

## Fraud Triangle Analysis in Detecting Fraudulent Financial Statement: Meta-Analysis

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### Abstrak

Penelitian ini mengkaji bagaimana komponen *fraud triangle* memengaruhi deteksi pelaporan keuangan yang curang. Segitiga penipuan terdiri dari tiga faktor utama—tekanan, kesempatan, dan rasionalisasi—yang umumnya dianggap sebagai pendorong tindakan curang. Pendekatan meta-analisis digunakan untuk menganalisis komponen-komponen ini. Dalam analisis ini, variabel tekanan diwakili oleh Stabilitas Keuangan, Tekanan Eksternal, Kebutuhan Keuangan Pribadi, dan Target Keuangan. Faktor kesempatan tercermin melalui proksi seperti Karakteristik Industri dan Pemantauan yang Tidak Efektif. Meta-analisis digunakan untuk mensintesis temuan dari studi sebelumnya dan mengidentifikasi tren umum. Studi ini mengevaluasi 20 artikel penelitian kuantitatif. Temuan menunjukkan bahwa Stabilitas Keuangan, Karakteristik Industri, Pemantauan yang Tidak Efektif, dan Rasionalisasi memiliki hubungan positif dengan kecurangan laporan keuangan. Sebaliknya, Tekanan Eksternal, Kebutuhan Keuangan Pribadi, dan Target Keuangan menunjukkan hubungan negatif dengan aktivitas kecurangan. Hasil ini menyarankan bahwa tidak semua elemen dalam segitiga kecurangan secara merata berkontribusi pada kecurangan laporan keuangan, kemungkinan karena variasi dalam pengukuran proksi yang digunakan di seluruh studi yang dianalisis.

**Kata Kunci:** Kecurangan laporan keuangan; *fraud triangle*; analisis meta

### Abstract

*This research investigates how the components of the fraud triangle influence the detection of fraudulent financial reporting. The fraud triangle comprises three key factors—pressure, opportunity, and rationalization—that are commonly believed to drive fraudulent actions. A meta-analytic approach is employed to examine these components. In this analysis, the pressure variable is represented by Financial Stability, External Pressure, Personal Financial Needs, and Financial Targets. The opportunity factor is reflected through proxies such as Industry Characteristics and Ineffective Monitoring. Meta-analysis is utilized to synthesize findings from prior studies and identify overarching trends. The study evaluates 20 quantitative research articles. The findings reveal that Financial Stability, Industry Characteristics, Ineffective Monitoring, and Rationalization exhibit a positive association with financial statement fraud. In contrast, External Pressure, Personal Financial Needs, and Financial Targets demonstrate a negative relationship with fraudulent activity. These outcomes suggest that not all elements within the fraud triangle uniformly contribute to financial statement fraud, potentially due to variations in proxy measurements used across the analyzed studies.*

**Keywords:** Fraudulent financial statement; *fraud triangle*; meta analysis

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## INTRODUCTION

Financial reporting serves as a means for companies to demonstrate accountability regarding their financial data and operational performance to users of financial information (Whittington, 2007) (Anisykurlillah et al., 2022). For financial reporting to be effective, it must be presented with qualitative characteristics that address the needs of stakeholders, including management, employees, investors, creditors, suppliers, customers, and government authorities. It provides insight into the company's past efforts to enhance performance and serves as a foundation for planning future actions aimed at

increasing corporate value for stakeholders (Armstrong et al., 2010); (Muariya et al., 2022). Therefore, high-quality financial statements are expected to be free from misstatements or fraudulent activities in their presentation.

In the field of accounting, fraud refers to deviations from standard accounting practices that should be properly implemented within an organization, where such deviations influence the accuracy and reliability of the company's financial statements (Hartmann et al., 2018). Fraudulent reporting involves intentional misstatements or omissions of figures or disclosures in financial reports with the purpose of misleading users, as well as errors resulting from improper handling of company assets (Young, 2020). This type of fraud is closely associated with the misappropriation of an entity's assets, leading to financial statements that fail to comply with generally accepted accounting principles (GAAP) applicable in Indonesia.

Fraud involves intentional acts of deceit or misrepresentation aimed at gaining advantages for an individual or group (Dwijayani et al., 2019). It is considered an illegal activity that may be committed by parties either internal or external to an organization. When fraudulent actions go unnoticed in financial statements, they can cause serious consequences for stakeholders. These consequences may include reputational damage, financial losses for the organization, erosion of investor trust, and a decline in state revenue, all of which can negatively impact the national economy (Rustiarini et al., 2019). As a result, organizations must adopt effective strategies to deter fraudulent practices.

Fraudulent financial reporting is often linked to the practice of earnings management carried out by company executives (Nasir et al., 2018); (Bhaktiar & Setyorini, 2021). While management plays a vital role in maximizing returns for stakeholders, they may also pursue personal gain, creating a conflict of interest. This misalignment can compromise the reliability and integrity of the reported earnings. The growing incidence of financial reporting fraud and corporate collapses has led to increased skepticism regarding the credibility of financial statements issued by companies (Amiram et al., 2018). The existence of this fraud triangle is used to provide solutions in fraud detection procedures and assess fraud risk. Fraud triangle there are three conditions that cause managers of a company to commit fraud against the submission of financial statements, namely pressure, opportunity, and rationalization (Karakaro & Siegar, 2020); (Owusu et al., 2022). Pressure is a condition when someone feels pressured to meet the targets that must be achieved from interested parties (Sánchez-Aguayo et al., 2021). Based on SAS No. 99, there are four types of pressure that allow financial statement fraud to occur, including Financial Stability, External Pressure, Personal Financial Need, and Financial Target. Opportunity is an opportunity that allows fraud to occur (Homer, 2020); (Fauziah, 2022). Managers will see the advantages and disadvantages experienced by the company conditions that occur within the company to see if there are gaps that can be utilized by managers. Researchers classify Opportunities that lead to fraud into two categories, namely Nature of Industry and Ineffective Monitoring. Rationalization is an act of justification carried out by someone who commits financial reporting fraud (M. J. Rahman & Jie, 2024). This justification is carried out by internal company parties such as company managers or employees because they can control company inventory freely to be able to commit fraud against company inventory, the perpetrator will try to find justification for the actions taken against the company's assets (A. Rahman et al., 2020).

This research contrasts with the study conducted by Wahyuningrum, (2020) which analyzed non-financial service companies listed on the Indonesia Stock Exchange (IDX) between 2008 and 2013 and excluded the opportunity and rationalization dimensions. In the current study, the Nature of Industry is measured using the Total Inventory Ratio, Ineffective Monitoring is assessed through the proportion of independent committees involved in overseeing financial reporting and internal controls, and Rationalization is evaluated using the Total Accruals to Total Assets (TATA) ratio. Meanwhile, Sabatian & Hutabarat, (2020) investigated fraud-related cases in cigarette and cosmetic companies listed on the IDX during the 2016–2018 period. Their study concluded that External Pressure, Financial Stability, Financial Targets, Personal Financial Need, Nature of Industry, and Ineffective Monitoring did not significantly influence financial statement fraud (Budiyo & Arum, 2020).

Prior research shows discrepancies in the proxy measures for Financial Stability, External Pressure, Personal Financial Need, Financial Targets, Nature of Industry, Ineffective Monitoring, and Rationalization (Abbas et al., 2020); (Narsa et al., 2023). To address this, the current study employs a meta-analytic approach aimed at systematically analyzing, synthesizing, and evaluating existing literature on the Fraud Triangle's role in detecting financial statement fraud (Hartanto et al., 2019).

Despite extensive review of scientific publications, there remains ongoing debate regarding the direction and strength of the effects of these Fraud Triangle proxies. This research seeks to identify the factors that account for the variability in effect estimates related to the Fraud Triangle in financial statement fraud detection reported in previous studies. The compiled meta-dataset includes 8,003 observations drawn from 20 empirical studies conducted between 2011 and 2020.

The meta-analysis results demonstrate that several moderating variables significantly account for the variations found in earlier research concerning Financial Stability, External Pressure, Personal Financial Need, Financial Targets, Nature of Industry, Ineffective Monitoring, and Rationalization. From a theoretical standpoint, this research enhances the scholarly conversation by offering strong evidence on the application of the Fraud Triangle in detecting financial statement fraud. Additionally, the findings seek to reconcile discrepancies among previous studies and introduce new insights into the most appropriate proxy measures for assessing the Fraud Triangle's elements in identifying fraudulent financial reporting.

The hypotheses in this study are as follows; H1) Financial Stability positively influences Financial Statement Fraud; H2) External Pressure has a positive impact on Financial Statement Fraud; H3) Personal Financial Needs contribute positively to Financial Statement Fraud; H4) Financial Targets are positively related to Financial Statement Fraud; H5) The Nature of the Industry has a positive effect on Financial Statement Fraud; H6) Ineffective Monitoring increases the likelihood of Financial Statement Fraud; H7) Rationalization positively affects Financial Statement Fraud.

**Table 1.**  
**Operational Definition of Variables**

| Notation   | Variable                | Measurement                                                                                                                               | Source                      |
|------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| ACHANGE    | Financial Stability     | $ACHANGE = \frac{\text{Total Aset (t)} - \text{Total Aset (t - 1)}}{\text{Total Aset (t - 1)}}$                                           | (Rifa & Tasrif, 2022)       |
| LEVERAGE   | External Pressure       | $Lev = \frac{\text{Total Debt}}{\text{Total Aset}}$                                                                                       | (Hidayah & Saptarini, 2019) |
| OSHIP      | Financial Personal Need | $OSHIP = \frac{\text{shareholder by owner}}{\text{total shareholder}}$                                                                    | (Diansari & Wijaya, 2019)   |
| ROA        | Financial Target        | $ROA = \frac{\text{Net Profit}}{\text{Total Aset}}$                                                                                       | (Fitri et al., 2019)        |
| RECEIVABLE | Nature of Industry      | $RECEIV = \left( \frac{\text{Receivable } t}{\text{Total Sales } t} - \frac{\text{Receivable } t - 1}{\text{Total Sales } t - 1} \right)$ | (Supri et al., 2018)        |
| BDOUT      | Ineffective Monitoring  | $BDOUT = \frac{\text{Total Komisaris Independen}}{\text{Total Komisaris}}$                                                                | (Afiah & Aulia, 2020)       |
| AUDCHANGE  | Rationalization         | $TATA = \frac{\text{Total Akrua}}{\text{Total Aset}}$                                                                                     | (Rahmatika et al., 2019)    |

Source: Processed By Researchers (2025)

## RESEARCH METHODS

This study used a meta-analysis research approach. This approach is used to test hypotheses and explain the calculations that have been made. The object of this research is Fraudulent Financial Statement research articles. Researchers took 30 articles but 20 articles were eligible. Where the research sample of these articles is from 2011 - 2020 and contains 8,003 observations from a total sample of 20 articles which are assumed to capture or summarize the development of a study to examine the effect of the fraud triangle in detecting fraudulent financial statements.

This research utilizes a quantitative approach to data analysis, adopting the methodology established by Trorman & Wood, (1991). Statistical outcomes from each selected study were transformed into effect sizes to facilitate comparison and synthesis, based on the assumption that the values are mutually independent. The analysis specifically involved the conversion of t-statistics into effect size values. Effect size is used to reflect the magnitude of the relationship between dependent and independent variables, represented by the Pearson correlation coefficient (r) across variable pairs in the analyzed studies. In this context, the correlation coefficient (r) captures the linkage between Financial Statement Fraud and determinants such as Financial Stability, External Pressure, Personal Financial Need, Financial Targets, Nature of Industry, Ineffective Monitoring, and Rationalization. The statistical conversion to r was performed using the following formula:

$$r = \sqrt{\frac{t^2}{t^2 + df}} \dots\dots\dots (1)$$

After the r statistic value is obtained from each research sample, there are 3 steps that need to be done. Determine the population mean correlation ( $\bar{r}$ ) calculated from the Pearson correlation coefficient (ri) with sample size (Ni).

$$\bar{r} = \frac{\sum(Ni \cdot ri)}{\sum Ni} \dots\dots\dots (2)$$

Calculate the observed variance ( $S_r^2$ ) of all correlation coefficients in the selected research sample using the weighted average square error divided by the number of samples.

$$S_r^2 = \frac{\sum[Ni(ri - \bar{r})^2]}{\sum Ni} \dots\dots\dots (3)$$

The last step is to calculate the estimate of the sampling error variance ( $S_e^2$ ).

$$S_e^2 = \frac{(1 - \bar{r}^2)^2 K}{\sum Ni} \dots\dots\dots (4)$$

In this approach, **K** represents the total number of studies analyzed. After completing the three initial steps, the next task is to compute the **residual variance ( $S_p^2$ )** by subtracting the estimated sampling variance ( $S_e^2$ ) from the observed variance ( $S_r^2$ ). This calculation is intended to yield an unbiased estimate of the variance within the population. Following this, the confidence interval at a specified percentage level (both upper and lower bounds) must be established using the appropriate formulas:

$$\bar{r} - S_p (1.96), \bar{r} + S_p (1.96) \dots\dots\dots (5)$$

The following step involves identifying the presence of **moderating variables**, which are factors that may influence or alter the strength of the relationship being analyzed. These variables contribute to variations in the correlation between two primary variables. To assess the existence of such moderating effects, this study applies the **chi-square test ( $\chi^2_{k-1}$ )**.

$$\chi^2_{k-1} = K \frac{S_r^2}{S_e^2} \dots\dots\dots (6)$$

If the chi-square test yields an insignificant result, it implies that the analyzed research findings are homogeneous. This suggests the absence of moderating variables, indicating that any differences in correlations are due to statistical error rather than the influence of a moderating factor. Conversely, if the chi-square test produces a significant result, it indicates the presence of heterogeneity, signaling the need to incorporate moderating variables in the analysis.

## RESULT AND DISCUSSION

The meta-analysis results indicate a calculated Chi-square value of 32.285, which exceeds the critical Chi-square value of 23.68. This suggests that the External Pressure (EP) variable does not exhibit heterogeneity. Additionally, although the individual studies included in the meta-analysis report varying findings, these differences are likely not due to the measurement proxies used but rather influenced by other factors.

**Table 2.**  
**External Pressure**

|                       | $\Sigma$ Ni | K study | r     | sr2   | se2   | sp2   | se/sr %  | Min   | to | Max   | x2     | z     |
|-----------------------|-------------|---------|-------|-------|-------|-------|----------|-------|----|-------|--------|-------|
| General Meta-Analysis | 1612        | 14      | 0,233 | 0,018 | 0,008 | 0,010 | 43,364   | 0,214 | to | 0,253 | 32,285 | 2,318 |
| F-Score               | 279         | 4       | 0,042 | 0,000 | 0,014 | 0,014 | 3092,276 | 0,015 | to | 0,069 | 0,129  | 0,359 |
| Fraud                 | 751         | 6       | 0,225 | 0,006 | 0,007 | 0,001 | 115,897  | 0,223 | to | 0,227 | 5,177  | 7,162 |
| Earning Management    | 650         | 4       | 0,109 | 0,002 | 0,006 | 0,004 | 242,234  | 0,102 | to | 0,116 | 1,651  | 1,830 |

Source: Processed By Researchers (2025)

The overall meta-analysis results reveal a negative association between External Pressure (EP) and Financial Statement Fraud. This conclusion is supported by a calculated Z value of 2.318, which exceeds the critical Z value of 1.96 at a 5% significance level, indicating that External Pressure (EP) does not significantly impact Financial Statement Fraud. Regarding the Heterogeneity Test, four studies utilizing the F-Score as a proxy for measuring Financial Statement Fraud produced a Z statistic of 0.359, which is below the critical value of 1.96, suggesting a positive relationship between External Pressure (EP) and Financial Statement Fraud when measured by the F-Score. In contrast, six studies employing the Fraud proxy yielded a Z statistic of 7.162, surpassing the critical value of 1.96, indicating a negative relationship between External Pressure (EP) and Financial Statement Fraud according to this proxy. Additionally, four studies using Earnings Management as the proxy showed a Z statistic of 1.830, which is below the critical threshold, implying a positive relationship between External Pressure (EP) and Financial Statement Fraud as measured by Earnings Management.

The overall findings from the meta-analysis reveal that External Pressure (EP) negatively influences Financial Statement Fraud, leading to the rejection of hypothesis H1. This implies that External Pressure (EP) does not contribute to an increase in financial statement fraud within organizations. Furthermore, the heterogeneity test demonstrates variability in outcomes depending on the proxy measurements used for both Financial Statement Fraud and External Pressure (EP), suggesting that differences in measurement proxies impact study results.

**Table 3.**  
**Financial Personal Need**

|                       | $\Sigma$ Ni | K study | r     | sr2   | se2   | sp2   | se/sr %  | Min   | to | Max   | x2    | z     |
|-----------------------|-------------|---------|-------|-------|-------|-------|----------|-------|----|-------|-------|-------|
| General Meta-Analysis | 593         | 6       | 0,128 | 0,010 | 0,010 | 0,000 | 101,766  | 0,128 | to | 0,129 | 5,896 | 9,860 |
| F-Score               | 137         | 2       | 0,080 | 0,021 | 0,014 | 0,007 | 68,066   | 0,067 | to | 0,093 | 2,938 | 0,973 |
| Earning Management    | 366         | 3       | 0,109 | 0,001 | 0,008 | 0,007 | 1115,759 | 0,095 | to | 0,124 | 0,269 | 1,280 |

Source: Processed By Researchers (2025)

The results of the total sample meta-analysis indicate that Financial Personal Need (FPN) has a negative relationship with Financial Statement Fraud. This is indicated by the calculated Z value of 9.860 while the critical value of z table at the 5% significance level shows a value of 1.96 so that this study proves that Financial Personal Need (FPN) has no effect on Financial Statement Fraud. For the Heterogeneity Test, 2 studies that used the F-Score measurement proxy as a measurement of Financial Statement Fraud obtained a z statistic of 0.973, the critical value of z table with a significance level of 5% showed a value of 1.96. This can be interpreted that the relationship between Financial Personal Need (FPN) and Financial Statement Fraud projected by F-Score shows positive results or Financial Personal Need (FPN) affects Financial Statement Fraud. There are 3 studies that use the Earning

Management measurement proxy as a measure of Financial Statement Fraud obtained a z statistic of 1.280, the critical value of z table with a significance level of 5% shows a value of 1.96. So it can be taken that the relationship between Financial Personal Need (FPN) and Financial Statement Fraud projected by Earning Management is positive.

The meta-analysis results indicate that Financial Personal Need (FPN) negatively affects Financial Statement Fraud, resulting in the rejection of hypothesis H2. This suggests that Financial Personal Need (FPN) does not contribute to an increase in fraudulent financial reporting within companies. Additionally, the heterogeneity test reveals that different proxy measurements for both Financial Statement Fraud and Financial Personal Need (FPN) produce varied outcomes, implying that the choice of measurement proxy influences the findings of each study.

**Table 4.**  
**Financial Target**

|                       | $\Sigma Ni$ | K<br>study | r     | sr2   | se2   | sp2   | se/sr %   | Min   | to | Max   | x2     | z      |
|-----------------------|-------------|------------|-------|-------|-------|-------|-----------|-------|----|-------|--------|--------|
| General Meta-Analysis | 1769        | 14         | 0,153 | 0,009 | 0,008 | 0,002 | 79,926    | 0,149 | to | 0,157 | 17,516 | 3,516  |
| F-Score               | 162         | 3          | 0,058 | 0,000 | 0,018 | 0,018 | 10811,796 | 0,023 | to | 0,094 | 0,028  | 0,433  |
| Fraud                 | 751         | 6          | 0,225 | 0,008 | 0,007 | 0,000 | 95,074    | 0,224 | to | 0,226 | 6,311  | 11,654 |
| Earning Management    | 740         | 5          | 0,113 | 0,002 | 0,007 | 0,004 | 293,613   | 0,105 | to | 0,122 | 1,703  | 1,720  |
| M-Score               | 116         | 2          | 0,072 | 0,008 | 0,017 | 0,009 | 207,995   | 0,055 | to | 0,090 | 0,962  | 0,768  |

Source: Processed By Researchers (2025)

The overall findings from the meta-analysis indicate that Financial Target (FT) has a negative association with Financial Statement Fraud. This is evidenced by a calculated Z-score of 3.516, which exceeds the critical z-value of 1.96 at the 5% significance level, suggesting that Financial Target does not significantly influence Financial Statement Fraud. In the heterogeneity test, three studies employing the F-Score as a proxy for measuring Financial Statement Fraud yielded a z-score of 0.433, which is below the critical threshold, implying a positive relationship—indicating that Financial Target may have an influence when measured using the F-Score. Meanwhile, six studies using the Fraud proxy produced a z-score of 11.654, surpassing the critical value and suggesting a negative association between Financial Target and Financial Statement Fraud. Additionally, five studies using Earnings Management as a proxy resulted in a z-score of 1.720, which falls just below the critical value, pointing to a positive relationship. Lastly, two studies utilizing the M-Score as a proxy reported a z-score of 0.768, also below the threshold, indicating a positive correlation between Financial Target and Financial Statement Fraud under this measurement.

The overall meta-analysis findings reveal that Financial Target (FT) has a negative effect on Financial Statement Fraud, leading to the rejection of hypothesis H3. This means that Financial Target (FT) does not contribute to an increase in fraudulent financial reporting within organizations. Moreover, the heterogeneity test indicates that varying proxy measurements for both Financial Statement Fraud and Financial Target (FT) yield different results, suggesting that the choice of measurement proxy influences the study outcomes.

**Table 5.**  
**Financial Stability**

|                       | $\Sigma$ Ni | K study | r     | sr2   | se2   | sp2   | se/sr %  | Min   | to | Max   | x2     | z     |
|-----------------------|-------------|---------|-------|-------|-------|-------|----------|-------|----|-------|--------|-------|
| General Meta-Analysis | 1704        | 14      | 0,216 | 0,026 | 0,007 | 0,018 | 28,772   | 0,180 | to | 0,252 | 48,659 | 1,588 |
| F-Score               | 172         | 4       | 0,464 | 0,000 | 0,014 | 0,014 | 3190,123 | 0,437 | to | 0,491 | 0,125  | 3,941 |
| Fraud                 | 751         | 6       | 0,166 | 0,031 | 0,008 | 0,024 | 24,172   | 0,119 | to | 0,212 | 24,822 | 1,075 |
| Earning Management    | 755         | 6       | 0,153 | 0,000 | 0,008 | 0,007 | 2654,381 | 0,138 | to | 0,167 | 0,226  | 1,788 |
| M-Score               | 126         | 2       | 0,360 | 0,002 | 0,012 | 0,010 | 600,878  | 0,341 | to | 0,380 | 0,333  | 3,598 |

Source: Processed By Researchers (2025)

The meta-analysis results from the entire sample show a positive association between Financial Stability (FS) and Financial Statement Fraud. This is evidenced by a calculated Z value of 1.588, which, although below the critical Z value of 1.96 at the 5% significance level, suggests that Financial Stability (FS) influences Financial Statement Fraud. In the Heterogeneity Test, four studies using the F-Score as a proxy for Financial Statement Fraud reported a Z statistic of 3.941, exceeding the critical value of 1.96, indicating a negative relationship between Financial Stability (FS) and Financial Statement Fraud when measured by F-Score. Six studies employing the Fraud proxy showed a Z value of 1.075, below the critical threshold, implying a positive correlation between Financial Stability (FS) and Financial Statement Fraud under this measure. Similarly, six studies using Earnings Management as a proxy yielded a Z value of 1.788, which is also under the critical limit, suggesting a positive link between Financial Stability (FS) and Financial Statement Fraud. Lastly, two studies applying the M-Score proxy showed a Z statistic of 3.598, above the critical value, pointing to a negative relationship between Financial Stability (FS) and Financial Statement Fraud as measured by M-Score.

The general meta-analysis results demonstrate that Financial Stability (FS) positively influences Financial Statement Fraud, leading to the acceptance of hypothesis H4. This indicates that Financial Stability (FS) contributes to an increase in fraudulent financial reporting within companies. Additionally, the heterogeneity test reveals that different proxy measurements for both Financial Statement Fraud and Financial Stability (FS) produce varying outcomes, suggesting that the selection of measurement proxies affects the findings of individual studies.

**Table 6.**  
**Nature Industry**

|                       | $\Sigma$ Ni | K study | r     | sr2   | se2   | sp2   | se/sr % | Min   | to | Max   | x2     | z     |
|-----------------------|-------------|---------|-------|-------|-------|-------|---------|-------|----|-------|--------|-------|
| General Meta-Analysis | 1452        | 14      | 0,219 | 0,036 | 0,009 | 0,027 | 24,249  | 0,165 | to | 0,272 | 57,734 | 1,323 |
| F-Score               | 172         | 4       | 0,237 | 0,020 | 0,021 | 0,001 | 103,252 | 0,236 | to | 0,239 | 3,874  | 9,295 |
| Fraud                 | 664         | 5       | 0,126 | 0,016 | 0,007 | 0,008 | 46,762  | 0,110 | to | 0,142 | 10,692 | 1,382 |
| Earning Management    | 500         | 3       | 0,325 | 0,030 | 0,005 | 0,026 | 15,770  | 0,275 | to | 0,375 | 19,024 | 2,031 |
| M-Score               | 116         | 2       | 0,262 | 0,101 | 0,015 | 0,086 | 14,863  | 0,094 | to | 0,430 | 13,456 | 0,894 |

Source: Processed By Researchers (2025)

The overall findings from the meta-analysis suggest that the Nature of Industry variable is positively associated with Financial Statement Fraud. This is evidenced by a computed Z-score of 1.323, which falls below the 5% significance level threshold of 1.96, indicating that Nature of Industry influences Financial Statement Fraud. In the heterogeneity analysis, four studies utilizing the F-Score as a proxy for Financial Statement Fraud produced a Z-score of 9.295, surpassing the critical value of 1.96, implying a negative relationship when fraud is measured using F-Score. Meanwhile, five studies using the Fraud proxy reported a Z-score of 1.385, suggesting a positive connection between Nature of Industry and Financial Statement Fraud, although it does not exceed the significance threshold. Additionally, three studies that applied Earnings Management as the proxy generated a Z-score of 2.031, which exceeds the 1.96 benchmark, indicating a negative correlation. Lastly, two studies using the M-Score proxy yielded a Z-score of 0.894, below the 1.96 threshold, implying a positive but

statistically insignificant relationship between Nature of Industry and Financial Statement Fraud when measured through M-Score.

The overall meta-analysis findings indicate that Nature of Industry positively affects Financial Statement Fraud, leading to the acceptance of hypothesis H5. This suggests that the Nature of Industry contributes to an increase in fraudulent activities in financial reporting within companies. Furthermore, the heterogeneity test reveals that the use of different proxy measurements for both Financial Statement Fraud and Nature of Industry results in varied outcomes, implying that the choice of measurement proxies influences the results across studies.

The results of the total sample meta-analysis indicate that Ineffectiveness Monitoring has a positive relationship with Financial Statement Fraud. This is indicated by the calculated Z value of 1.239 while the critical value of z table at the 5% significance level shows a value of 1.96 so that this study proves that Ineffective Monitoring has an effect on Financial Statement Fraud. For the Heterogeneity Test, 3 studies that used the F-Score measurement proxy as a measurement of Financial Statement Fraud obtained a z statistic of 1.696, the critical value of z table with a significance level of 5% showed a value of 1.96. This can be interpreted that the relationship between Ineffectiveness Monitoring and Financial Statement Fraud projected by F-Score shows positive results. There are 5 studies that use the Fraud measurement proxy as a measurement of Financial Statement Fraud, the z statistic result is 1.164, the critical value of z table with a significance level of 5% shows a value of 1.96. This can be interpreted that the relationship between Ineffective Monitoring and Financial Statement Fraud projected with Fraud is Positive. There are 3 studies that use the Earning Management measurement proxy as a measure of Financial Statement Fraud, the z statistic result is 0.849, the critical value of z table with a significance level of 5% shows a value of 1.96. So, it can be taken that the relationship between Ineffective Monitoring and Financial Statement Fraud projected by Earning Management is positive.

**Table 7.**  
**Ineffective Monitoring**

|                       | $\sum Ni$ | K study | r     | sr2   | se2   | sp2   | se/sr % | Min   | to | Max   | x2     | z     |
|-----------------------|-----------|---------|-------|-------|-------|-------|---------|-------|----|-------|--------|-------|
| General Meta-Analysis | 1123      | 11      | 0,108 | 0,017 | 0,010 | 0,008 | 55,576  | 0,093 | to | 0,123 | 19,793 | 1,239 |
| F-Score               | 147       | 3       | 0,133 | 0,014 | 0,020 | 0,006 | 145,777 | 0,121 | to | 0,145 | 2,058  | 1,696 |
| Fraud                 | 721       | 5       | 0,127 | 0,019 | 0,007 | 0,012 | 36,024  | 0,104 | to | 0,150 | 13,879 | 1,164 |
| Earning Management    | 255       | 3       | 0,041 | 0,009 | 0,012 | 0,002 | 124,497 | 0,036 | to | 0,045 | 2,410  | 0,849 |

Source: Processed By Researchers (2025)

The general meta-analysis results demonstrate that Ineffective Monitoring has a positive impact on Financial Statement Fraud, supporting the acceptance of hypothesis H6. This indicates that Ineffective Monitoring contributes to an increase in fraudulent financial reporting within organizations. Additionally, the heterogeneity test shows that different proxy measurements for both Financial Statement Fraud and Ineffective Monitoring yield varying results, suggesting that the choice of measurement proxies influences study outcomes.

**Table 8.**  
**Rationalization**

|                       | $\Sigma$ Ni | K<br>study | r      | sr2     | se2     | sp2     | se/sr %  | Min       | to | Max      | x2       | z     |
|-----------------------|-------------|------------|--------|---------|---------|---------|----------|-----------|----|----------|----------|-------|
| General Meta-Analysis | 1479        | 16         | 3,976  | 951,702 | 2,373   | 949,328 | 0,249    | -1856,708 | to | 1864,660 | 6416,731 | 0,129 |
| F-Score               | 172         | 4          | 0,271  | 0,067   | 0,020   | 0,047   | 29,856   | 0,179     | to | 0,363    | 13,398   | 1,250 |
| Fraud                 | 750         | 6          | 0,204  | 0,021   | 0,007   | 0,014   | 34,759   | 0,177     | to | 0,231    | 17,262   | 1,737 |
| Earning Management    | 341         | 3          | 16,510 | 53,440  | 648,866 | 595,426 | 1214,192 | -1150,525 | to | 1183,544 | 0,247    | 0,677 |
| M-Score               | 216         | 3          | 0,238  | 0,072   | 0,012   | 0,060   | 17,053   | 0,120     | to | 0,356    | 17,592   | 0,972 |
| TATA                  | 141         | 3          | 0,458  | 0,058   | 0,013   | 0,045   | 22,860   | 0,370     | to | 0,546    | 13,123   | 2,162 |

Source: Processed By Researchers (2025)

The meta-analysis results based on the entire sample reveal a positive association between Rationalization and Financial Statement Fraud. This is supported by a calculated Z value of 0.129, compared to the critical Z value of 1.96 at a 5% significance level, indicating that Rationalization influences Financial Statement Fraud. In the Heterogeneity Test, four studies that utilized the F-Score as a proxy for Financial Statement Fraud reported a Z statistic of 1.250, which is below the critical value, suggesting a negative relationship between Rationalization and Financial Statement Fraud when measured by the F-Score. Six studies using the Fraud proxy produced a Z value of 1.737, also below the critical threshold, indicating a positive correlation between Rationalization and Financial Statement Fraud in these studies. Three studies employing Earnings Management as the measurement proxy showed a Z statistic of 0.677, which is less than 1.96, thus supporting a positive association. Likewise, three studies using the M-Score proxy reported a Z value of 0.972, indicating a positive link between Rationalization and Financial Statement Fraud. Conversely, three studies applying the TATA proxy yielded a Z statistic of 2.162, exceeding the critical value, which suggests a negative relationship between Rationalization and Financial Statement Fraud when measured by TATA.

The overall findings from the meta-analysis indicate that Rationalization positively influences Financial Statement Fraud, leading to the acceptance of hypothesis H7. This suggests that Rationalization contributes to the escalation of fraudulent activities in a company's financial reporting. Furthermore, the heterogeneity test reveals that varying proxy measurements for both Financial Statement Fraud and Rationalization produce different outcomes, implying that the selection of measurement proxies impacts the results across studies.

## CONCLUSION

This study aims to investigate the factors influencing Financial Statement Fraud, specifically examining External Pressure (EP), Personal Financial Need (FPN), Financial Target (FT), Financial Stability (FS), Nature of Industry, Ineffective Monitoring, and Rationalization. Through a meta-analysis method, the results indicate that Financial Stability, Nature of Industry, Ineffective Monitoring, and Rationalization have a positive impact on Financial Statement Fraud, whereas External Pressure, Personal Financial Need, and Financial Target exhibit a negative impact. Additionally, the heterogeneity test reveals that differences in proxy measurements for both Financial Statement Fraud and the Fraud Triangle elements moderate their relationship. These findings imply that the choice of proxies can cause variations in study results.

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