Research Article

The Effect of the Fraud Pentagon on Fraudulent Financial Statements: The Audit Committee as a Moderating Variable in Primary Consumer Goods Sector Manufacturing Companies Listed on the Indonesian Stock Exchange, 2022–2024

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Abstract: A This study examines the practice of fraudulent financial statements in primary consumer goods manufacturing companies listed on the Indonesia Stock Exchange for the 2022–2024 period using the Fraud Pentagon approach. The research problem stems from the persistence of fraudulent financial reporting and the differences in empirical findings regarding the influence of Fraud Pentagon factors on fraudulent financial statements. Therefore, this study aims to analyze the influence of pressure, opportunity, rationalization, competence, and arrogance on fraudulent financial statements, with the audit committee as a moderating variable. This study uses secondary data sourced from financial statements and company annual reports, with a population of 49 companies and a sample of 35 companies selected through a purposive sampling method. The analytical methods used are panel data regression and Moderated Regression Analysis (MRA). The results show that rationalization has a positive and significant effect on fraudulent financial statements, while pressure, opportunity, competence, and arrogance have no significant effect. Furthermore, the audit committee is unable to moderate the influence of pressure, opportunity, rationalization, competence, and arrogance on fraudulent financial statements.

Keywords: Fraud Pentagon, Pressure, Opportunity, Rationalization, Competence, Arrogance, Fraudulent Financial Statement, Audit Committee.

1. Introduction

In this era of globalization, business competition is increasingly fierce and intensifying every year. This increasingly fierce competition encourages management to work effectively and efficiently to achieve company goals. Operational complexity and the availability of various opportunities increase the risk of fraud, particularly in financial reporting. Financial statement fraud is often committed to cover up performance weaknesses and maintain

investor confidence. In general, fraud includes illegal acts involving deception, abuse of trust, or concealment of information for personal gain that harms others. The Association of Certified Fraud Examiners (ACFE) defines occupational fraud as the abuse of office to enrich oneself through the use of company assets or resources (Kagias *et al.,* 2022). Fraud is a serious threat to companies because it can cause significant losses. This practice is often carried out to maintain reputation, increase profits, or achieve specific goals. One form is financial statement fraud, which is the systematic manipulation of financial statements to provide misleading information for the benefit of individuals or companies, potentially harming other parties (Ananda *et al.,* 2024)**.**

Fraudulent financial statements remain rampant and significantly impact public trust. Some notable examples include Enron Corporation, which went bankrupt in 2001 due to financial statement manipulation to inflate profits and conceal debt, resulting in a loss of approximately US$74 billion in shareholder value and the termination of thousands of employees *Anderse* (Roffia & Poffo, 2025) . In Indonesia, PT Indofarma Tbk and its subsidiaries were found to have committed significant irregularities in the management of revenue, expenses, and investments, resulting in losses reaching 371.8 billion rupiah (CNBC Indonesia, 2024). PT Kimia Farma Apotek was involved in inflating distribution and sales data, resulting in consolidated losses of up to 1.82 trillion rupiah (CNN Indonesia, 2024). Meanwhile, PT Tiga Pilar Sejahtera Food Tbk manipulated its financial statements by inflating fixed assets, accounts receivable, and inventory by a total of more than 5 trillion rupiah. These facts confirm that the practice of financial statement manipulation remains a significant issue that requires serious attention (Kautsar & Andhaniwati, 2024).

The 2022 ACFE survey showed that fraud accounted for nine percent of total cases, with an average loss of US$593,000 per case (ACFE, 2022). In Indonesia, the Central Bureau of Statistics recorded 34,588 fraud cases in 2023 (BPS, 2023)., confirming that fraud remains a major challenge for the business world. In 2024, the ACFE recorded 1,921 fraud cases in 138 countries with total losses reaching US$3.1 billion, including 183 cases in the Asia-Pacific region, the highest in China with 33 cases, followed by Australia with 29 cases, Indonesia with 25 cases, Malaysia with 17 cases, and Singapore with 15 cases. Certified Fraud Examiners (CfEs) estimate that each organization potentially loses approximately five percent of its revenue annually due to fraud, with a median loss per case of US$145,000, indicating a significant financial impact (ACFE, 2024).

Figure 1. Percentage of Fraud Types Based on ACFE Survey Results.
Source: ACFE (2024)

Figure 1 shows that financial statement fraud accounts for 5% of total cases. This fraud has the largest median financial impact, with losses reaching $766,000. This is an increase compared to 2022, when losses amounted to USD 593,000. This increase poses a substantial

threat to organizations. Thus, despite its lower incidence, financial statement fraud results in the most substantial financial losses. Fraudulent financial statements remain rampant and significantly impact public trust. The phenomenon of fraudulent financial statements demonstrates that the practice of financial statement manipulation remains prevalent in Indonesia and has a serious impact on the integrity and credibility of financial information. Cases that emerge from time to time confirm that this issue remains relevant in the business and accounting world, making it crucial to identify the factors that trigger fraud to support early detection and future prevention. Fraud detection is a crucial aspect of any investigation. The fraud pentagon theory, developed by Crowe (2011), is an extension of previous theories. Initially, Cressey introduced the fraud triangle in 1953 with three main elements that cause fraud: pressure, opportunity, and rationalization (Machado & Gartner, 2018). Wolfe and Hermanson later added the element of capability, thus birthing the fraud diamond theory (Wolfe & Hermanson, 2004). Crowe further developed the fraud pentagon by adding the factor of arrogance. The fraud pentagon theory emphasizes five elements that enable someone to commit fraud namely pressure, opportunity, rationalization, competence, and arrogance particularly in the context of fraudulent financial statements (Burlacu et al., 2025).

Pressure arises when management faces challenging financial targets or financial conditions (Burlacu et al., 2025). Opportunities are conditions that provide a chance for a perpetrator to commit fraud. Perpetrators can exploit these opportunities if their actions carry a low risk of detection. These opportunities can arise due to weak internal company controls or poor management oversight (Alfarago et al., 2023). Rationalization is behavior that assumes that the fraudulent act committed does not deviate from applicable provisions and is therefore considered normal to do (Indriaty & Thomas, 2023). Competence is how much power an individual has to commit fraud within an organization or company (Verolika et al., 2024). Arrogance is an attitude of feeling superior and above the rules, so that perpetrators, especially at the executive level, feel free from supervision and consequences (Roffia & Poffo, 2025).

These five factors trigger an increase in fraud. However, fraudulent practices can still occur if internal oversight mechanisms and corporate governance are not effective. Prevention of financial statement fraud can be achieved by implementing a good corporate governance system in accordance with procedures. Therefore, a monitoring mechanism is needed to ensure the company's financial reporting process runs smoothly. Through strong internal oversight and accounting systems, the audit committee can eliminate opportunities for fraud, suppress unethical behavior with a culture of integrity and transparency, and ensure that individual competencies are used positively, not to devise fraudulent schemes (Darwis & Rahmadania, 2025). In this study, the audit committee acts as a moderating variable to test whether its existence can moderate the relationship between the fraud pentagon and fraudulent financial statements.

According to data from the Association of Certified Fraud Examiners (ACFE), the manufacturing sector is among the top three industries with 175 cases and the largest median loss due to fraud, reaching USD 267,000 per case (ACFE, 2024). Companies manufacturing in the primary consumer goods sector have operational characteristics that are vulnerable to fraud due to the large inventories that must be managed to maintain smooth production and distribution. This makes inventory accounts vulnerable to manipulation. Data shows that the

manufacturing sector is among the three industries with the most fraud cases and high median losses, confirming the high risk of fraudulent financial statements in this sector. The vulnerability of the primary consumer goods manufacturing subsector to fraud, as outlined by the Association of Certified Fraud Examiners (ACFE), underscores the urgency of this study to identify and examine factors that can trigger fraudulent financial statements. Based on the phenomena described in the background, this study aims to examine and analyze the influence of pressure, opportunity, rationalization, competence, and arrogance on fraudulent financial statements, with the audit committee as a moderating variable in primary consumer goods manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2022–2024 period.

2. Literature Review

Agency Theory

Agency theory was first introduced by Jensen & Meckling (1976), explaining the working relationship between owners or shareholders (principals) and company management (agents). Principals authorize agents to make decisions and carry out tasks on their behalf, but this relationship has the potential to create conflicts of interest due to differing objectives. Information asymmetry often occurs because agents have more knowledge about the company's condition than the principals, thus creating uncertainty about whether the agents are running the business optimally. This conflict arises because shareholders seek maximum profits, while management may pursue personal interests and avoid risk, making the separation of ownership and management a source of agency conflict. This difference in interests between agents and principals causes the problem of conflict of interest (Hakim *et al.,* 2024).

Agency theory explains that pentagon fraud occurs due to an underlying conflict of interest. This conflict of interest between the agent and the principal results in mutual distrust, as the agent acts in their own self-interest and overrides the principal's interests. This situation creates an opportunity for the agent to commit fraud. Regarding agency issues, the audit committee serves as an oversight mechanism that ensures transparency and accuracy of financial reports and minimizes the opportunity for management fraud. The audit committee plays a role in reducing information asymmetry, controlling opportunistic management behavior, maintaining independent decision-making, and balancing the interests of managers and shareholders. Therefore, the existence of an audit committee is key to preventing fraudulent financial statement practices (Galal *et al.,* 2022).

Pentagon Fraud Theory

The fraud pentagon theory was proposed by Crowe Howarth (2011). This theory is a further development of previous theories that have been widely used to explain the influence of fraud. In the fraud pentagon, there are five factors that drive fraud, namely pressure, opportunity, rationalizations, competence, and arrogance (Nizarudin *et al.*, 2023). The Fraud Pentagon Theory provides a strong foundation for understanding fraudulent behavior in financial reporting. This theory explains that fraudulent financial reporting activities arise not only from pressure and conflicts of interest but also from opportunity, technical ability, and the arrogance of individuals who control the financial reporting process

Fraudulent Financial Statement

Fraud in financial reporting is a deliberate act to change or falsify a company's financial information, thereby providing a misleading picture to stakeholders regarding the company's financial condition (Lokanan & Sharma, 2025). Fraud refers to the practice of exploiting financial statements and accounting records as a means to conceal fraudulent acts or to create a false picture of the financial and economic condition of an entity (Tommasetti et al., 2021). Fraudulent financial statements are a form of fraud deliberately committed by company management to present financial information that does not correspond to reality in order to mislead users of financial statements such as investors, creditors, and regulators(Wang et al., 2023).

In this study, fraudulent financial statements were measured using the Beneish M-Score.

$$\text{M-Score} = -4{,}84 + 0.920*DSRI + 0{,}528*GMI + 0.404*AQI + 0.892*SGI + 0.115*DEPI -$$

$$0{,}172*SGAI + 4{,}679*TATA - 0{,}327*LVGI$$

DSRI is the Days Sales Receivable Index, GMI is the Gross Margin Index, DEPI is the Depreciation Index, SGI is the Sales Growth Index, LVGI is the Leverage Index, TATA is the Total Accruals to Total Assets, AQI is the Asset Quality Index, and SGAI is the Sales General Administrative Index. With the criteria that if fraud occurs in financial reports, it can be shown if the Beneish M-Score value is greater than -2.22, and if the Beneish M-Score value is less than -2.22, then there is no indication of fraud in the financial reports.

Pressure

Pressure is something that occurs in the life of a fraudster that drives them to commit fraud. Pressure is one factor that drives an entity to manipulate financial statements, arising when there is a decline or instability in the entity's financial prospects, caused by economic, industry, or operational conditions (Ananda *et al.,* 2024). Pressure, proxied by financial targets, is one factor influencing fraudulent financial statements. Financial targets exert financial pressure on management to successfully achieve them within a given period. Management is encouraged to manipulate financial statements to achieve predetermined targets when the targets are too stringent and financial performance requirements cannot be met (Verolika *et al.,* 2024). This pressure is proxied by the financial target which is calculated using the Return on Total Assets (ROA).

$$ROA = \frac{Net\ Income}{Total\ Aset}$$

Opportunity

Opportunity is a chance that individuals exploit to commit fraud. Opportunity arises when the perpetrator believes they can plan and execute the fraudulent act without detection. This opportunity creates room for fraud, especially when the risk of detection is low. The combination of opportunity and pressure from management can increase stress, pushing both employees and the company to engage in fraudulent practices (Alfarago *et al.,* 2023). Opportunities typically arise from weak internal controls and the inability to prevent fraud. Opportunities for fraud can arise from weak internal controls, which include a lack of

oversight and abuse of authority. Ineffective oversight can create loopholes for management to manipulate financial transactions (Verolika *et al.*, 2024). In this study, ineffective monitoring is measured by calculating the ratio of the number of independent board commissioners by the total number of commissioners.

$$\text{BDOUT} = \frac{\text{Number of independent board commissioners}}{\text{number of commissioners}}$$

Rationalization

Rationalization is a condition in which improper actions are considered reasonable. Rationalization in fraud is the character or ethical value system held by company management or employees, which makes them feel that the fraudulent actions they commit are justifiable (Putri & Setiyorini, 2024). According to Aripin *et al.*, (2022) In the context of fraud, rationalization reflects a management value system or ethic that morally or logically justifies fraud, thereby eliminating the perpetrator's guilt. Management often uses the accruals to total assets (TATA) ratio to detect potential manipulation, as accruals allow for recording transactions without actual cash flows and allow discretionary accounting policies to alter reported earnings.

$$\textbf{TATA} = \frac{\textbf{Income Before Extraordinary Items}_t - \textbf{Cash From Operations}_t}{\textbf{Total Assets}_t}$$

Competence

Competence is the ability, capability, or power of management to control and commit fraud internally (Putri & Setiyorini, 2024). A person with high competence usually occupies a strategic position, understands accounting systems well, and is able to manipulate his work environment to support fraudulent actions. Conditions that can lead to financial reporting fraud are changes in the board of directors, where changes in the board of directors can result in the transfer of responsibility to the new director and conceal the fraud of the previous director if it is not carried out in accordance with the provisions (Firana *et al.*, 2024).

In this study, Competence is proxied by board change (DCHANGE), which is measured using a dummy variable. If a board change occurs, it is coded 1, and if there is no board change, it is coded 0 during the study period.

Arrogance

Arrogance is an attitude of superiority combined with entitlement or greed and a belief that company policies and internal controls do not apply to them. Arrogance can lead to financial reporting fraud through the use and exploitation of authority (Aileen & Salim, 2025). In this study, arrogance was measured by the number of CEO photos displayed in a company's annual report.

$$\text{CEOPIC} = \text{Total CEO photos in the annual report}$$

Audit Committee

The following definition of the audit committee was published by the Indonesian government in Financial Services Authority (OJK) Regulation No. 55/POJK.04/2015: "The Audit Committee is a committee formed and accountable to the Board of Commissioners

which is tasked with assist- ing in carrying out the functions and duties of the Board of Commissioners. In this study, the audit committee was measured using the frequency of audit committee meetings indicator.

3. Proposed Method

This research was conducted using a quantitative approach that emphasizes empirical testing of the relationship between variables through measurable and statistically processed data. This quantitative approach is applied to analyze the effects of the fraud pentagon factors namely pressure, opportunity, rationalization, competence, and arrogance on fraudulent financial reporting, with the audit committee as a moderating variable.

The study adopts an explanatory research design aimed at identifying causal relationships between independent and dependent variables through hypothesis testing. This study relies on secondary data obtained from the annual reports and financial statements of manufacturing companies in the primary consumer goods sector listed on the Indonesia Stock Exchange for the period 2022–2024. The study population consists of 49 manufacturing companies in the primary consumer goods sector listed on the Indonesia Stock Exchange (IDX) during the period 2022–2024. Based on purposive sampling using predetermined inclusion and exclusion criteria, 35 companies were selected as the study sample. These companies initially yielded 105 firm-year observations. After data screening, four observations were identified as outliers due to their extreme values potentially biasing the regression results. Consequently, these observations were removed, resulting in a final dataset of 101 firm-year observations deemed suitable for further statistical analysis.

This study uses panel data. Panel data is a combination of cross-sectional data and time series data, where the same cross-sectional unit is measured at different times. Panel data regression analysis is a regression analysis based on panel data to observe the relationship between one dependent variable and one or more independent variables (Ghozali & Ratmono, 2017). To test the moderating role of the audit committee, this study applies Moderated Regression Analysis (MRA) by including interaction terms between the fraud pentagon variable and the audit committee variable into the panel regression model. This approach allows for empirical evaluation of whether the audit committee strengthens or weakens the relationship between the fraud pentagon factor and fraudulent financial reporting.

4. Results and Discussion

Research Result

Descriptive Statistical Analysis

Descriptive statistical analysis is used to describe data based on maximum, minimum, average (mean), and standard deviation values. Descriptive statistical analysis can assist in drawing conclusions about the data studied in this study to understand the characteristics of the data. The results of the descriptive analysis in this study are as follows:

Table 1. Results of Descriptive Statistical Analysis.

	Y	X1	X2	X3	X4	X5	Z
Mean	-2.239338	0.113055	0.412789	-0.010003	0.366337	2.049505	5.554455
Median	-2.354326	0.089653	0.400000	-0.013718	0.000000	2.000000	5.000000
Maximum	4.606287	0.496266	0.833333	0.388595	1.000000	4.000000	15.00000
Minimum	-3.844370	0.000112	0.333333	-0.273735	0.000000	1.000000	3.000000
Std. Deviation	1.088206	0.096076	0.103806	0.093282	0.484206	0.792165	2.299892
Skewness	3.897682	1.722514	1.981810	0.633528	0.554847	0.397627	1.922315
Kurtosis	22.75733	6.831520	8.486450	7.319752	1.307855	2.723394	6.811836
Jarque-Bera	1898.463	111.7261	192.7897	85.28479	17.23218	2.983459	123.3516
Probability	0.000000	0.000000	0.000000	0.000000	0.000181	0.224983	0.000000
Sum	-226.1732	11.41857	41.69167	-1.010284	37.00000	207.0000	561.0000
Sum Sq. Dev.	118.4192	0.923065	1.077578	0.870146	23.44554	62.75248	528.9505
Observations	101	101	101	101	101	101	101

Source: Processed Data from Eviews 13, 2025

The descriptive statistics indicate that the fraudulent financial statement variable, measured using the Beneish M-Score, has a maximum value of 4.606287, reflecting the existence of firms with a very high risk of financial statement manipulation which occurred at PT Gudang Garam Tbk in 2023. In contrast, the minimum value of −3.844370 represents firms with highly stable financial conditions and a low likelihood of manipulation and was observed at PT Wilmar Cahaya Indonesia Tbk in 2023. The mean value of −2.239338 suggests that, on average, manufacturing companies in the primary consumer goods sector are classified as non-manipulators, although potential risk remains. The standard deviation of 1.088206 indicates considerable variation in fraud risk across firms. The pressure variable (X_1), proxied by Return on Assets (ROA), shows a maximum value of 0.496266, equivalent to 49.63%, observed at PT Indofood CBP Sukses Makmur Tbk in 2022 reflecting highly efficient asset utilization.and a minimum value of 0.000112, or 0.01% occurred at PT Buyung Poetra Sembada Tbk in 2022, indicating very low profitability. The mean ROA of 0.113055 indicates that firms generate an average profit of 11.31% of total assets, while the standard deviation of 0.096076 reflects moderate variability in profitability. Opportunity (X_2) measured by the proportion of independent commissioners, records a maximum value of 0.833333 or 83.33%, recorded by PT Unilever Indonesia Tbk during 2023–2024, indicating strong board independence. The minimum value of 0.333333 or 33.33%, was found at PT Sariguna

Primatirta Tbk, PT Cisarua Mountain Dairy Tbk, PT Formosa Ingredient Factory Tbk, and PT Garudafood Putra Putri Jaya Tbk during 2022–2024. The mean value of 0.412789 indicates that independent commissioners account for approximately 41.28% of board members on average. The standard deviation of 0.103806 suggests moderate variation in board independence across firms.

The Rationalization (X_3), measured using total accruals, has a maximum value of 0.388595 or 38.86% at PT Indofood CBP Sukses Makmur Tbk in 2022, indicating relatively high accrual usage. In contrast, the minimum value of −0.273735 or −27.37% occurred at PT Estika Tata Tiara Tbk in 2024, reflecting low or negative accruals. The mean value of −0.010003 suggests accrual levels close to −1.00% overall, while the standard deviation of 0.093282 indicates substantial variability in accrual practices across firms. Competence (X_4), proxied by auditor change, is a dummy variable with a mean value of 0.366337, indicating that approximately 36.63% of the 101 firm-year observations experienced auditor changes during the study period. The standard deviation of 0.484206 reflects considerable variation in auditor turnover among firms.

The Arrogance (X_5), measured by the frequency of CEO photographs in annual reports, shows a maximum of four appearances, observed at PT Delta Djakarta Tbk during 2022–2024, which may reflect stronger self-presentation tendencies. The minimum of one appearance was found at PT Akasha Wira International Tbk, PT Tunas Baru Lampung Tbk, and PT Mayora Indah Tbk during 2022–2024. The mean value of 2.049 indicates that firms generally present around two CEO photographs, with a standard deviation of 0.792 showing limited variation.in this disclosure practice. The audit committee variable (Z), measured by the number of audit committee meetings, records a minimum of three meetings and a maximum of fifteen meetings annually. The mean value of 5.554 indicates that firms typically hold approximately five to six audit committee meetings per year. The standard deviation of 2.299 reflects noticeable differences in the intensity of audit committee oversight among firms.

Classical Assumption Test

Classical assumption tests are conducted to ensure the quality of the data used in panel regression analysis. Referring to Basuki & Prawoto, (2015) not all classical assumption tests required in Ordinary Least Squares (OLS) are applicable to panel data regression; only multi-collinearity and heteroskedasticity tests are necessary. The normality test is not a requirement for the Best Linear Unbiased Estimator and may be omitted when the number of observations exceeds 30 based on the Central Limit Theorem. This study uses 101 observations; therefore, normality testing is not required. In addition, autocorrelation testing is generally relevant to time series data and can be ignored in panel data analysis. Accordingly, this study only applies multicollinearity and heteroskedasticity tests.

Multicollinearity Test

One method to detect multicollinearity in a regression model is by examining the correlation coefficients in the analysis output. A correlation coefficient greater than 0.80 indicates the presence of multicollinearity. The results of the correlation analysis for the estimated model are presented below.

Table 2. Multicollinearity Test Results.

	X1	X2	X3	X4	X5	Z
X1	1.000000	0.261835	0.355512	0.083014	0.113106	-0.098832
X2	0.261835	1.000000	-0.047433	0.184390	-0.145598	0.105085
X3	0.355512	-0.047433	1.000000	-0.177373	-0.168184	-0.034713
X4	0.083014	0.184390	-0.177373	1.000000	0.082601	0.076194
X5	0.113106	-0.145598	-0.168184	0.082601	1.000000	0.067115
Z	-0.098832	0.105085	-0.034713	0.076194	0.067115	1.000000

Source: Processed Data from Eviews 13, 2025

Based on the test results of the correlation coefficient value in the equation model, each variable has a coefficient value <0.8, so it can be concluded that the model does not experience multicollinearity problems.

Heteroscedasticity Test

The heteroskedasticity test is conducted to determine whether the residuals have constant variance. A good regression model assumes homoscedastic residuals. In this study, heteroskedasticity is tested using the Glejser test by regressing the independent variables on the absolute residual values.

Table 3. Heteroscedasticity Test Result.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.479367	0.240944	1.989536	0.0512
X1	0.113873	0.390514	0.291598	0.7716
X2	-0.247878	0.459326	-0.539655	0.5914
X3	-0.001557	0.257110	-0.006057	0.9952
X4	0.049168	0.044923	1.094494	0.2781
X5	0.026079	0.062412	0.417853	0.6775
Z	-0.033222	0.018065	-1.838991	0.0709

Source: Processed Data from Eviews 13, 2025

Table 3 above shows that the probability of all independent variables is > 0.05. This indicates that there is no heteroscedasticity problem in these variables.

Panel Data Regression Analysis

The findings derived from the panel data regression utilizing the fixed effects model are presented as follows :

Table 4. Results of Panel Data – Fixed Effect Model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.329624	1.196666	-1.111107	0.2710
X1	-0.276157	1.939514	-0.142385	0.8873
X2	-1.974992	2.281278	-0.865739	0.3901
X3	6.358388	1.276958	4.979324	0.0000
X4	0.023334	0.223113	0.104586	0.9171
X5	0.100663	0.309973	0.324748	0.7465
Z	-0.038617	0.089722	-0.430402	0.6684

Effects Specification				

Cross-section fixed (dummy variables)

Root MSE	0.572810	R-squared	0.720154
Mean dependent var	-2.239338	Adjusted R-squared	0.533589
S.D. dependent var	1.088206	S.E. of regression	0.743182
Akaike info criterion	2.535354	Sum squared resid	33.13919
Schwarz criterion	3.596938	Log likelihood	-87.03539
Hannan-Quinn criter.	2.965114	F-statistic	3.860082
Durbin-Watson stat	2.914674	Prob(F-statistic)	0.000001

Source: Processed Data from Eviews 13, 2025

Based on the panel data regression results, the following equation was obtained:

$$Y = -1{,}329624 - 0{,}276157\ X_1 - 1{,}974992\ X_2 + 6{,}358388\ X_3 + 0{,}023334\ X_4 + 0{,}100663\ X_5 - 0{,}038617\ Z$$

The regression results show that the constant (C) has a value of -1.329624, which means that if pressure (X_1), opportunity (X_2), rationalization (X_3), competence (X_4), arrogance (X_5), and the audit committee (Z) are all zero, the value of fraudulent financial statements (Y) is -1.329624. The regression results show that pressure (X_1) has a negative coefficient of -0.276157, this coefficient means that an increase of 1 unit in pressure decreases fraudulent financial statements by 0.276157, and a decrease of 1 unit in pressure increases fraudulent financial statements by 0.276157, assuming other variables remain constant.with a probability value of $0.8873 > 0.05$, indicating that pressure does not have a significant effect on fraudulent financial statements. Therefore, H1 is rejected. Opportunity (X_2) has a negative coefficient of -1.974992 Each 1 unit increase in opportunity reduces fraudulent financial statements by 1.974992, while a 1 unit decrease increases it by 1.974992, with other variables constant with a probability value of $0.3901 > 0.05$, indicating that opportunity does not significantly affect fraudulent financial statements. Therefore, H2 is rejected. Rationalization (X_3) shows a positive coefficient of 6.358388, this means that a 1unit increase in rationalization raises fraudulent financial statements by 6.358388, and a 1unit decrease lowers it by 6.358388, assuming other variables remain constant with a probability value of $0.0000 < 0.05$, indicating a positive and significant effect on fraudulent financial statements. Therefore, H3 is accepted. Competence (X_4) has a positive coefficient of 0.023334, a 1unit increase in competence increases fraudulent financial statements

by 0.023334, and a 1-unit decrease reduces it by 0.023334, assuming other variables are constant with a probability value of $0.9171 > 0.05$. Therefore, H4 is rejected. Arrogance (X_5) has a positive coefficient of 0.100663, a 1 unit increase in arrogance increases fraudulent financial statements by 0.100663, and a 1 unit decrease reduces it by 0.100663, with other variables constant with a probability value of $0.7465 > 0.05$, indicating that arrogance does not significantly affect fraudulent financial statements. Therefore, H5 is rejected. The audit committee variable (Z) has a negative coefficient of –0.038617, a 1 unit increase in audit committee activity decreases fraudulent financial statements by 0.038617, and a 1 unit decrease increases it by 0.038617, assuming other variables remain constant with a probability value of $0.6684 > 0.05$, indicating that the audit committee does not have a significant effect on fraudulent financial statements. Therefore, H6 is rejected.

Based on the panel data regression results, the Prob. F-statistic value is 0.000001, which is below the 0.05 significance level. This indicates that the regression model is statistically significant and suitable for analysis. Therefore, it can be concluded that pressure, opportunity, rationalization, competence, arrogance, and the audit committee simultaneously have a significant effect on fraudulent financial statements. This finding suggests that the elements of the fraud pentagon, together with the audit committee as a governance mechanism, jointly influence the occurrence of financial statement fraud.

Furthermore, the panel data regression results show an Adjusted R-squared value of 0.533589. This means that 53.359% of the variation in fraudulent financial statements can be explained by the independent variables included in the model. The remaining 46.641% is influenced by other factors not examined in this study. The Adjusted R-squared value indicates that the regression model has a relatively strong explanatory power in explaining fraudulent financial statements among manufacturing companies in the primary consumer goods sector.

Moderated Regression Analysis (MRA)

The Moderated Regression Analysis (MRA) test is used to determine whether moderating variables can moderate the relationship between the independent and dependent variables. The model estimation results are as follows.

Table 5. Results MRA with Fixed Effect Model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1Z	0.403145	1.121105	0.359596	0.7205
X2Z	-0.102488	0.686582	-0.149273	0.8819
X3Z	-0.590789	0.753803	-0.783744	0.4366
X4Z	-0.025337	0.088547	-0.286142	0.7758
X5Z	-0.053595	0.088144	-0.608041	0.5457

Effects Specification				

Cross-section fixed (dummy variables)

Root MSE	0.566754	R-squared	0.726039
Mean dependent var	-2.239338	Adjusted R-squared	0.501890
S.D. dependent var	1.088206	S.E. of regression	0.768022
Akaike info criterion	2.613108	Sum squared resid	32.44219
Schwarz criterion	3.804152	Log likelihood	-85.96193
Hannan-Quinn criter.	3.095277	F-statistic	3.239083
Durbin-Watson stat	2.953398	Prob(F-statistic)	0.000022

Based on the panel data regression results, the following equation was obtained:

$$Y = -2{,}400351 + 0{,}403145\, X_1Z - 0{,}102488\, X_1Z - 0{,}590789\, X_3Z - 0{,}025337\, X_4Z - 0{,}053595\, X_5Z$$

The regression results show that the interaction between pressure and the audit committee (X_1Z) has a positive coefficient of 0.403145 with a probability value of $0.7205 > 0.05$, indicating that the audit committee does not significantly moderate the effect of pressure on fraudulent financial statements. Therefore, H7 is rejected. This means that a 1-unit increase in the audit committee slightly strengthens the effect of pressure on fraudulent financial statements by 0.403145, while a 1-unit decrease slightly weakens it, assuming other variables are constant. The interaction between opportunity and the audit committee (X_2Z) has a negative coefficient of -0.102488 with a probability value of $0.8819 > 0.05$, indicating that the audit committee does not significantly moderate the effect of opportunity on fraudulent financial statements. Therefore, H8 is rejected. A 1-unit increase in the audit committee slightly weakens the effect of opportunity on fraudulent financial statements by 0.102488, while a 1-unit decrease slightly strengthens it, with other variables constant. The interaction between rationalization and the audit committee (X_3Z) shows a negative coefficient of -0.590789 with a probability value of $0.4366 > 0.05$, indicating that the audit committee does not significantly moderate the effect of rationalization on fraudulent financial statements. Therefore, H9 is rejected. This means that a 1-unit increase in the audit committee slightly reduces the effect of rationalization on fraudulent financial statements by 0.590789, while a 1-unit decrease slightly increases it, assuming other variables remain constant.

The interaction between competence and the audit committee (X_4Z) has a negative coefficient of -0.025337 with a probability value of $0.7758 > 0.05$, indicating that the audit committee does not significantly moderate the effect of competence on fraudulent financial statements. Therefore, H10 is rejected. A 1-unit increase in the audit committee slightly reduces the effect of competence on fraudulent financial statements by 0.025337, and a 1-unit decrease slightly strengthens it, assuming other variables constant. The interaction between arrogance and the audit committee (X_5Z) has a negative coefficient of -0.053595 with a probability value of $0.5457 > 0.05$, indicating that the audit committee does not significantly moderate the effect of arrogance on fraudulent financial statements. Therefore, H11 is rejected. This means that a 1-unit increase in the audit committee slightly weakens the effect of arrogance on fraudulent financial statements by 0.053595, while a 1-unit decrease slightly strengthens it, assuming other variables remain constant.

Based on the statistical testing results presented in Table 5.14, the Probability (F-statistic) value of the MRA equation is 0.000022, which is less than 0.05. This indicates that pressure, opportunity, rationalization, competence, arrogance, the audit committee, as well as all interaction variables between the audit committee and each fraud pentagon factor, simultaneously have a significant effect on fraudulent financial statements. The results of the F-test demonstrate that the regression model is statistically feasible and that all independent, moderating, and interaction variables jointly contribute to explaining variations in fraudulent financial statements.

Furthermore, the Adjusted R-squared value of 0.501890 indicates that pressure, opportunity, rationalization, competence, arrogance, the audit committee, and all interaction variables are able to explain 50.189% of the variation in fraudulent financial statements. Meanwhile, the remaining 49.811% is explained by other factors not included in this research model. This result suggests that although the proposed model has a relatively strong explanatory power, there are still other variables outside the fraud pentagon framework and audit committee moderation that may influence fraudulent financial statements.

Based on the results discussed previously, several conclusions can be drawn regarding the proposed research hypothesis.

Table 6. Hypothesis Testing Results.

No	Hypothesis	Result
H_1	Pressure has a positive effect on fraudulent financial statements	Rejected
H_2	Opportunity has a positive effect on fraudulent financial statements	Rejected
H_3	Rationalization has a positive effect on fraudulent financial statements	Accepted
H_4	Competence has a positive effect on fraudulent financial statements	Rejected
H_5	Arrogance has a positive effect on fraudulent financial statements	Rejected
H_6	Audit committee has a negative effect on fraudulent financial statements	Rejected
H_7	Audit committee weakens the effect of pressure on fraudulent financial statements	Rejected
H_8	Audit committee weakens the effect of opportunity on fraudulent financial statements	Rejected
H_9	Audit committee weakens the effect of rationalization on fraudulent financial statements	Rejected
H_{10}	Audit committee weakens the effect of competence on fraudulent financial statements	Rejected
H_{11}	Audit committee weakens the effect of arrogance on fraudulent financial statements	Rejected

Discussion

The Effect of Pressure on Fraudulent Financial Statements

The results indicate that pressure proxied by financial targets measured using Return on Assets (ROA) does not significantly affect fraudulent financial statements. This finding suggests that financial pressure is not a dominant factor driving financial reporting fraud in this sector. From the perspective of agency theory, financial pressure may trigger conflicts between principals and agents when profitability targets are used as the primary basis for performance evaluation. However, the relatively stable profitability of primary consumer goods companies reduces the intensity of such conflicts, as management is generally able to achieve realistic financial targets without resorting to manipulation. Consistent with the fraud pentagon theory, pressure only encourages fraud when management perceives financial targets as unattainable or threatening. In this sector, stable demand for essential goods contributes to steady ROA performance, thereby limiting excessive pressure on management. Consequently, financial targets reflected by ROA are viewed as achievable, reducing incentives for fraudulent financial reporting.

The Effect of Opportunity on Fraudulent Financial Statements

The regression results indicate that opportunity, proxied by ineffective monitoring measured through the proportion of independent commissioners, does not have a significant effect on fraudulent financial statements. This finding suggests that opportunity is not a key determinant of financial reporting fraud in this sector. From the perspective of agency theory, weak monitoring mechanisms may increase agency conflicts by allowing managers to act opportunistically. However, this study does not support that assumption, as firms in the primary consumer goods sector generally comply with regulatory requirements regarding board composition, resulting in relatively adequate oversight structures. Consistent with the fraud pentagon theory, opportunity only facilitates fraud when management perceives sufficient control weaknesses to act without detection. In this sector, stable operational cycles, consistent consumer demand, and strong reputational concerns appear to limit the effectiveness of opportunity as a driver of fraud. Consequently, ineffective monitoring does not significantly encourage fraudulent financial reporting.

The Effect of Rationalization on Fraudulent Financial Statements

The regression results show that rationalization, proxied by the total accruals to total assets (TATA) ratio, has a positive and significant effect on fraudulent financial statements. This finding provides empirical evidence that rationalization is a critical factor in the occurrence of financial reporting fraud in this sector. High accrual ratios indicate management's tendency to manipulate earnings through discretionary accounting entries. From an agency theory perspective, managers as agents possess superior information about operational performance compared to principals. This information asymmetry allows managers to act opportunistically to preserve a positive performance image, maintain investor confidence, and achieve profit targets, often justifying manipulative actions as acceptable. Rationalization serves as a psychological mechanism that normalizes these opportunistic behaviors, enabling fraudulent financial statements even in the absence of extreme financial pressure. According to the fraud pentagon theory, rationalization enables perpetrators to justify fraudulent actions as logical, acceptable, or harmless measures to protect the company's reputation. In the primary consumer goods sector, where market demand is stable and brand

trust is critical, management is more likely to rationalize accrual-based manipulation to maintain perceived financial performance. This demonstrates that rationalization significantly contributes to the occurrence of fraudulent financial statements.

The Effect of Competence on Fraudulent Financial Statements

The regression results indicate that competence, proxied by director changes, does not significantly affect fraudulent financial statements. This provides empirical evidence that competence, as measured by leadership changes, is not a factor driving financial reporting fraud in this sector. Director changes in this context are primarily strategic and structural, such as organizational restructuring, leadership rotation, or term completions, rather than indicators of managerial capability to commit fraud. From the agency theory perspective, although changes in leadership may create transitional periods requiring adaptation to new policies and expectations, these shifts do not necessarily trigger opportunistic behavior by agents. Effective corporate governance mechanisms ensure that agents continue to act in the interest of principals despite leadership transitions. According to the fraud pentagon theory, competence refers to an individual's ability to commit or conceal fraud. However, the findings suggest that director changes do not increase or decrease management's ability to manipulate financial statements. Even with new leadership, there is no indication that management leverages competence to engage in fraudulent reporting.

The Effect of Arrogance on Fraudulent Financial Statements

The regression results show that arrogance, proxied by the frequency of CEO photos in the annual report, does not significantly affect fraudulent financial statements. This provides empirical evidence that arrogance is not a factor driving financial reporting fraud in this sector. The frequent appearance of CEO photos in annual reports primarily aims to introduce corporate leadership to stakeholders and demonstrate the CEO's participation in company activities. This practice reflects transparency and accountability rather than personal superiority or a sense of immunity to rules. Consequently, the presence of CEO photos does not indicate a tendency to manipulate financial reporting. From the agency theory perspective, although an arrogant agent may misuse authority for personal gain, the findings indicate that CEO visibility in reports does not reflect opportunistic behavior that could trigger fraudulent financial statements. Similarly, in the context of the fraud pentagon, arrogance represents the element where individuals with authority may feel immune to oversight, increasing fraud risk. However, in this sector, CEO visibility does not equate to arrogance, and thus does not contribute to financial reporting fraud. Overall, the results suggest that the portrayal of CEOs through annual report photos emphasizes managerial transparency and stakeholder communication, rather than indicating personal arrogance that could lead to fraudulent financial statements.

The Effect of the Audit Committee on Fraudulent Financial Statements

The regression results indicate that the audit committee, proxied by the frequency of audit committee meetings, does not significantly affect fraudulent financial statements. This provides empirical evidence that the mere frequency of audit committee meetings is not a factor in preventing financial reporting fraud in this sector. Although theoretically, frequent audit committee meetings should enhance oversight of financial reporting processes, high meeting frequency does not necessarily reflect effective monitoring. Meetings may be conducted formally to comply with regulatory requirements without producing substantive

decisions to detect or prevent potential fraud. In practice, audit committee effectiveness depends on the quality, independence, and follow-up of meetings rather than their number. From the agency theory perspective, the audit committee serves as a governance mechanism to reduce conflicts between management and shareholders by enhancing transparency and accountability in financial reporting. It is expected to limit opportunistic behavior by managers. However, in this sector, the role of the audit committee remains largely procedural, and its presence does not effectively restrict management's ability to manipulate financial statements.

The Moderating Effect of the Audit Committee on Fraud Pentagon Factors and Fraudulent Financial Statements

Based on the regression results, the audit committee does not moderate the effect of pressure, opportunity, rationalization, competence, or arrogance and fraudulent financial statements. This indicates that, in this sector, the audit committee's role remains largely procedural and has not yet functioned as an effective mechanism to suppress fraud risk arising from fraud pentagon factors. This finding indicates that the frequency of meetings or activities of the audit committee has not been effective as a supervisory mechanism to reduce the impact of these factors on financial statement manipulation. Although theoretically the audit committee should act as an independent party ensuring transparency, compliance with accounting standards, and limiting management's opportunistic behavior according to agency theory, in practice the oversight remains formalistic and not substantive. Audit committee meetings primarily focus on regulatory compliance and administrative agendas without addressing high-risk fraud issues in depth, so the committee's ability to mitigate external pressure, limit the exploitation of opportunities, prevent rationalization, control misuse of competence, or restrain managerial arrogance is not empirically supported. This finding emphasizes that the effectiveness of the audit committee depends not only on meeting frequency but also on the quality of supervision, independence, technical competence, and thorough evaluation of financial reporting; thus, the mere presence of an audit committee is insufficient to reduce the risk of fraudulent financial statements.

6. Conclusions

This study aims to analyze the influence of pressure, opportunity, rationalization, competence, and arrogance on fraudulent financial statements with the audit committee as a moderating variable in primary consumer goods manufacturing companies listed on the Indonesia Stock Exchange for the 2022-2024 period. Based on the results of panel data regression analysis and moderated regression analysis (MRA), it can be concluded that of the five Pentagon Fraud factors tested, only rationalization has been shown to have a positive and significant effect on fraudulent financial statements. Meanwhile, pressure, opportunity, competence, and arrogance did not show a significant effect on fraudulent financial statements. Furthermore, the audit committee also did not have a significant direct effect on fraudulent financial statements.

The results of the moderation test indicate that the audit committee is unable to moderate the relationship between pressure, opportunity, rationalization, competence, or arrogance on fraudulent financial statements. However, all independent variables and interaction variables simultaneously proved to have an effect on fraudulent financial statements, with the model's explanatory power being quite good. These findings indicate that fraudulent financial reporting

practices in primary consumer goods manufacturing companies are more influenced by management rationalization aspects, while the role of oversight mechanisms such as the audit committee is still formal and ineffective in reducing the risk of fraud.

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