Understanding Fraud Detection with the Heptagon Fraud Model and Income Tax Moderation: Evidence from Indonesia

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ABSTRACT

According to the ACFE Occupational Fraud (2022), manufacturing businesses had 194 potential cases of fraud and Indonesia had more than 239 (ACFE, 2019). This prompted studies that aimed to gather empirical data to investigate the possibility if tax incentives have an impact on Fraudulent Financial Reporting (FFR) in Indonesian public manufacturing firms. Only 291 of the 53 firms' data from the six-year period (2017–2022) were ultimately used. This research used the Heptagon Fraud Model namely; Incentive/Pressure, Opportunity, Attitude/Rationalization, Capability, Arrogance, Ignorance and Greed as the independent variable and indicators related to tax using Income Tax Rate to measure the role of the moderating variable. SPSS research results revealed that Incentive/Pressure and Arrogance had positive influence on detecting FFR whereas Ignorance, Opportunity, Attitude/Rationalization, Capability, and Greed had a negative impact on detecting Fraudulent Financial Reporting. In addition, Income Tax Rate had a strong impact on Incentive, Capability and Greed in influencing FFR. This research explained the phenomenon of FFR and how it could benefit regulators, management, and various stakeholders in FFR detection. Accordingly, this study contributes to previous studies in the income tax rate context and adds to its puzzle by providing wider indicators on the fraud model.

Keywords: Fraud, Heptagon Fraud Model, Fraudulent Financial Reporting, Tax Motives, Beneish M-score

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INTRODUCTION

Fraudulent financial reporting (FFR) is an issue that gives significant consequences to the stakeholder and the corporation as it is affected by financial loss, reputational damage, legal and regulatory action, and stakeholder distrust in corporate settings (Zager et al., 2016). The Occupational Fraud 2022 (ACFE) revealed that 42% of fraud in the company was detected from things like doing tips which were turned by employees as a forum for manipulating the entry and exit of company cash. In Indonesia, ACFE (2019), found 239 fraud cases, including 167 cases of corruption, 50 cases of misuse of assets and 22 cases of fraud in financial statements. The main source of fraud is the actions of the company's employees, with 38.9% of respondents stating that reporting media contributed the most to the disclosure of fraud, followed by internal audit at 23.4%. The main source of fraud is the actions of the company's employees, as stated in the Report to the Nations (2018).

With the concern of how impacting fraud is to companies, studies in the manufacturing sector have been carried out using the Fraud Diamond Theory (Ozcelik, 2020) which states that the fraud diamond is an expansion of the fraud triangle which consists of opportunity, pressure, and rationalization. This Theory adds that the opportunity element opens the possibility of another view to commit fraud, namely capability. The Fraud Pentagon Theory (Akbar, 2017; Fathmaningrum & Budgeti, 2021), shows an indication of arrogance where the CEO who has a lot of photos in the annual report will believe that he is in power, thus, he can influence all policies in the company. If the policy is not profitable for him, then he feels he has the right to refuse and change the policy, including committing fraudulent acts. The Fraud Hexagon Theory (Meidijati & Amin, 2022) explained that ego due to kinship in the company still often occurs which results in CEO duality. However new findings about the Fraud Heptagon Theory against State-Owned Enterprises (Handoko et al., 2022) found that incentives can intensify pressure, leading to increased likelihood of fraudulent actions and how rationalization influences employees' attitudes towards their work.

Fraud, including misusing assets and defrauding employees, can negatively impact business growth and continuity (Ozcelik, 2020). Therefore, the key influence on the quality of financial statements is fraud, and concerns about business losses due to fraudulent reports are increasing (Ebaid, 2023). The study of fraud factors in Indonesia using the Heptagon Fraud Theory is intriguing due to the country's democratic system and the requirement for companies to prepare annual financial reports. These reports are used to assess financial conditions, evaluate reporting efficiency, and help to comply with laws and regulations required by Law no. 17 on State Finances issued in 2003, in which companies are required to prepare and submit annual financial reports, which are then audited by the Supreme Audit Agency.

Being a developing country, Indonesia grapples with rampant corruption, including bribery, fund embezzlement, extortion, and gratuities are distressingly normalized within business practices. Corporate fraud and corruption are the most pressing unmanaged commercial risk of our time (Iyer & Samociuk, 2006). Despite

previous endeavors, major fraud and bribery scandals persist, mirroring the circumstances of two decades ago. Iyer and Samociuk (2006) further contend that numerous executives have dedicated considerable efforts over the past few decades to establish extensive governance frameworks and corporate controls, which should have been in place. Hence, fraud detection measures become crucial in mitigating existing fraudulent activities because the company's ability to work against various forms of risk is crucial as it influences the decisions made by shareholders (Mazumder & Hossain, 2018).

This study examined the moderating role of income tax rate (ITR) on the effectiveness of the Heptagon Fraud Model in detecting FFR in Indonesia. It argued that companies often reduce tax payments and avoid them through fraudulent financial reports. The study added additional components to the Heptagon Fraud Model to explain fraudulent behavior, which cannot be fully explained in the Hexagon Fraud Model. The Directorate General of Taxes is under the Ministry of Finance which oversees Indonesia's tax system. Unfortunately, this system still provides opportunities for individuals to engage in tax evasion practices because taxpayers are accountable for calculating and reporting their own tax liabilities to the government. Deliberate non-payment of taxes constitutes tax evasion (Marriott & Sim, 2017). Detection of FFR in taxation is crucial for ensuring adherence to tax laws and regulations, safeguarding individuals and organizations from financial penalties. Research conducted by Meidijati and Amin (2022) demonstrated the efficacy of the hexagon fraud model in detecting instances of FFR, with a moderated relationship of ITR between fraud and financial reporting. Countries with lower ITR have a stronger association with FFR, possibly due to lack of stringent oversight and regulation.

Distinct from the previous research, this study introduced an innovative element by considering ITR as a moderating factor within the Heptagon Fraud Model Framework. This addition enhanced the understanding of the Indonesian tax system’s strictness in influencing fraud and financial reporting. The study explored the interaction of tax rates and fraudulent actions, offering insights into improving tax compliances and addressing tax-related fraud. This research aligned with Indonesia’s current socio-economic situations, where corruption issues and transparency are prevalent. By addressing this gap, this research broadened the reach of fraud theories and applied insights from manufacturing, enhancing the depth of analysis and potential impact across finance, law, governance, and psychology. As this study bridged the worlds of academia and practice, it was expected to influence good corporate governance (CG) to reduce the possibility of a company to encounter fraud, to improve internal control procedures by identifying the areas of improvement in Indonesian’s manufacturing business thereby fostering a more resilient and reliable business environment.

LITERATURE REVIEW

This study examined the impact of the components in the Fraud Heptagon Model on fraudulent financial reporting, using income tax rate as moderation. The fraud triangle

developed by Cressey (1953) which consists of three components: pressure, opportunity and rationalization is a model that is widely used to explain the factors that cause someone including regulators, professionals, and academics to commit fraud and explain why offenders commit fraud. The Fraud diamond theory (Wolfe & Hermanson, 2004) added new factors that lead to fraud, namely capabilities in addition to the three previous factors, namely opportunity, rationale and pressure. After the development of the Fraud Diamond Theory, in 2011, Crowe found the Fraud Pentagon Model, where it becames pressure, opportunity, rationalization, capability, and arrogance. Then, the model continued to evolve because there were more factors that caused fraud to continue to grow. Therefore, the Fraud Hexagon Theory by Vousinas (2019) added arrogance which again developed into a Hexagon Fraud Model with the addition of collusion. The Fraud Heptagon Model is the newest model by Yusof (2015) which found seven factors of fraud, namely incentive/pressure, opportunity, attitude/rationalization, capability, arrogance, ignorance, and greed. These models continue to evolve as fraud continues to grow.

Fraud Theory

The Chartered Institute of Management Accountants (2009) defined corporate fraud as dishonest practices used to gain personal benefits and cause harm to others, including theft, corruption, money laundering, embezzlement, and bribery. Karpoff et al. (1999) classified corporate fraud into four categories: financial reporting fraud, government fraud, stakeholder fraud, and regulatory violations. Financial needs, personal gain, power drives, and greed were common motivators for fraud, including FFR (Desai, 2020). It is simpler to see potential red flags and shortcomings in the financial reporting systems when these motivations are understood. Fraud causes significant costs for organization causing business to collapse, particularly for small businesses (Nawawi & Salin, 2018).

Agency Theory

The Agency Theory posits that conflict of interest between principals and agents can lead to agency problems, resulting in agency costs, encompassing monitoring and incentive expenses, ultimately diminishing the organization's overall value (Jensen & Meckling, 1976). A corporate governance model proposed in a study conducted by Fama and Jensen (1983) suggests that the board's effectiveness depends on its independence, expertise, and incentives. Balancing incentives between principals and agents is crucial to reduce agency issues. Efficient monitoring methods, such as performance assessments, audits, and corporate governance frameworks, can help save agency expenses and reduce fraudulent activity risks.

HYPOTHESIS DEVELOPMENT

Extensive research shows that incentives play a crucial role in the detection of FFR. Johnson et al. (2009) revealed that organizations offering higher incentives for

reporting fraud are more likely to uncover fraudulent activities. The nature of incentives is crucial, as different types can yield varying effects on the likelihood of FFR. Similarly, Hass et al. (2016) found that equity incentives, particularly within state-owned enterprises (SOEs), significantly contributed to corporate fraud. Incentives arise from pressure to encourage fraud to get the promised rewards in connection with certain goals (Handoko et al., 2022) and in particular when tied to short-term financial performance metrics. Collectively, these studies substantiated the hypothesis that incentives exert a substantial influence on the detection of FFR. Building upon this explanation, the research posited the following hypothesis.

H1a: Incentive has a positive effect on the detection of FFR.

Financial pressure is a common issue in companies where management is tasked with maintaining and enhancing the company's asset value. This pressure can lead to manipulation of financial statements to artificially inflate the company's value. A study by Zhou et al. (2018) found that delisting pressure, referring to the threat of a company being removed from a stock exchange due to poor financial performance or other reasons, can create strong incentives for corporate executives to engage in FFR. In China, financial performance goals, job insecurity, and personal financial difficulties are significant predictors of fraud in state-owned enterprises (Owusu et al., 2022). The pressure to achieve certain financial targets contributes to fraudulent behaviour. Based on this explanation, the research posited the following hypothesis.

H1b: Pressure has a positive effect on the detection of FFR.

Opportunity refers to the potential for financial fraud, often facilitated by weaknesses in a company's internal controls or external oversight mechanisms. This study used the ratio of external board members to measure the effectiveness of corporate internal control (BDOUT). Suh's (2019) study identified weaknesses in internal controls, inadequate management practices, and a lack of effective oversight as the root causes of opportunities for fraud within financial institutions. Meidijati and Amin (2022) further revealed a negative correlation between opportunity level within an organization and the detection of FFR, making it more challenging. Building upon this explanation, the research proposed the following hypothesis.

H2: Opportunity has a negative effect on the detection of FFR.

Attitudes towards fraud are influenced by individual personality traits such as narcissism or machiavellianism, as well as the prevailing organizational culture that may endorse unethical conduct (Murphy & Dacin, 2011). The research emphasized the importance of organizational culture in shaping attitudes towards fraud. Individuals may rationalize their actions due to perceived injustices or shortcomings in the system. Therefore, historical financial restatements by company’s management serves as a proxy for attitude. Conversely, those with a negative attitude towards fraud are less likely to engage in fraudulent behavior. According to Johnson et al. (2013), attitude stands as a significant factor in the occurrence of FFR and is influenced by the attitudes and behaviors of organizational leaders. Building upon these insights, the research proposed the following hypothesis.

H3a: Attitude has a positive effect on the detection of FFR.

Rationalization is the act justifying or exacerbating one's actions, even if it violates ethical or moral standards. It can lead to individuals downplaying the negative consequences of their actions and viewing their actions as acceptable or justifiable. For example, if an organization rewards aggressive sales tactics, employees may be more likely to engage in fraudulent behavior to meet their targets. Frequent modifications to accounting procedures can also serve as a proxy for rationalization (Handoko et al., 2020), where management interacts with auditors. Shepherd and Button (2019) suggested that organizational culture and norms can contribute to rationalization, as individuals may feel pressure to conform to prevailing attitudes. Rationalization is often combined with other factors, such as pressure and opportunity to create a perfect storm of conditions that make FFR possible (Schnatterly et al., 2018). Based on this explanation, the research posited the following hypothesis.

H3b: Rationalization has a positive effect on the detection of FFR.

Capability refers to an individual's skills, knowledge, and ability to commit fraudulent acts. Restirring et al. (2019) found that individuals with access to sensitive information, technical skills, and financial expertise are more likely to commit fraud. The fraud diamond model was used to examine factors contributing to public procurement fraud. High capability individuals are more likely to conceal their fraudulent activities, making fraud detection more difficult (Rustiarini et al., 2019). This suggests that high capability is a significant predictor of public procurement fraud. Based on this explanation, the research had the following hypothesis.

H4: Capability has a positive effect on the detection of FFR.

Arrogance, characterized by excessive self-importance and confidence, can lead to unethical actions and risk-taking. This often occurs in an environment lacking accountability, fostering a belief in invulnerability to consequences. Arrogance includes attitudes that can encourage fraud, as seen in CEO photos or CEO dualism in annual reports (Yusof, 2015). Pamungkas et al. (2018) discovered a positive correlation between arrogance and FFR suggesting that individuals with overconfidence and disregard for others' perspectives are more prone to engage in fraudulent activities. This phenomenon extends to high-level executives, including CEOs and CFOs, who may disregard ethical standards for their own interests. Based on these insights, the research endeavoured to test the following hypotheses.

H5: Arrogance has a positive effect on the detection of FFR.

Ignorance in corporate governance refers to a lack of understanding or knowledge about a particular subject or situation. In the context of FFR, ignorance can lead to individuals being unaware of fraud or lacking the knowledge to detect and prevent it. Corporate governance mechanisms govern the relationship between managers and shareholders (Black et al., 2006), and ignorance can negatively impact it by ignoring the importance of other stakeholders such as employees, customers, suppliers, and society (Hendry, 2001). Ignorance is defined as the time required for submitting annual financial statements until the financial year's conclusion (Yusof, 2015), which is approximated by the presence of corporate governance courses. Ignorance of the needs and interests of other stakeholders can lead to poor corporate

governance practices that prioritize short-term financial gains that can lead to financial statement fraud. A study by Yusof (2015) concluded that employees or directors who are ignorant with the training provided by companies are one of the reasons for fraud in reporting. Based on this explanation, this study had the following hypothesis.

H6: Ignorance has a positive effect on the detection of FFR.

Greed can lead to a culture of dishonesty in an organization, where employees are incentivized to meet financial targets at any cost, even if it means engaging in fraudulent behavior. Greed is a constant desire for more often proxied by directors and leaders through remuneration (Yusof, 2015). High remuneration, such as bonuses and incentives, can create incentives that encourage greed and fraudulent behavior Akinyomi (2012). Employees may feel pressured to meet targets and earn bonuses, believing fraudulent activities are the only way to achieve these goals. This study hypothesized that greed is a key factor in this culture. Based on this explanation, this study had the following hypothesis.

H7: Greed has a positive effect on the detection of FFR.

According to Article 17 of the Income Tax Law, the 2022 income tax rate (ITR) has been reduced to 20% from 22% in the 2020-2021 period, 2% lower than the previous rate of 22%. Both closed and publicly listed companies were subject to distinct rates. The government introduced an additional 3% reduction in the corporate ITR, building upon the previously reduced rate. Entities that satisfied specific requirements became eligible for this 3% rate reduction. Companies can now secure a corporate ITR of up to 19% for the 2020 and 2021 tax years and 17% for the 2022 tax year, provided they meet several criteria. These criteria include having shares controlled by a minimum of 300 parties, holding shares below 5% of the total traded shares in a public company, holding fully paid shares for at least 183 calendar days within a single tax year, and fulfilling reporting obligations to the Directorate General of Taxes.

While prioritizing the effectiveness, benefits, and clarity of fair tax laws, the determination of ITR holds significant importance in the calculation of taxes owed. The study conducted by Handayani and Rachmawati (2022) highlighted that despite perceived burdens on company earnings, tax avoidance practices persist due to the belief that corporate tax rates negatively influence such behavior. It supported Moeljono's (2020) argument that taxes are essential for government revenue but simultaneously impact a corporation's net income by imposing financial constraints over time.

Although lower ITR may not completely eradicate tax avoidance, there is a projected increase in corporate tax avoidance with higher rates compared to lower rates. It was mentioned earlier that public companies can avail themselves of a reduced ITR by meeting the requirements specified in Article 3, paragraph (1), part c. The level of income tax imposed by a country plays a critical role in shaping the prevalence of FFR. Consequently, FFR is likely to be influenced by publicly owned companies that benefit from a lower ITR in contrast to the standard rate. This rationale forms the foundation for the research hypothesis developed by the researcher.

H8a: ITR *has a strong impact on Incentive in the detection of FFR.*

H8b: ITR *has a weak impact on Pressure in the detection of FFR.*

H9: ITR *has a strong impact on Opportunity in the detection of FFR.*

H10a: ITR *has a weak impact on Attitude in the detection of FFR.*

H10b: ITR *has a weak impact on Rationalization in the detection of FFR.*

H11: ITR *has a strong impact on Capability in the detection of FFR.*

H12: ITR *has a weak impact on Arrogance in the detection of FFR.*

H13: ITR *has a weak impact on Ignorance in the detection of FFR.*

H14: ITR *has a strong impact on Greed in the detection of FFR.*

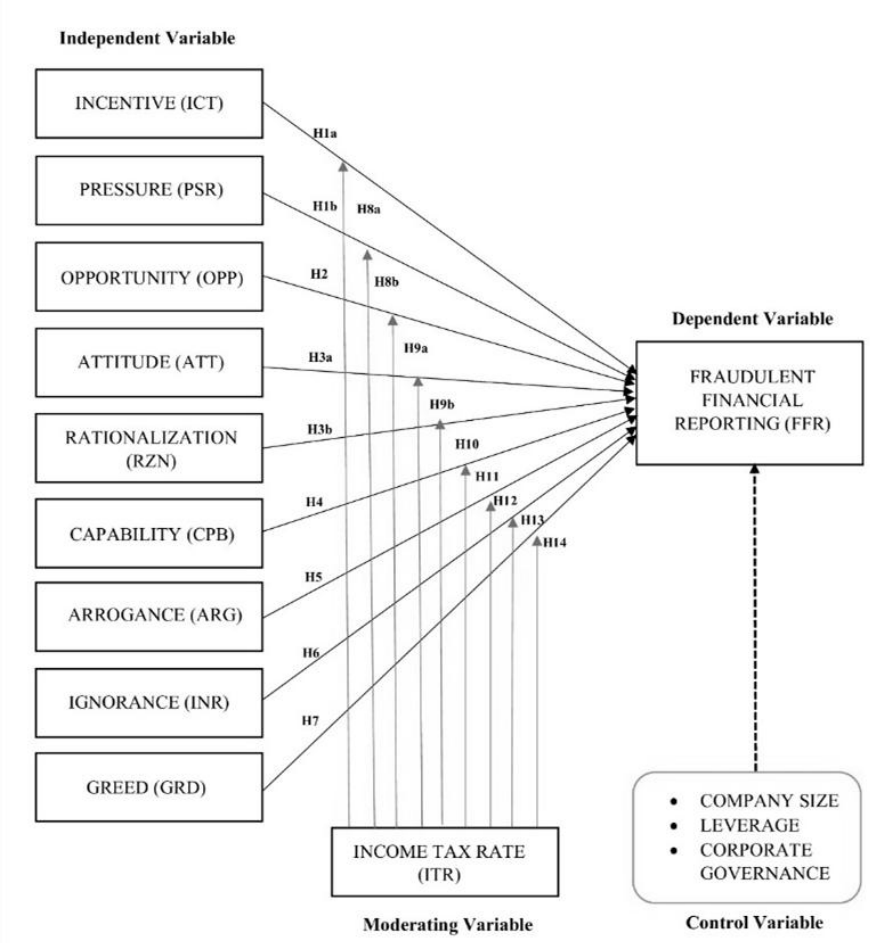

Figure 1: Research Model

METHODOLOGY

Data and Samples

Table 1: Sample Selection Method

	Drop	Company-years
Initial sample*		1446
Companies that have missing data	(960)	
Companies with incomplete older financial statements	(168)	
Final sample		318
Normalized sample used		291

*Initial sample of all Indonesian listed manufacturing companies over the 2017-2022 period.

This research used data from the Indonesia Stock Exchange from 2017-2022 to analyze the relationship between various factors in manufacturing companies. The manufacturing industry was hugely impacted by COVID-19 because of lockdowns and the remote work application (Ardolino & Ivanov, 2022). Thus, this study sought to understand how it can increase the likelihood of FFR within 2017-2022. After identifying 241 initial samples with a 6-year gap, 160 missing data, and 28 incomplete older financial statements, only 53 companies were included in the final sample. After normality testing, only 291 data were used. Empirical analysis (SPSS) was used to explain the relationship between FFR (dependent variable), ICT/PSR, OPP, ATT/RZN, CPB, ARG, INR, and GRD (independent variables), with ITR (moderating variable) and control variables such as Company Size (CSZ), Leverage (LEV), and Corporate Governance (CG). Research questions will be answered through hypothesis testing to obtain consistent data analysis results that support the research hypothesis. This study presented an equation model based on the operational definition and measurement of variables.

$$FFR = \beta_0 + \beta_1\, ICT + \beta_2\, PSR + \beta_3\, OPP + \beta_4\, ATT + \beta_5\, RZN + \beta_6\, CPB + \beta_7\, ARG + \beta_8\, INR + \beta_9\, GRD + \beta_{10}\, ICT * ITR + \beta_{11}\, PSR * ITR + \beta_{12}\, OPP * ITR + \beta_{13}\, ATT * ITR + \beta_{14}\, RZN * ITR + \beta_{15}\, CPB * ITR + \beta_{16}\, ARG * ITR + \beta_{17}\, INR * ITR + \beta_{18}\, GRD * ITR + \beta_{19}\, CSZ + \beta_{20}\, PRF + \beta_{21}\, LEV + \beta_{22}\, CG \quad (1)$$

Variable Measurement

Dependent Variable

FFR: The dependent variable used in this study was fraudulent financial reporting (FFR). Financial statement fraud was defined as intentional fraud, including the omission of quantities or disclosures in financial statements, with the aim of deceiving users of financial statements, resulting in losses to many parties. Financial reports were the main mechanism used by companies to communicate financial information to outsiders (Jatmiko et al., 2020). The Beneish M-Score model was used

to assess financial statement fraud, using eight financial ratios in financial statements to identify or indicate the risk of fraudulent acts in financial reporting. The following were the eight Beneish ratios that needed to be calculated and combined to achieve a M-Score Formula:

Table 2: Beneish Ratios

Ratio	Proxy	Formula
DSRI	Days Sales in Receivable Index	$\frac{\frac{\text{Receivable}_t}{\text{Sales}_t}}{\frac{\text{Receivables}_{t-1}}{\text{Sales}_{t-1}}}$
GMT	Gross Margin Index	$\frac{\frac{\text{Sales}_{t-1} - \text{COGS}_{t-1}}{\text{Sales}_{t-1}}}{\frac{\text{Sales}_t - \text{COGS}_t}{\text{Sales}_t}}$
AQI	Asset Quality Index	$\frac{1 - \frac{\text{CA}_t + \text{PPE}_t}{\text{Total Asset}_t}}{1 - \frac{\text{CA}_{t-1} + \text{PPE}_{t-1}}{\text{Total Asset}_{t-1}}}$
GI	Sales Growth Index	$\frac{\text{Sales}_t}{\text{Sales}_{t-1}}$
DEPI	Depreciation Index	$\frac{\frac{\text{Depreciation}_{t-1}}{\text{Depreciation}_{t-1} + \text{PPE}_{t-1}}}{\frac{\text{Depreciation}_t}{\text{Depreciation}_t + \text{PPE}_t}}$
SGAI	Sales, General and Administrative Expenses Index	$\frac{\frac{\text{SGA}_t}{\text{Sales}_t}}{\frac{\text{SGA}_{t-1}}{\text{Sales}_{t-1}}}$
LVGI	Leverage Index	$\frac{\frac{\text{Current Liabilities}_t - \text{LTD}_t}{\text{Total Assets}_t}}{\frac{\text{Current Liabilities}_{t-1} - \text{LTD}_{t-1}}{\text{Total Assets}_{t-1}}}$
TATA	Total Accrual to Total Asset	$\frac{\text{Income Before Extraordinary Items - Cash from Operations}}{\text{Total Assets}_t}$

$$\textit{M-Score} = -4.84 + 0.920\,\textit{DSRI} + 0.528\,\textit{GMI} + 0.404\,\textit{AQI} + 0.892\,\textit{LVGI} + 4.697\,\textit{TATA SGI} + 0.115\,\textit{DEPI} - 0.172\,\textit{SGAI} - 0.327\,\textit{LVG}\text{I} \quad (2)$$

Businesses with a Beneish M-Score of more than -2.22 were classified as committing financial reporting fraud. While those with a score of less than -2.22 were not.

Independent Variable

This study used the Heptagon Fraud Model to measure the independent variable, with operational definitions provided for easier identification.

Table 3: Independent Variable Description

Variables	Proxy Variables	Formula	Source from Annual Reports
Incentive	Return On Asset	$\frac{\text{Net Income}}{\text{Total Assets}}$	Statement of Comprehensive Income
Pressure	Leverage	$\frac{\text{Total Liabilities}}{\text{Total Asset}}$	Statement of Financial Position
Opportunity	Ineffective Monitoring (BDOUT)	$\frac{\text{Independent Commissioners}}{\text{Total Commissioners}}$	Board of Directors
Attitude	Financial Restatement Change	A dummy variable labelled 1 if it occurred between 2017 and 2022; otherwise, it was coded 0	Financial Highlights
Rationalization	Change in Accounting Policy	A dummy variable labelled 1 if it occurred between 2017 and 2022; otherwise, it was coded 0	Notes to Financial Statements
Capability	Changes in Directors	A dummy variable labelled 1 if it occurred between 2017 and 2022; otherwise, it was coded 0	Board of Directors
Arrogance	Changes in CEO's photo	A dummy variable labelled 1 if it occurred between 2017 and 2022; otherwise, it was coded 0	Board of Directors
Ignorance	Provision of training to employees /directors	A dummy variable labelled 1 if it occurred between 2017 and 2022; otherwise, it was coded 0	Statement of Corporate Governance
Greed	Average Total Remuneration	A dummy variable labelled 1 if remuneration exceeded the average total remuneration; otherwise, it was coded 0	Directors' Report

Moderating Variable

ITR: The income tax rate (ITR) was reduced from 25% in 2010 to 20% in 2022, as per Article 17 of the Income Tax Law. If all paid-up shares were traded at least 40% on the Indonesian stock market, mining businesses can use an ITR lower than the general rate of 17%. According to Fisman and Wei (2004), tax avoidance increased as the rate increased. ITR was formulated using the following formula:

$$Income\ Tax\ Rate\ (ITR) = \frac{Income\ Tax\ Expense}{Net\ Income} \quad (3)$$

Control Variable

CSZ: Company size (CSZ) as a dependent variable categorized businesses into large and small ones using methods like total assets, total sales, and market value of equity (Dang et al., 2018). CSZ used the formula:

$$CSZ = Ln\ Total\ Asset \quad (4)$$

LEV: This study used ROE to measure leverage (LEV), a dependent variable in a company's capital structure, to determine its profitability size and the efficiency of generating profits using its equity. Leverage is a measure of the amount of debt in a company's debt and equity mix. ROE was formulated with:

$$ROE = \frac{Net\ Income}{Shareholder's\ Equity} \quad (5)$$

CG: Corporate governance (CG) involves the direction and management of a business through laws, customs, and procedures (Chen, 2022) encompassing interests of shareholders, top management executives, clients, vendors, investors, governments, and the public. It can be categorized into good and bad categories. Investors prefer businesses with a strong corporate governance history to avoid losses and unfavorable outcomes. In this study, public companies with sustainability reports with a Global Reporting Initiative (GRI) Standard were scored 1; otherwise, 0.

RESULTS

The FFR had a mean of -2.368 indicating that the average company committed fraud. The positive incentive value of 6.3% suggested growth in ROA, indicating increased profit from assets. The average pressure level was 47%, indicating that companies were experiencing higher external expectations or demands for performance, influencing their decision-making and behavior. The average opportunity level was 42%, which indicated more opportunities in the operating environment, potentially leading to increased growth prospects. Financial pressure, specifically leverage, was measured using liabilities relative to total assets. A higher value of pressure suggested higher financial risks due to increased reliance on liabilities. The data showed that companies relied on the liabilities of 47%. The Kolmogoriv Smirnov test results

showed an asymp. Sig. the value of 0.2, indicating the data was normally distributed. The descriptive statistics, as in Table 4 provided further insights.

Table 4: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Company	27	15.417	1	53
Years	2019.5	1.678	2017	2022
FFR	-2.368	0.723	-4.058	1.762
ICT	.063	.111	-.279	.889
PSR	.474	.174	0	1.154
OPP	.424	.122	.200	.833
ATT	.406	.492	0	1
RZN	.978	.142	0	1
CPB	.371	.484	0	1
ARG	.597	.491	0	1
INR	.903	.295	0	1
GRD	.316	.466	0	1
ITR	-2.454	35.313	-601.7	14.504
ICTITR	-.018	.016	-.082	.058
PSRITR	-1.706	26.422	-450.575	9.198
OPPITR	-.845	11.78	-200.567	7.252
ATTITR	-.122	.663	-5.814	4.394
RZNITR	-2.436	35.314	-601.7	14.504
CPBITR	-.207	2.047	-25.357	14.504
ARGITR	-2.346	35.319	-601.7	14.504
INRITR	-2.472	35.299	-601.7	5.355
GRDITR	-.187	1.82	-25.357	4.394
CSZ	26.352	2.35	17.217	32.536
LEV	.092	.408	-4.962	2.299
CG	.45	.498	0	1

Source: Data processed by authors using SPSS 29.

Table 5 revealed intriguing data patterns with a 1% significance level for correlations between various variables. PSR and LEV, ARG and LEV, ICT and PSR, ARG and INR, PSR and ATT had a weak negative correlation while ARG and CSZ, ICT and ARG, PSR and INR had a moderate negative correlation. Negative correlation indicates that when one variable increases, the other decreases. On the other hand, INR and LEV, ICT and INR, CSZ and CG, ATT and LEV had a weak positive correlation while OPP and ARG, INR and CSZ, GRD and CG, ITR and CSZ, CSZ and LEV, CPB and ARG had a moderate positive correlation. ICT and CSZ, ICT and LEV had the strongest positive correlation indicating that they were strongly correlated. At 5% level, CPB and LEV, CPB and CSZ, INR and CG, LEV and CG, RZN and CSZ had a weak negative correlation while ICT and CPB, OPP and CSZ, RZN and GRD, ICT and ATT had a weak positive correlation.

Table 5: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ICT	1.00												
PSR	-0.17**	1.00											
OPP	0.05	-0.04	1.00										
ATT	0.13*	-0.18**	-0.09	1.00									
RZN	0.00	0.01	0.03	0.07	1.00								
CPB	-0.10*	0.01	0.07	0.00	0.01	1.00							
ARG	-0.26**	0.05	0.21**	-0.07	0.08	0.34	1.00						
INR	0.15**	-0.30**	0.04	0.03	-0.05	0.00	0.33**	1.00					
GRD	0.09	-0.05	0.07	0.07	0.10*	-0.04	0.01	-0.08	1.00				
ITR	0.04	-0.09	0.05	0.05	-0.01	0.04	-0.00	-0.02	0.04	1.00			
CSZ	0.52**	-0.10	0.10*	-0.09	-0.13*	-0.11	0.04	0.23**	0.08	0.24**	1.00		
LEV	0.74**	-0.16**	-0.07	0.20**	0.02	-0.1	-0.11*	0.13**	0.03	0.01	0.30**	1.00	
CG	-0.09	-0.07	0.03	-0.09	-0.02	-0.05	-0.10*	-0.13*	0.40**	-0.06	0.15**	-0.13*	1.00

Source: Data processed by authors using SPSS 29.

** Correlation is significant at the 0.01 level, * Correlation is significant at the 0.05 level.

Based on the empirical findings as presented in Table 6, several hypotheses exhibited significant effects. The first hypothesis (H1a) confirmed that Incentive significantly and positively influenced the detection of FFR, supported by a p-value of 0.01 and a coefficient value of 4.175, leading to the acceptance of H1a. (H1b) confirmed that Pressure had a positive significance on detection of FFR at the in 5% significance level with a p-value of 0.043 (0.043<0.05) and a coefficient value of 0.438, leading to the acceptance of H1b.

The second hypothesis (H2) examined the negative impact of opportunities on FFR Detection. Whereas the test result revealed a positive significant influence on detecting FFR with p-value of 0.006 (0.06<0.01) and a coefficient value of –0.736, leading to the rejection of H2. The fifth hypothesis (H5) confirmed that arrogance had an impact on FFR detection with p-value of 0.082 (0.082<0.1) meaning that arrogance had a significant influence on detecting FFR detection at the 10% significance level. Hence this statement accepted H5.

H3a examined if attitude had a positive impact on detecting FFR. The test showed that it did not significantly influence the detection of FFR with a p-value of 0.141 (0.141>0.1). Hence, H3a was rejected. In addition, H3b did not significantly influence detection of FFR with p-value of 0.467 (0.141>0.1) as it was higher than the 10% significance level. H3b was rejected. H4, with a p-value of 0.697 was rejected as it showed that it had no significant influence on detecting FFR. H6, with a p-value of 0.858 and H7, with a p-value of 0.389 were both higher than the 10% significance level and hence it showed that they had no influence on detecting fraud. Hence H6 and H7 were rejected.

Table 6: Regression Result

Variables	Coef.	t-value	p-value	Sig
ICT	4.175	8.572	<.001	***
PSR	.438	2.036	.043	**
OPP	-.736	-2.783	.006	***
ATT	.103	1.476	.141	
RZN	.161	.729	.467	
CPB	.027	-.400	.690	
ARG	.129	1.748	.082	*
INR	-.021	-.179	.858	
GRD	-.066	-.862	.389	
ICTITR	8.135	3.559	<.001	***
PSRITR	.005	.060	.952	
OPPITR	.625	.101	.919	
ATTITR	-.030	-.593	.554	
RZNITR	.968	-.136	.892	
CPBITR	.101	2.535	.012	**
ARGITR	.028	.416	.678	
INRITR	-.034	.736	.462	
GRDITR	-.103	-1.972	.050	**
CSZ	.037	2.018	.128	
LEV	.097	.849	.229	
CG	-.042	-.581	.939	
Constant	-3.586	-6.539	<.001	
Adjusted R-squared	.492			
Number of obs	291			
Prob > F	0.000			

Source: Data processed by authors using SPSS 29.

*** p<.01, ** p<.05, * p<.1.

The usage of lower ITR for public firms in Indonesia moderated the effect of incentive, rationalization, arrogance, and greed on FFR. It enhanced incentive, weakened rationalization and greed, and moderated the influence of incentive, rationalization, arrogance, and greed on FFR. Lower ITR may affect higher management such as Directors and Commissioners, as they pay less tax on their income, leading to higher after-tax income and more money for investment. The test findings in H8a, H13, and H16, showed that ITR strengthened the relationship between incentive, capability, and greed on detecting FFR.

The examination of (H8a), analysed the impact of ITR on Incentives concerning the detection of FFR, revealed a burst of interest. The test results indicated a coefficient value of 8.135 and a p-value of <0.001, suggesting that the relationship between tax rates and incentives indeed exhibited a positive significance (p-value <0.001). The investigation of the (H11) explored the influence of ITR on capability

concerning the detection of FFR, sparking bursts of curiosity. The test yielded a coefficient value of 0.101 and a p-value of 0.012 (0.012<0.05), indicating a significance. This intriguing result revealed that ITR, as a moderating variable, had a good moderating impact with significance at the 5% level, adding bursts of interest to the acceptance of H13. The examination of (H14) investigated the influence of ITR on greed concerning the detection of FFR. The test outcome revealed a coefficient value of -0.103 and a p-value of 0.05 (0.05<0.05), indicating a significant and strong impact of ITR on greed in FFR detection, resulting in the acceptance of H14. Whereas the examination of H8b (0.952>0.1), H9 (0.919>0.1), H10a (0.554>0.1), H10b (0.892>0.1), H12 (0.678>0.1), H13 (0.462>0.1) were rejected as ITR did not act as the moderating variable that influenced the variable pressure, opportunity, attitude/ rationalization, arrogance and ignorance on detecting FFR.

DISCUSSIONS

Incentives play a significant role in detecting financial fraud (FFR) in companies. When linked to short-term financial success criteria, incentives can motivate participation in financial fraternization. This aligned with previous research (Nugroho & Diyanty, 2022) suggesting that managers with high ego perceived themselves as capable of achieving ambitious targets to bolster their image as top performing managers and gain additional incentives. The greater the pressure a company faces to obtain a financial target, the greater the chance of detecting FFR. This pressure led to violation of credit agreements, expenses and capital through loans, which aligns with Sudirman, (2023) that stated that pressure had a positive significance effect to FFR, results in accepting H1a.

This study revealed that opportunity had a positive impact on FFR detection, rejecting hypothesis H1b. The main reasons for financial organizations' fraud potential included weak internal controls, poor management techniques, and insufficient oversight. The hypothesis was in line with the research of Meidijati and Amin (2022), but the result of this study challenged that research. It showed that people often see opportunities to commit fraud. Ineffective monitoring (BDOUT) has no bearing as the number of independent commissioners did not necessarily indicate the effectiveness of a company's supervisory system. The appointment of independent commissioners may be limited to complying with Indonesia Stock Exchange regulations, but the intention was not to enhance Good Corporate Governance. Hence, the company retained the ability to intervene in practice. The independent board of commissioners lost its independence when management interfered, making the supervisory function ineffective.

The study revealed that attitude and rationalization brought a negative impact on the detection of FFR which rejected H3a and H3b. This contradicted previous research of Johnson et al. (2013) and Yusof (2015), which suggested that management attitude and financial restatement can positively affect fraudulent reporting. The lack of transparency in the restatement process may limit stakeholder's ability to assess the impact. Rationalization involves justifying unethical behavior through cognitive

processes negatively impacts the detection of FFR. This contradicts Schnatterly et al. (2018) which suggested that rationalization may affect FFR when combined with different factors. Therefore, changes of accounting policies did not necessarily affect reporting fraud, challenging Handoko et al. (2022).

Capability brings a negative impact on the detection of FFR which rejected H4. Contradicting the claim in Rustiarini et al. (2019) that those with a high level of capability have a greater ability to conceal their fraudulent activities, making the detection of fraud more challenging. The study also contradicted Handoko et al. (2022) that changes in directors did not affect FFR detection. The study emphasized the need to understand how changes in governance structure, communication channels, and risk management practices affect an organization's risk management practices.

Arrogance shows how managers self-ignorance brings a negative impact toward corporate governance, where managers prioritize short-term financial gains over the importance of other stakeholders. This can lead to poor management practices and financial statement fraud. Research by Arum and Wahyudi (2020) supported this, as the frequency of CEO changes demonstrated the level of arrogance a director had, as they have a high position to commit fraud. Therefore, managers should be aware of the potential risks and ethical considerations of their actions to ensure a more ethical and responsible corporate governance.

The study rejected H6 as it revealed that ignorance negatively impacted the detection of FFR, which challenged the findings of Yusof (2015) and Handoko et al. (2022), who found that corporate governance courses on employees or directors had a significant effect on fraudulent financial reporting. The effectiveness of these courses may depend on various contextual factors, such as the quality of instruction, relevance to real-world scenarios, and the integration of the curriculum into organizational practices. Greed also negatively impacted the detection of FFR which rejected H7. Contradicting the findings of Handoko et al. (2022) who found that remuneration did not significantly impact fraudulent reporting due to the complexity of remuneration structures which included base salary, bonuses, stock options, and other incentives. This diversity made it difficult to directly link remuneration to fraudulent behavior.

Lower income tax rates on the Indonesia’s public manufacturing companies can enhance incentive, opportunity, and capability in detecting FFR. This can influence companies' decisions about deceptive financial reporting techniques through commissioners and directors (Meidijati, 2022). Based on the findings of testing H8a, H11 and H14 can strengthen those relationships. Research showed that remuneration had a significant effect on fraudulent financial statements, which aligned with previous research by Yusof et al. (2015). It highlighted the complexity of understanding the relationship between income tax rate, greed, and fraudulent reporting, prompting further exploration. However, not all indications of fraud (H8b, H9, H10a, H10b, H12 and H13) can weaken the impact of ITR on the variable, suggesting that different factors or perspectives may allow different ways of committing fraud in taxation.

CONCLUSION

This study delved on the impact of the fraud heptagon model encompassing incentive/pressure, opportunity, attitude/rationalization, capability, arrogance, ignorance, and greed on detecting fraud in financial statements, with ITR acting as a moderating variable. It found that incentive, pressure, opportunity, and arrogance exhibited a significantly positive influence on FFR, while attitude, rationalization, capability, ignorance, and greed did not seem to affect FFR. ITR, as the moderating variable, only influenced incentive, capability, and greed, confirming acceptance of hypotheses H8a, H11, and H14.

However, this study encountered some limitations, such as perplexing data which complicated the formulation of the FFR formula and unexplained variance of the adjusted r-squared (50.8%), resulting in hypotheses (H3a, H3b, H4, H6, and H7) remain unproven. However, the extensive sample size helped mitigate the issues. To address this, future research should explore variables like attitude, rationalization, capability, ignorance, and greed, supported by diverse data sets to provide more comprehensive insights. The moderating variable, ITR, should also be explored for more reliable answers. Unproven hypotheses should be investigated to determine their role in fraud detection. Stock ownership can be used as a proxy for greed instead of remuneration as high levels of stock ownership may indicate personal interest in maximizing gains at the expense of long-term company stability.

The research suggested that Indonesia's Financial Services Authority and external auditors should adopt a proactive approach to detect fraudulent behavior in financial reporting Specifically, attention should be directed towards key variables such as return on assets (ROA), return on equity (ROE), the number of commissioners, and changes in CEO's photo, which have been identified in this study as significant components influencing fraudulent financial reporting (FFR). To effectively address these risks, regulatory bodies and auditing firms should prioritize updating policies and enhancing early detection mechanisms. This involves implementing robust monitoring systems capable of identifying irregularities in financial data and promptly investigating any suspicious activities. External auditors should remain vigilant and critical, while top management should encourage open internal discussions and supervision guidelines. This will improve company performance and reduce the likelihood of fraud.

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