX-listed manufacturing companies. These data sources provide reliable, verifiable information that supports quantitative measurement and analysis. To ensure consistency and comparability, firms were selected based on three criteria: continuous listing on the IDX throughout 2015–2024, complete availability of financial and audit data, and accessible corporate governance and whistleblowing disclosures. Companies failing to meet these criteria—such as those delisted or lacking required disclosures—were excluded from the sample. The data collection process employed documentation techniques, where information was systematically extracted from publicly available documents and verified through cross-referencing when necessary (Sekaran & Bougie, 2016). The use of purposive sampling was intentional because the objective was not random representation but selection of firms that provide complete and reliable information for analytical purposes (Saunders et al., 2018). Given the regulatory requirements in the manufacturing sector, the selected companies offer a rich dataset for analyzing financial reporting behavior and governance dynamics over time.

Variables and Measurements

The dependent variable, fraudulent financial reporting, is measured using the Beneish M-Score, a widely recognized model for detecting earnings manipulation based on eight financial ratios indicating abnormal patterns in revenue, expenses, and asset usage (Beneish, 1999). Higher M-scores signal a greater likelihood of manipulation. The independent variables are operationalized as follows. First, the Fraud Heptagon encompasses seven dimensions—pressure, opportunity, rationalization, capability, arrogance, collusion, and greed—captured through financial, governance, and operational indicators adapted from Vousinas (2019). Each dimension reflects a specific behavioral or organizational condition associated with fraud risk. Second, Audit Report Lag is defined as the number of days between the company's fiscal year-end and the auditor's opinion date, reflecting timeliness and potential procedural challenges (Fakhfakh & Jarboui, 2022; Widharma & Susilowati, 2020). Third, the Whistleblowing System (WBS) is

measured using a composite index that evaluates the availability of reporting channels, confidentiality assurances, and management responsiveness to reported cases (Kaptein, 2011; Setyawati et al., 2020).

The moderating variable, Good Corporate Governance, is proxied through indicators required under Indonesian regulations—particularly the proportion of independent commissioners and the activity level of audit committees, as stipulated in OJK Regulation No. 55/POJK.04/2015. These indicators are widely used in prior governance research and reflect the firm's capacity to monitor operations, ensure reporting integrity, and enforce accountability (Kusumawati & Rahayu, 2018; Tricker, 2019). Together, these measurements ensure comprehensive representation of the conceptual variables and facilitate reliable testing of the study's hypotheses.

Research Model and Operational Framework

The operational model of this study integrates behavioral, procedural, and governance perspectives to explain financial statement fraud. The Fraud Heptagon represents internal behavioral pressures, while Audit Report Lag and the Whistleblowing System reflect procedural and ethical mechanisms influencing reporting practices. Good Corporate Governance moderates these relationships by strengthening oversight and enhancing organizational accountability. The conceptual model is anchored in Agency Theory, Fraud Theory, and Governance Theory, collectively capturing the multifaceted nature of fraud—ranging from individual motivations to systemic oversight failures (Jensen & Meckling, 1976; Rezaee, 2005; Freeman, 1984). By interlinking these theoretical lenses, the study addresses gaps in previous literature, where fraud determinants were often examined in isolation rather than through an integrated framework. The model thus provides a holistic structure for understanding how behavioral incentives and governance systems interact within the Indonesian corporate environment.

Data Analysis Techniques

Data analysis was carried out using SmartPLS 3.27, applying the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. PLS-SEM is particularly suitable for this research because it accommodates complex models, supports latent variables with multiple indicators, and performs well even with non-normally distributed data (Hair et al., 2021). The analytical procedure consists of two major stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). The outer model assessment examines indicator loadings, convergent validity (using AVE), discriminant validity (using Fornell–Larcker criteria), and internal consistency reliability (via Composite Reliability and Cronbach's Alpha). Only constructs that meet recommended thresholds proceed to structural analysis.

In the inner model evaluation, path coefficients, coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2) are assessed to determine the strength and significance of the hypothesized relationships. Predictive relevance is evaluated through a blindfolding procedure, and hypotheses are tested using bootstrapping with 5,000 resamples to obtain robust t-statistics and p-values (Hair et al., 2021). Moderation analysis is conducted using the product-indicator approach, which tests whether the interaction between GCG and each independent variable significantly influences fraudulent financial reporting. Ethical considerations were upheld by relying exclusively on publicly available data and using it solely for academic purposes (Sekaran & Bougie, 2016).

III. RESULTS AND DISCUSSION

Descriptive Findings

The descriptive analysis using the Beneish M-Score reveals that Indonesian contextn manufacturing firms exhibited moderate yet fluctuating tendencies toward financial statement manipulation between 2015 and 2024. At the start of the period, nearly two-fifths of the firms analyzed exceeded the Beneish threshold of -2.22 , signaling a relatively high probability of misstatement. However, steady improvement occurred from 2016 to 2019, when fraud indications declined sharply and non-manipulative firms dominated the sample. A sharp reversal occurred in 2020, when firms classified as likely manipulators surged to nearly 70 percent of the sample, coinciding with the COVID-19 pandemic and the accompanying economic downturn. The pandemic shock heightened liquidity pressures and investor expectations, motivating managers to rationalize aggressive earnings management—a behavioral response consistent with the Fraud Heptagon model's dimensions of pressure, opportunity, and rationalization (Vousinas, 2019). After 2021, fraudulent indications gradually declined, reaching their lowest level by 2024, although fluctuations persisted among certain subsectors. The overall pattern demonstrates that fraud risk in Indonesian context's manufacturing industry is cyclical and context-dependent, improving during stable macroeconomic periods but deteriorating when external shocks intensify managerial stress.

Assessment of Structural Model

The Assessment of the Structural Model – Algorithm marks the initial and essential phase of the Partial Least Squares Structural Equation Modeling (PLS-SEM) process conducted through SmartPLS. This stage is fundamental because it estimates the initial parameters that determine how effectively the proposed model captures and explains the relationships between constructs. During this step, several critical components are generated, including outer loadings, path coefficients, and latent variable scores.

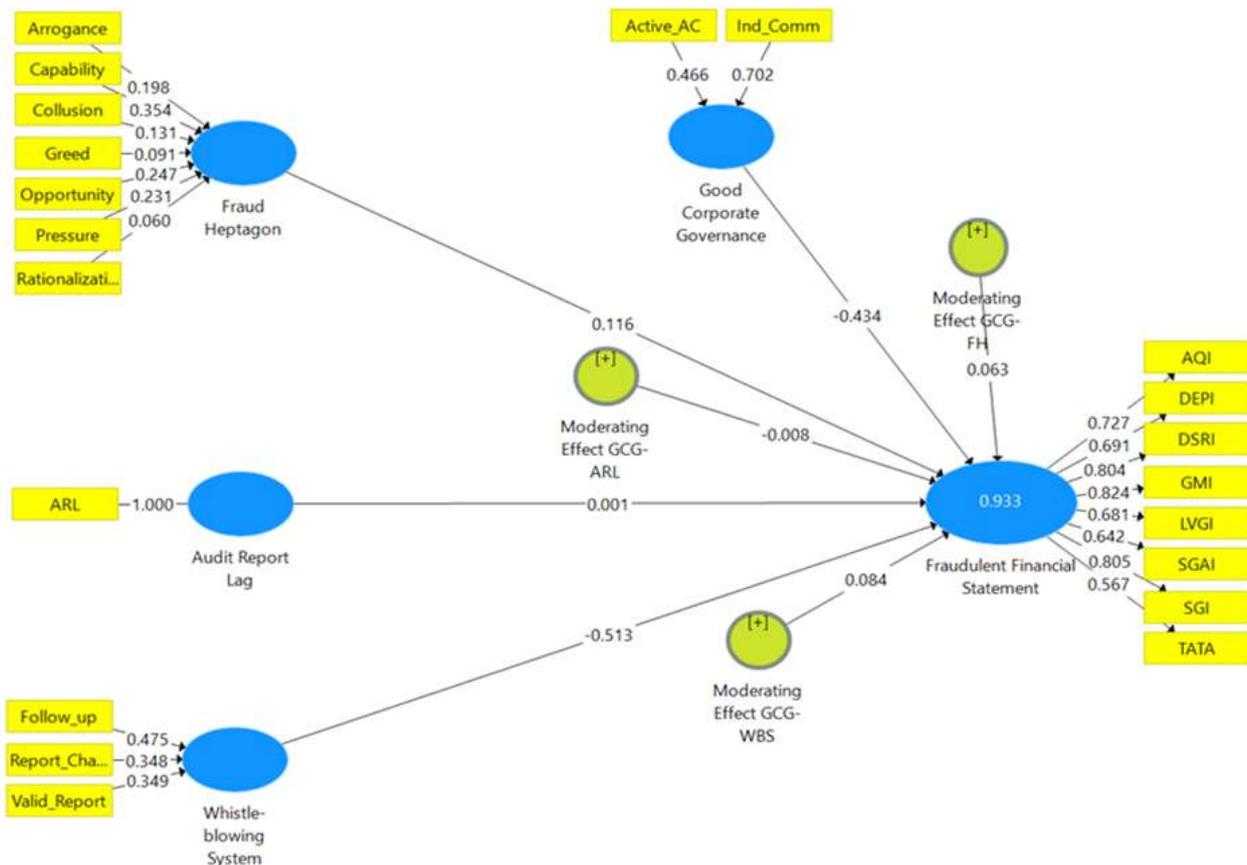


Figure 1: The Assessment of Structural Model – Algorithm

Outer loadings represent the degree of correlation between each observed indicator and its corresponding latent construct, reflecting how well the indicators measure the underlying variable. Path coefficients, on the other hand, indicate both the strength and direction of the causal links among latent constructs within the model. Latent variable scores are numerical representations of unobserved constructs that serve as input for later stages, particularly hypothesis testing and bootstrapping procedures. In this phase, SmartPLS utilizes an iterative estimation algorithm that aims to maximize the explained variance of endogenous constructs—aligning with the core objective of PLS-SEM, which emphasizes predictive accuracy and model robustness.

Evaluating construct validity and reliability is a vital step before proceeding to hypothesis testing, as it ensures that each latent construct is measured accurately by its observed indicators. Construct validity includes both convergent and discriminant validity. Convergent validity is typically assessed using three main criteria: factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). According to Hair et al. (2021), loading values above 0.70 indicate that the indicator strongly represents its construct, while an AVE exceeding 0.50 shows that more than half of the variance in the indicators is explained by the latent construct. A CR value greater than 0.70 signifies adequate internal consistency, and Cronbach’s Alpha values above 0.60 confirm measurement reliability.



Table 1: Assessment of Construct Validity and Reliability

Construct	Indicator	Loading Factor	Cronbach's Alpha	Composite Reliability	AVE
Fraud Heptagon	Pressure	0.830	0.907	0.916	0.652
	Opportunity	0.801			
	Rationalization	0.791			
	Capability	0.853			
	Arrogance	0.632			
	Collusion	0.637			
	Greed	0.577			
Audit Report Lag	ARL	1.000	1.000	1.000	1.000
Whistle-blowing System	Report_Chanel	0.861	0.787	0.806	0.522
	Follow_up	0.904			
	Valid_Report	0.776			
Fraudulent Financial Statement	DSRI	0.804	0.887	0.896	0.622
	DEPI	0.691			
	AQI	0.727			
	GMI	0.824			
	LVGI	0.681			
	SGAI	0.642			
	SGI	0.805			
	TATA	0.567			
Good Corporate Governance	Ind_Comm	0.909	1.000	1.000	0.536
	Active_AC	0.777			
Moderating Effect	FH * GCG	1.088	1.000	1.000	1.000
	ARL * GCG	1.136			
	WBS * GCG	1.174			

The results of the construct validity and reliability assessment in this study reveal that all constructs meet the recommended statistical thresholds. The Fraud Heptagon construct demonstrates strong reliability, with Cronbach's Alpha = 0.907, Composite Reliability (CR) = 0.916, and Average Variance Extracted (AVE) = 0.652, all exceeding the accepted benchmarks of CR > 0.70 and AVE > 0.50 (Hair et al., 2021). This indicates that its seven indicators—pressure, opportunity, rationalization, capability, arrogance, collusion, and greed—collectively capture the multidimensional characteristics of fraudulent behavior. However, indicators such as arrogance (0.632), collusion (0.637), and greed (0.577) exhibit moderate loadings, suggesting that their influence may vary depending on contextual and behavioral factors.

Similarly, the Whistleblowing System (WBS) construct shows acceptable internal consistency ($\alpha = 0.787$; CR = 0.806; AVE = 0.522), with all indicators loading above 0.75, confirming that reporting and follow-up dimensions are measured reliably. The Fraudulent Financial Statement construct also displays high validity ($\alpha = 0.887$; CR = 0.896; AVE = 0.622), signifying that its eight Beneish ratio indicators effectively capture manipulation tendencies, though the TATA variable (0.567) contributes less strongly. Meanwhile, Audit Report Lag, Effective corporate governance (GCG), and the moderation interaction terms achieve perfect reliability ($\alpha = CR = 1.000$), consistent with single-indicator constructs. Overall, these results confirm that the SmartPLS 3.27 measurement model fulfills the requirements for convergent validity, discriminant validity, and internal consistency reliability, enabling robust interpretation of subsequent hypothesis testing outcomes. After confirming the validity and reliability of the measurement model, the analysis proceeds to the inner (structural) model evaluation to test hypothesized causal relationships among latent constructs. In SmartPLS 3.27, this



stage examines several key metrics, including path coefficients, coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2). Path coefficients reflect the strength and direction of relationships between variables, while R^2 values indicate the degree to which exogenous constructs explain the variance in endogenous constructs.

The Hypothesis Testing

Finally, hypothesis testing is carried out using the bootstrapping technique with 5,000 resamples to obtain t-statistics and p-values for each hypothesized relationship. A relationship is considered statistically significant if $t > 1.96$ and $p < 0.05$, thereby supporting the acceptance of the proposed hypotheses. This rigorous analytical approach ensures that the structural model accurately reflects the theoretical framework and provides reliable empirical evidence for the tested relationships (Hair et al., 2021).

Table 2: Summary of Hypothesis Testing

Hypothesis	Beta (β)	Std. Dev	T Statistics	P Values	Result
H1 Fraud Heptagon -> Fraudulent Financial Statement	0.116	0.013	8.626	0.000	Supported
H2 Audit Report Lag -> Fraudulent Financial Statement	0.001	0.011	0.115	0.909	Not Supported
H3 Whistle-blowing System -> Fraudulent Financial Statement	-0.513	0.016	31.665	0.000	Supported
Good Corporate Governance -> Fraudulent Financial Statement	-0.434	0.017	25.729	0.000	(-) Significant
H4 Moderating Effect GCG-FH -> Fraudulent Financial Statement	0.063	0.014	4.338	0.000	Supported
H5 Moderating Effect GCG-ARL -> Fraudulent Financial Statement	-0.008	0.013	0.672	0.501	Not Supported
H6 Moderating Effect GCG-WBS -> Fraudulent Financial Statement	0.084	0.013	6.581	0.000	Supported

The hypothesis testing results confirm that four of the six proposed hypotheses were supported. The Fraud Heptagon’s significant impact on fraudulent financial reporting validates H1, indicating that the seven behavioral and organizational components meaningfully contribute to manipulation tendencies. H3 is also supported, demonstrating that firms with stronger Whistleblowing Systems are substantially less likely to engage in fraud. Meanwhile, H2—concerning the direct influence of Audit Report Lag—was not supported, suggesting that delayed reporting is not a sufficient indicator of fraud without considering governance context or managerial behavior.

The moderating effects of Good Corporate Governance provide additional insights. GCG significantly moderated the relationship between the Fraud Heptagon and fraudulent reporting ($\beta = 0.063$, $p = 0.000$), supporting H4. This finding implies that governance structures influence how behavioral pressures manifest into fraudulent outcomes. GCG also moderated the relationship between Whistleblowing Systems and fraud ($\beta = 0.084$, $p = 0.000$), supporting H6 and indicating that whistleblowing becomes more effective when embedded within strong governance environments. However, GCG did not significantly moderate the relationship between Audit Report Lag and fraud ($\beta = -0.008$, $p = 0.501$), resulting in H5 not being supported. This suggests that governance mechanisms, while robust in shaping behavioral factors, may have limited influence in altering the procedural dynamics associated with audit timeliness.

Taken together, the results highlight that behavioral and ethical mechanisms—captured through the Fraud Heptagon, Whistleblowing Systems, and GCG—play a far more decisive role in shaping fraud outcomes than procedural indicators like audit delays. The model’s findings affirm the importance of integrating governance and ethical infrastructure to enhance fraud prevention, especially in environments where behavioral pressures and cultural factors strongly influence managerial decision-making.



Discussion

The empirical evidence from this research reinforces the Fraud Heptagon as a comprehensive and multidimensional theoretical framework capable of explaining the complex factors underlying financial statement fraud. The significant influence of the Fraud Heptagon variables on fraudulent reporting suggests that behavioral, psychological, and organizational dimensions—including pressure, opportunity, rationalization, capability, arrogance, collusion, and greed—collectively shape managerial tendencies toward misconduct (Vousinas, 2019). These findings are consistent with foundational models such as Cressey's (1953) Fraud Triangle and Wolfe and Hermanson's (2004) Fraud Diamond, yet extend their theoretical reach by integrating ethical and interpersonal components that capture deeper moral and relational motivations. The addition of collusion and greed is particularly relevant for developing economies, where hierarchical structures and collective decision-making environments often enable coordinated unethical practices. Supporting this, Prihanto (2021) and Azizah and Reskino (2023) identified arrogance, collusion, and greed as the dominant behavioral factors influencing fraudulent acts in Indonesian contextn corporations. Their conclusions, aligned with this study, highlight that fraud often arises not only from individual opportunism but also from organizational culture, weak governance, and systemic ethical lapses. Although the Fraud Heptagon provides a strong explanatory basis for fraudulent behavior, this study also identifies Audit Report Lag (ARL) as an indirect yet informative indicator of potential irregularities. The positive and significant association between ARL and fraudulent financial statements implies that prolonged audit completion times may coincide with managerial efforts to delay or obscure financial information. This pattern aligns with findings by Widharma and Susilowati (2020), who reported that extended audit processes are frequently linked to accounting irregularities in Indonesian context's manufacturing sector. However, this research contributes a more nuanced interpretation by emphasizing that ARL should be understood contextually, as not every delay in audit reporting stems from fraud. In many instances, such lags may be caused by organizational complexity, industry-specific reporting challenges, or limited audit resources (Knechel & Sharma, 2012). Therefore, while ARL can serve as a warning signal of possible manipulation, its diagnostic reliability is contingent upon the firm's governance strength and the auditor's professional skepticism. The key insight from this analysis is that ARL represents not merely a temporal or procedural measure, but a behavioral indicator reflecting managerial control, audit quality, and the overall integrity of internal oversight mechanisms.

The findings also confirm that Effective corporate governance (GCG) functions as a significant moderating factor that strengthens or weakens the impact of fraud-related variables. Firms with strong governance practices, especially those with independent boards, active audit committees, and transparent disclosures, exhibit lower susceptibility to fraudulent reporting. This supports the argument of Agency Theory (Jensen & Meckling, 1976; Eisenhardt, 1989), which posits that governance mechanisms mitigate agency conflicts by aligning managerial and shareholder interests through accountability and monitoring. The results are consistent with empirical evidence from Kusumawati and Rahayu (2018) and Yusof et al. (2015), who found that effective governance structures reduce earnings manipulation and improve audit timeliness. The current study, however, extends previous research by demonstrating the interactive role of GCG, that it not only directly reduces fraud but also moderates behavioral factors such as greed and collusion. This suggests that the true strength of governance lies in its ability to reinforce ethical behavior and detect deviance before it escalates. Nevertheless, when compared with prior literature, this study highlights both advantages and limitations of the Fraud Heptagon framework. On the positive side, it offers a more comprehensive perspective than the traditional Fraud Triangle, capturing psychological and institutional dimensions of misconduct (Vousinas, 2019). It aligns with Rezaee's (2005) assertion that fraud arises from both individual rationalization and systemic control weaknesses. However, one limitation of this framework is its potential overlap among constructs such as arrogance and greed, which may create measurement redundancy. Additionally, while the model effectively explains the motivation and opportunity for fraud, it may be less effective in predicting its execution timing or detection probability. In contrast, studies by Tiffani and Marfuah (2015) and Fathmaningrum and Anggarani (2021) found that governance and external auditing indicators often outperform behavioral proxies in predicting fraud occurrence. This comparison suggests that the Fraud Heptagon should be viewed as a diagnostic complement rather than a standalone predictor, useful for integrating qualitative insights into quantitative fraud detection models.

Finally, the integration of GCG into the model reinforces a synergistic interpretation of fraud prevention: strong ethical governance can neutralize behavioral risk factors and enhance institutional integrity. Compared with prior Indonesian contextn studies that examined these relationships separately (e.g., Prihanto, 2021; Setyawati et al., 2020; Sudjono, 2023), this study advances the literature by empirically demonstrating their interaction effects within a single structural framework. The findings show that governance does not merely operate as a control function but as a cultural force that shapes ethical behavior and disclosure quality. However, the results

also indicate that governance mechanisms must be genuinely implemented, not merely symbolic, to produce deterrent effects. This is consistent with global evidence from Kaptein (2011) and Tricker (2019), who emphasize that ethical governance requires both institutional structure and moral leadership. Therefore, this study provides nuanced support for the idea that the Fraud Heptagon–GCG interaction offers a holistic understanding of fraud dynamics in emerging markets, balancing behavioral motivation with structural oversight.

V. CONCLUSION AND IMPLICATIONS

Conclusion

This study set out to examine how the Fraud Heptagon, Audit Report Lag, and Whistleblowing System influence fraudulent financial reporting in manufacturing firms listed on the Indonesian Stock Exchange between 2015 and 2024, while also assessing the moderating role of Good Corporate Governance (GCG). The empirical results derived from the PLS-SEM analysis paint a clear picture of how behavioral pressures, reporting practices, and governance structures interact to shape financial reporting integrity. The Fraud Heptagon emerged as a significant driver of manipulation, suggesting that psychological, ethical, and organizational pressures—such as rationalization, capability, arrogance, collusion, and greed—remain powerful catalysts for fraudulent behavior (Vousinas, 2019; Azizah & Reskino, 2023). These findings reaffirm the importance of understanding fraud through a behavioral lens, especially in environments where managerial decision-making is influenced by performance pressures and hierarchical dynamics. In contrast, Audit Report Lag showed no significant direct impact on fraudulent reporting, indicating that extended audit timelines do not necessarily reflect manipulation attempts. This result challenges the common assumption that delays in audit issuance are inherently indicative of fraud, and instead implies that ARL may stem from operational complexity, audit procedures, or external influences rather than intentional concealment (Widharma & Susilowati, 2020). On the preventive side, the Whistleblowing System demonstrated a strong negative association with financial statement fraud, reinforcing its role as a critical internal mechanism for early detection and accountability (Kaptein, 2011; Setyawati et al., 2020). The study further found that GCG plays an influential moderating role: governance structures were shown to suppress the effects of the Fraud Heptagon and amplify the effectiveness of whistleblowing, although they did not significantly change the relationship between ARL and fraud. Collectively, these findings confirm the value of governance in reducing agency problems, strengthening ethical culture, and mitigating opportunities for financial manipulation (Kusumawati & Rahayu, 2018; Tricker, 2019).

Theoretical Implications

From a theoretical standpoint, this study extends the fraud literature by providing empirical validation for the Fraud Heptagon framework in an emerging-market environment. While previous research in Indonesia largely centered on the Fraud Triangle, Diamond, or Pentagon, this study demonstrates that the inclusion of arrogance, collusion, and greed enhances the explanatory power of fraud models, particularly in cultures where interpersonal networks and hierarchical norms shape managerial behavior (Vousinas, 2019). By integrating behavioral constructs with governance and procedural factors, the study also bridges conceptual gaps in fraud research, illustrating that fraud cannot be understood solely through individual motives or structural weaknesses. Instead, it must be examined within a holistic model that reflects the interplay between personal ethics, organizational culture, regulatory oversight, and governance quality.

The findings provide firm support for Agency Theory, which argues that misalignment between managerial incentives and shareholder interests creates conditions conducive to manipulation (Jensen & Meckling, 1976; Eisenhardt, 1989). They also reinforce Governance Theory and Stakeholder Theory by demonstrating that stronger governance structures help reduce moral hazard and enhance organizational accountability (Freeman, 1984; Tricker, 2019). In doing so, this research contributes to the broader academic understanding of how fraud emerges within complex institutional environments, and how governance quality shapes the effectiveness of fraud-prevention mechanisms.

Practical Implications

Practically, the findings emphasize the need for companies to strengthen ethical infrastructure and governance systems to effectively mitigate fraud. Firms should prioritize improving board independence and audit committee performance, as these mechanisms play a decisive role in monitoring financial reporting practices and creating a culture of accountability (Kusumawati & Rahayu, 2018; Yusof et al., 2015). Enhancing the effectiveness of whistleblowing systems is equally critical; organizations must ensure that reporting



channels are confidential, accessible, and supported by clear follow-up procedures. More importantly, firms must foster a culture that protects whistleblowers from retaliation and encourages transparent communication—conditions shown to significantly reduce the likelihood of misconduct (Latan et al., 2019; Sudjono, 2023).

For external stakeholders, especially regulators such as OJK, BEI, and KNKG, these findings underscore the importance of enforcing stronger governance regulations and monitoring compliance more rigorously. Regulators can strengthen fraud detection by promoting real-time reporting, enforcing minimum standards for audit committee performance, and mandating more detailed disclosure of whistleblowing mechanisms. Additionally, stricter enforcement actions for delayed audits or repeated misstatements may serve as stronger deterrents. These steps align with global governance principles advocated by the OECD and contribute to elevating transparency and integrity within Indonesia's capital markets (OECD, 2015).

Limitations and Recommendations for Future Research

Despite its contributions, this study is not without limitations. First, the use of secondary data limits the ability to capture qualitative nuances related to organizational culture, ethical climate, and internal decision-making processes. Second, the study focuses solely on manufacturing firms, which may restrict the generalizability of findings to sectors with different regulatory environments or operational complexities. Third, the measurement of whistleblowing effectiveness relies on disclosed information, which may not fully reflect actual employee behavior or organizational responsiveness. Additionally, the PLS-SEM approach, while effective for predictive analysis, does not fully address potential endogeneity issues.

Future research could build upon this study by incorporating primary data—such as interviews, surveys, or behavioral observations—to capture deeper insights into ethical culture, auditor judgment, and managerial behavior. Expanding the sample to include cross-sectoral or cross-country comparisons may also provide a broader understanding of how institutional environments shape the determinants of fraud. Researchers may also integrate advanced analytical approaches such as machine learning, forensic analytics, or text mining to develop more sophisticated fraud detection models (Rezaee, 2005). Further exploration of moderating or mediating variables—such as audit quality, ownership structure, or ethical leadership—could enrich theoretical models and help create more effective fraud-prevention strategies.

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Cite this Article: Novita, S., Widyastuti, T., Darmansyah (2025). 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, 8(11), pp. 5693-5708. DOI: <https://doi.org/10.47191/ijcsrr/V8-i11-26>