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# MANAGEMENT ENTRENCHMENT AND INTELLECTUAL CAPITAL: THEIR ROLE IN DRIVING FINANCIAL STATEMENT FRAUD IN INDONESIAN SOEs

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A B S T R A C T

*This study examines the influence of management entrenchment and intellectual capital on financial statement fraud. Logistic regression analysis was conducted using 120 panel data observations from state-owned enterprises (SOEs) listed on the Indonesia Stock Exchange (IDX) between 2018 and 2023. Financial statement fraud was measured using the Beneish M-Score, and management entrenchment was evaluated based on Chief Executive Officer (CEO) tenure and managerial ownership. Intellectual capital, including human capital, structural capital, and capital employed, was measured using the Value Added Intellectual Coefficient (VAIC) method. The results demonstrate that management entrenchment, whether assessed by CEO tenure or managerial ownership, does not have a significant effect on financial statement fraud. Conversely, all components of intellectual capital are associated with fraud risk: human capital increases risk, while structural capital and capital employed decrease it. These findings indicate that management entrenchment is not the primary determinant of financial statement fraud in SOEs. Effective management of intellectual capital is crucial for mitigating this risk. The study provides important implications for regulators and policymakers by emphasizing the necessity to enhance corporate governance frameworks and encourage the ethical management of intellectual capital to minimize financial reporting errors.*

**Keywords**: *Management Entrenchment, Intellectual Capital, Financial Statement Fraud, State-Owned Enterprises*

Penelitian ini mengkaji pengaruh keterikatan manajemen dan modal intelektual terhadap kecurangan laporan keuangan. Analisis empiris dilakukan menggunakan regresi logistik terhadap 120 observasi data panel pada perusahaan Badan Usaha Milik Negara (BUMN) yang tercatat di Bursa Efek Indonesia (BEI) selama periode 2018-2023. Kecurangan laporan keuangan diidentifikasi melalui *Beneish M-Score*, sementara keterikatan manajemen diukur berdasarkan masa jabatan *Chief Executive Officer* (CEO) dan kepemilikan saham oleh manajemen. Modal intelektual yang terdiri dari *human capital, structural capital,* dan *capital employed* diukur menggunakan metode *Value Added Intellectual Coefficient* (VAIC). Hasil penelitian menunjukkan bahwa keterikatan manajemen (masa jabatan CEO dan kepemilikan manajerial) tidak berpengaruh signifikan terhadap kecurangan laporan keuangan. Namun, seluruh komponen modal intelektual berpengaruh signifikan, *human capital* menunjukkan pengaruh positif terhadap risiko kecurangan, sedangkan *structural capital* dan *capital employed* menunjukkan pengaruh negatif. Temuan ini menegaskan bahwa keterikatan manajemen tidak menjadi determinan utama kecurangan laporan keuangan pada BUMN, sementara pengelolaan modal intelektual memiliki peran strategis dalam memitigasi risiko tersebut. Penelitian ini memberikan implikasi penting dengan mendorong regulator dan pembuat kebijakan untuk memperkuat kerangka tata kelola perusahaan serta mengoptimalkan pemanfaatan modal intelektual secara etis untuk meminimalkan risiko kesalahan pelaporan keuangan.

**Kata kunci:** Management Entrenchment, Modal Intelektual, Kecurangan Laporan Keuangan, BUMN

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## INTRODUCTION

Financial fraud is a serious phenomenon worldwide, and it has significant financial and reputational consequences for institutions across different segments and geographies. This broader category refers to various forms of wrongdoing, such as fraudulent financial reporting or using authority and cheating activities for personal or unlawful purposes (ACFE,

2024; Kar & Dasgupta, 2024). According to the definition in Statement on Auditing Standards (SAS) No. 99 issued by the AICPA, fraud is an intentional act that involves dishonesty and causes a false representation of material fact with resulting loss in financials subject to audit (Skousen et al., 2008). Fraud is broadly classed by the Association of Certified Fraud Examiners (ACFE) into three categories: corruption, asset misappropriation and financial statement fraud. This has the potential to mislead other stakeholders such as investors, creditors and regulators on the true financial position of the firm. Financial statements represent the most primitive form of company's financial message and required to express certain important qualitative features, such as relevance, reliability, understandability and comparability (Claudia & Dewi, 2023).

The ACFE reports show that financial statement fraud accounts for only 5% of the global fraud cases drawn from an international sample of 1,921 reported cases from 138 countries; however, financial statement fraud is the costliest form of fraud with a median loss in excess of USD766,000 per instance (ACFE, 2024). According to the ACFE Indonesia Chapter there were 239 fraud cases in Indonesia. Financial statement fraud represented just 22% of the cases, but led to the highest average loss per case of IDR 11.01 billion (ACFE, 2019). This issue is most prevalent in SOEs, as the companies that control large state assets are not necessarily high in internal control (Indarto & Ghozali, 2016). It is a weak member of the history repeated itself so soon. Recent scandals highlighted this weakness, as PT Garuda Indonesia was tainted by fraudulent revenue recognition and caused it to suffer an IDR 8.8 trillion loss, while PT Waskita Karya and PT Wijaya Karya false reporting made us wonder if we could have prevented their incidents in the first place. These events have highlighted the significant failure of governance and oversight mechanisms (Rahmawati & Juliarto, 2025).

The prevalence of fraud in SOEs more particularly, financial statement manipulation indicates that there are cases where management will use their power and knowledge on reporting systems to gain personal income. In the transitional developing country such as Indonesia, SOEs are highly exposed risk of doubly commercial relation and state-owned management position. Dual positions in firms increase the institutional complexity and increase the risk of misreporting. Internal organizational elements, namely management related issues, are most of the time blamed as main driving forces for financial statement fraud (Seifzadeh et al., 2022). Agency theory claims that conflicts of interest arise in situations where there are managers-agents and owners-principals due to the latter's information disadvantage (Jensen & Meckling, 1976). The higher the level of managerial power and SOEs supervision is lower, the greater the chance for opportunistic behavior. This one of those methods, it makes management less able to be replaced and more powerful. While entrenchment may help make leadership expulsion-proof, it can also serve as a means to weaken accountability in the absence of strong public sector governance. The entrenched supervising corps usually place their personal interests first, form informal power groups and do not accept any outside scrutiny. This paper employs managerial entrenchment as proxied by CEO tenure and managerial ownership in Indonesian SOEs.

In addition to entrenchment, the role of intellectual capital as an internal factor in determining the presence of fraud among SOEs is also relevant. Intangible assets of organizations such as knowledge, skills and relational resources are described as intellectual capital. The resource-based view posits that intellectual capital is a strategic resource that promotes productivity, innovation, and performance in private and public organizations (Bontis et al., 2000; Salsabila et al., 2025). In SOEs the effect of intellectual capital can be both positive and negative. Although significant human

capital, structural capital and capital employed could strengthen internal control and transparency, poor governance may allow more intellectually-capable managers to use informational advantage against the firm to manipulate complicated financial arrangement (Yusnita et al., 2022). Thus, the governance of intellectual capital in SOEs can help prevent or enable fraud. In addition, pressure to meet commercial as well as public mission goals, weak controls and moral disengagement fuel fraud. According to fraud triangle by Cressey (1953), fraud results from a combination of pressure, opportunity and rationalization.

Current studies on management entrenchment, the value of intellectual capital and financial statement fraud tend to produce inconsistent results and generally neglects SOEs. According to Seifzadeh et al. (2022), management entrenchment quantified as CEO tenure, managerial ownership, board compensation, CEO duality and board independence has a negative effect on financial statement fraud. Conversely, Fagbemi et al. (2020) report a positive effect of CEO tenure on earnings management but not for CEO ownership. Qawasmeh & Azzam (2020) find CEO ownership to be positively related to earnings management. Tang & Fiorentina (2021) posit a positive impact of CEO tenure and no significant effect of managerial ownership. Lotfi et al. (2022) find that all forms of intellectual capital, such as human, structural, relational, and employed capital negatively affect financial statement fraud. According to Awaliyah & Mutmainah (2023), human capital shows a positive impact, however structural capital reveals no significant association. These conflicting results can be explained by differences between institutions, such as corporate governance mechanisms (one-tier versus two-tier) and nature (i.e., a privately owned firm with dispersed ownership compared to SOEs). Research on state and business needs research targeted SOEs.

This study also provides empirical evidence to understand how management entrenchment and intellectual capital are linked with financial statement fraud in the context of Indonesian SOEs. These are businesses facing very specific challenges due to both the commercial and public service delivery in which they operate, with their dual mandate creating unique performance pressures. Agency relations are highly impacted because of the heavy presence of state ownership. In addition, the dual law-based governance mechanism is controlled by the Ministry of State-Owned Enterprises, Financial Services Authority and Audit Board of Indonesia. Such institutional features may lead to relationships that vary from what has been found in private-sector firms or other countries. This study re-investigates the influence of management entrenchment and intelligent capital on financial statements fraud in SOEs, firms size, ROE, and independent commissioner of Indonesian Owned Enterprises. This paper contributes to agency theory and the resource-based view by verifying theoretically derived relationships and relating SOE institutional features empirically to entrenchment, intellectual capital and fraud. It is expected that the findings could offer realistic implications for regulators and policymakers to improve governance mechanisms, and contribute to boards of commissioners and SOE management in promoting ethical and responsible intellectual capital management towards minimizing the risks of fraud.

This paper is structured as follows. The second section, the literature review and hypothesis development, underpins the research. Afterwards, the third section presents the research methodology, design, data, and measurement of variables. Answering these questions is the focus of the second and third sections; then analyze the data and discuss the findings in section 4. The paper closes with section five, then presents the conclusions, limitations, and future research suggestions.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This research uses an integrated theoretical

framework, which includes three perspectives in parallel to explain financial statement fraud. The agency theory introduces a fundamental model for explaining why managers may act in their own best interest because of information asymmetry with the owners. The resource-based view conceptualises intellectual capital as employees' unique knowledge, and highlights its potential to discourage or stimulate unethical conduct. The fraud triangle theory demonstrates that the powers of management (as suggested by agency theory) and the knowledge of people as proposed by resource-based view can make fraud possible.

## Agency Theory

The agency theory accounts for the contractual relation between agents, who have been delegated decision making freedom and responsible to principals also known as owners of the firm (Jensen & Meckling, 1976). Managers are paid in the form of wages and rewards for their work (Dzaki & Suryani, 2020). Managers' greater access to internal information than principals does lead to information asymmetry, which may allow for opportunistic behaviors (e.g., earnings management or financial statement manipulation among others) towards owners. The lack of information exacerbates management entrenchment, as managers can take advantage of poor restructuring institutions for their own benefit and limit the strength of monitoring mechanisms. Entrenchment is two-sided: managers can increase long-term performance to defend their position (Seifzadeh et al., 2022), but when monitoring failure happens, they are also able to exploit financial reports more severely (Rahmawati & Juliarto, 2025). Entrenchment due to long tenured CEOs or managerial ownership could entrench the management, which weaken monitoring functions (Sudana & Dwiputri, 2018). As such, agency theory emphasizes the importance of developing good contracts and effective monitoring tools in order to mitigate that agent cost resulting from information asymmetry (Ahmad & Septriani, 2008; Fauzia & Lastanti, 2024).

## Resource-Based View Theory

The resource-based view (RBV) argues that it is a firm's valuable, rare, inimitable and non-substitutable (VRIN) internal resources which grant a company its sustainable strength on the marketplace (Barney, 1991). Intellectual capital, comprising human, structural and capital employed, adheres to these characteristics, and plays a strategic role to achieve organizational performance & promoting innovation (Salsabila et al., 2025). Yet, due to its intangible and tacit nature, intellectual capital would be hard for external parties to measure or verify and this adds to the information asymmetry problem between managers and outsiders. In weakly or ineffectively governed contexts, managers can exploit this asymmetry through an abuse of their privileged access to internal information and control over intellectual capital to distort financial reporting or mask poor performance. Therefore, even though intellectual capital is a resource for adding value of primary importance and sustains competitive advantage over time, its specific features may also characterize this driving force as an enabler for fraud based on the effectiveness of internal oversight arrangements.

## Fraud Triangle Theory

The fraud triangle theory, initially created by Donald R. Cressey (1950–1953) explains that there are three factors which lead to fraud: pressure, opportunity, rationalization (Fitri et al, 2019). Fraud might appear when people perceive financial stress, unrealistic performance targets or belong to organizational cultures that implicitly accept deviant behaviors (Aprilia, 2017; Fitri et al., 2019). Huang et al. (2017) attribute it to pressure, arguing that it is even the prevailing factor. Opportunity relates to the deficiencies in internal control mechanisms or supervision which allow perpetrators to carry out fraud unnoticed (Fitri et al., 2019; Narsa et al., 2023). Meanwhile, rationalization relates to using reasons to explain cheating behavior,

including a sense of being wronged or an entitlement for the misdeed so as to decrease guilt (Aprilia, 2017; Sukmadilaga et al., 2022). In this setting, management entrenchment can be viewed as increasing the likelihood of fraud by impairing monitoring. Moreover, the intangible and difficult-to-measure characteristic of intellectual capital may result in temptations as well as dangers, thus establishing conditions favouring financial statement fraud.

### The Relationship Between CEO Tenure and Financial Statement Fraud

CEO tenure is an indicator of the length of leadership and indicates level of experience, influence and familiarity with internal firm dynamics (Sudana & Dwiputri, 2018). While holding a position for longer time period may have the potential to enhance knowledge of operations, and relationships with stakeholders, for better or worse it can also lead to entrenchment where greater dominance and control lead to less effective monitoring. These environments create openings for non-alignment of interests and opportunistic behavior such as manipulations in financial statements (Jensen & Meckling, 1976). A long-term CEO is likely to have stronger knowledge of the weakness in internal control, leading to a higher chance of undertaking and hiding manipulation. The dominance and the informal power networks organizationally established over time has also decreased board's monitoring advantage. In addition, lengthening tenure may breed a sense of ownership or hubris, which can then justify the explanation for criminal behavior. Empirical study by Tang & Fiorentina (2021) and Fagbemi et al. (2020) reports a significant positive relation between CEO tenure and earnings management, which is a precursor of prospective financial reporting size distortion (Beneish, 1999). With these mechanisms and findings in mind, the present study assumes:

H1: CEO tenure has a positive effect on financial statement fraud.

### The Relationship Between Managerial Ownership and Financial Statement Fraud

Managerial ownership aligns managerial objectives with those of shareholders (Jensen & Meckling, 1976). Nonetheless, there is a downside as well; managers with shareholdings may be placed under pressure to achieve wealth targets in earnings that are suitable for awarding excessive compensation packages and in turn to commit financial reporting fraud (Islami et al., 2022). When managerial ownership is overconcentrated, managers might take over control of firms and reduce external monitoring while entrenching themselves which would increase the probability of gaming the financial statements. The pressure on managers is particularly high when their own wealth is significantly concentrated in the firm's stock price, amplifying incentives to maintain a favorable corporate image/profile and share price. This is particularly the case if managers take advantage of strong ownership positions to influence the board, diminish external oversight and hence have ample opportunities to engage in undetected managerial manipulation. Furthermore, the managerial role of agents and principals may have double effects on the rationalization of illegal activity where managers are motivated to maintain firm's stock price, if they play both agency roles. It is consistent with the results of Qawasmeh & Azzam (2020) that advance a positive relation between the ownership by management and earnings managements which has also been veritably related to manipulation in financial statements. Given the theoretical and empirical rationales, we hypothesize as following:

H2: Managerial ownership has a positive effect on financial statement fraud.

### The Relationship Between Human Capital and Financial Statement Fraud

Human capital is an essential element of intellectual capital which includes the competencies, skills, and flexibility of employees in adding value to and support to maintain a firm's competitive advantage (Ali et al., 2021). As an internal resource that meets the criteria of being valuable,

rare, inimitable, and non-substitutable (Barney, 1991), human capital plays a critical role in enabling long-term competitive advantage. However, when internal control is weak and the culture is unethical, then these human-capital benefits will result in high levels of information asymmetry that creates an environment for managers to engage in opportunistic actions (e.g., accounting fraud). More precisely, high human capital does not directly exert pressure to fraud but it increases both the opportunity and capability. Similarly, experience-based managers can see through facades and identify the called weak spots within accounting and control systems which they then challenge to exploit sophisticated manipulation opportunities that audit firms find increasingly challenging to detect. It is this level of understanding that helps uncover reporting system vulnerabilities and gives managers justifications for committing fraud as a means to protect the firm's public reputation. Empirical evidence by Yusnita et al. (2022) demonstrate that human capital affect windowdressing practices positively, whereas Dewi et al. (2023) show that human capital is positively related to earnings management. Both hollowing out and channel stuffing are example financial statement manipulation and both are seen as potential fraud signals (Beneish, 1999). From these theoretical considerations and empirical evidence, it is derived the following hypothesis:

H3: Human capital has a positive effect on financial statement fraud.

### The Relationship Between Structural Capital and Financial Statement Fraud

Structural capital one of components of intellectual capital that includes systems, processes, organisational structures, and procedures which enhance the productivity of human resources (Bontis, 2001; Smriti & Das, 2018). Structural capital represents the intellectual property of an organization which is a necessary requirement to form human capital, thus it may act as a catalyst that can enhance efficiency of human capital in order to achieve most favourable level of organizational performance (Ali et al., 2021; Khan et al., 2016). If well-managed, structural capital reinforces internal control systems and ensures transparency which reduce the prospect of information distortion (Barney, 1991). Organisations with significant structural capital, for example sound accounting systems, strong internal auditing units, whistle-blowing channels and standard operating procedures would have the ability to reduce and/or detect financial statement manipulation. Structural capital works as an organizational monitoring device, which reduces the costs and makes it more difficult for individuals to engage in fraudulent acts unrecognize. In line with this assumption, increased levels of structural capital are accompanied by better reporting quality and a lower risk of manipulation, especially in the presence of regulation (Lotfi et al., 2022). Prior studies by Lotfi et al. (2022) and Yusnita et al. (2022) also suggest structural capital impedes financial reporting fraud. On the basis of these theoretical frameworks and evidence from empirical studies, the present inquiry suggests the following hypothesis:

H4: Structural capital has a negative effect on financial statement fraud.

### The Relationship Between Capital Employed and Financial Statement Fraud

Capital employed refers to an organization's ability to create additional value with the capital it uses (whether that be physical or financial capital). Efficient capital management does not only lead to organizational stability, but also can alleviate or eliminate the pressure and incentive that management has for engaging in financial reporting fraud. Return in invested money assets can be an indication on how the business could make use of its capital and still maintain a long term performance so as to produce returns that are durable, this also indicates sound financial practices along with effective internal control. These two variables are important factors in mitigating opportunistic accounting behavior (Dewi et al., 2023). A high level of effective use of

capital can reduce the pressure characteristic that is frequently associated with financial reporting fraud. A study by Lotfi et al. (2022) finds capital employed is negatively effecting financial reporting fraud. Given these theories and prior studies, we can hypothesize that:

H5: Capital employed has a negative effect on financial statement fraud.

## RESEARCH METHODS

This study takes a quantitative approach to testing the proposed hypotheses empirically and analysing the relationships between variables based on panel data. The data were extracted from the annual reports of Indonesian State-Owned Enterprises (SOEs) that were listed in Indonesia Stock Exchange (IDX) during the period 2018-2023. Using purposive sampling, the selection criteria were that (1) SOEs must be listed in IDX during the study period between 2018-2023, (2) continuously released a complete annual report during that period, and (3) disseminate more financial information to compute Beneish M-score for detecting fraud. Such sampling mechanism enables the firm year observations to be classified as fraudulent or non-fraudulent which in turn facilitates a stronger control for making a judgment about financial statement fraud determinants.

### Operational Definition and Variable Measurement

Financial statement fraud serves as the dependent variable in this study. The independent variables consist of management entrenchment and intellectual capital. Management entrenchment is measured using two indicators: CEO tenure and managerial ownership. Intellectual capital is assessed through three dimensions: human capital, structural capital, and capital employed. Additionally, the study incorporates several control variables, including firm size, return on equity (ROE), and the proportion of independent commissioners.

### Dependent Variable

The dependent variable in this study is financial statement fraud (FSF), defined as a form of misconduct in which an employee intentionally misstates or conceals material information within an organization's financial reports (ACFE, 2024). Financial statement fraud is measured using the Beneish M-score, a quantitative model introduced by Beneish (1999) to estimate the probability of financial misreporting by analyzing eight specific financial ratios. The M-score is useful in determining the probability that a company has inflated their financial statements. As defined in Beneish (1999), a firm with M -score above –2.22 is classified as it occurs to have a high probability of committing financial report frauds (coded 1), while when M -score equal or less than –2.22, the probability for a company to be bankrupt is lower (code 0). The fraud variable is a dummy variable (1 = financial statement fraud /0 = no financial statement fraud). 1.7 M – score A series of the key ratios are input to the following formula to get the M-Score.

M-Score=-4,84+0,920*DSRI+0,528*GMI+0,404*AQI+0,892*SGI+0,115*DEPI–0,172*SGAI–0,327*LVGI+4,679*TATA

### Independent Variable

The independent variables in this study are management entrenchment and intellectual capital. Management entrenchment is a condition in which managers deliberately reduce shareholder oversight and control to advance their financial and non-financial interests, secure greater personal gains, strengthen discretionary power, and minimize the risk of dismissal (Pigé, 1998; Mohamed, 2021). This variable is measured using two proxies: CEO tenure, which quantifies entrenchment by recording the number of years a CEO has held their position, and managerial ownership, defined as the percentage of company shares owned by managers, capturing the extent of their ownership influence (Seifzadeh et al., 2022). Higher values on these proxies indicate increased management entrenchment. Intellectual capital refers to the organization's intangible assets that drive value creation

and enhance financial performance, underpinning competitive advantage and sustainability (Xu & Wang, 2019).

There are three theory instruments that represent intellectual capital: human capital, which assesses the collective knowledge, skills and competencies of employees; structural capital which measure effectiveness of the company system in operating procedures and routines; and related to utilization efficiency on physical resources (Ulum et al., 2014). The governance mechanism of SOEs under Government Regulation No. 45/2005 is a bureaucratic and public scrutiny environment. This molds intellectual capital differently from that of private firms. The Value Added Intellectual Coefficient (VAIC™) model consisting of human capital efficiency (HCE), structural capital efficiency (SCE) and capital employed efficiency (CEE) in this case is a proper proxy for assessing how SOE resource capacity affects value added and increases the probability of financial statement fraud. VAIC™ is recommended because it uses universally available standardized financial data to create a means of comparability and consistency between different research samples (Ulum et al., 2014). The details of the measurement approach for each item are provided in Table 2.

### Control Variable

Three control variables are used in this study. The natural logarithm of total assets (Ansori & Fajri, 2018) is used for size since larger firms may have more complex control systems and receive greater scrutiny; however, they also could have greater opportunities for wrongdoing. ROE considers the return earned on common stockholders' equity, and measures how much profit a firm can earn from shareholders' capital investmet (Kurniawati & Nurmala, 2020). Lower profitability firms

**Table 1.**
Measurement of Dependent Variables

| Index Number | Code | Formula |
|---|---|---|
| Days Sales in Receivable Index | DSRI | $\frac{Receivable_t/Sales_t}{Receivable_{t-1}/Sales_{t-1}}$ |
| Gross Margin Index | GMI | $\frac{(Gross\ Profit_{t-1}/Sales_{t-1})}{(Gross\ Profit_t/Sales_t)}$ |
| Asset Quality Index | AQI | $\frac{\left(1-\left(\frac{(Current\ Asset_t+PPE_t)}{Total\ Asset_t}\right)\right)}{\left(1-\left(\frac{(Current\ Asset_{t-1}+PPE_{t-1})}{Total\ Asset_{t-1}}\right)\right)}$ |
| Sales Growth Index | SGI | $\frac{Sales_t}{Sales_{t-1}}$ |
| Depreciation Index | DEPI | $\frac{\frac{Depreciation_{t-1}}{(PPE_{t-1}+Depreciation_{t-1})}}{\frac{Depreciation_t}{(PPE_t+Depreciation_t)}}$ |
| Sales, General & Administrative Expenses Index | SGAI | $\frac{\left(\frac{SGA\ Expenses_t}{Sales_t}\right)}{\left(\frac{SGA\ Expenses_{t-1}}{Sales_{t-1}}\right)}$ |
| Leverage Index | LVGI | $\frac{\left(\frac{Total\ Liabilities_t}{Total\ Asset_t}\right)}{\left(\frac{Total\ Liabilities_{t-1}}{Total\ Asset_{t-1}}\right)}$ |
| Total Accruals to Total Assets | TATA | $\frac{Net\ Income\ from\ Continuing\ Operations - Cash\ Flows\ from\ Operations}{Total\ Asset}$ |

likely experience more pressure as a result, increasing the likelihood of fraud. Furthermore, proportion of independent commissioners acts as a monitoring mechanism of the board effectiveness where theoretically the higher composition of independent board members also reduces opportunities for fraud (Angelina & Chariri, 2022). The operational measures of each control variable are listed on Table 3.

### Empirical Models

This study uses model binary logistic regression to test our hypotheses.

$$Ln(P_{it}/1\text{-}P_{it}) = \beta_0 + \beta_1 CT_{it} + \beta_2 MO_{it} + \beta_3 HC_{it} + \beta_4 SC_{it} + \beta_5 CE_{it} + \beta_6 SIZE_{it} + \beta_7 ROEit + \beta_8 IDN_{it} + \mu_{it}$$

Note: $Ln(P_{it}/1\text{-}P_{it})$=Log-odds of financial statement fraud; $\beta_0$= Constant; $\beta_1,\beta_2,\beta_3, \beta_4,\beta_5,\beta_6,\beta_7\beta_8$= Coefficients; CT = CEO tenure; MO = Managerial ownership; HC= Human capital; SC = Structural capital; CE= Capital employed; SIZE= Firm size; ROE= Return on equity; IDN= Proportion of independent commissioners; μ= The error term; *i* = Firm; *t* = Year.

## ANALYSIS AND DISCUSSION

The methodology is quantitative and aims to consider the empirical impact of entrenchment, intellectual capital on financial statement fraud. We obtained data from public sources, which included annual reports listed in the IDX website, Ministry of SOEs, and corporate websites. The sampling method was purposive selected based on the following criteria: (1) The SOE should continue to be listed on the IDX consistently throughout the observation period; (2) Corporate annual reports should have been published consecutively and soundly posted from early 2018 through end of 2023; and, (3) There were found at least one potential evidence of financial statement fraud as signified by the Beneish M-model algorithm (M > –2.22). The full sample consisted of 126 firm-year observations (21 firms across 6 years). But six observations were removed as the values were so extreme inconsistent with or distant from overall data distribution and considered to be statistical outliers. Thus, a total of 120 observations were used for statistical analysis.

### Descriptive Statistics

Descriptive statistics for the study variables are displayed in Table 4. The dependent variable, financial statement fraud (FSF), is a dichotomous variable constructed out of Beneish M-score. The average FSF is 0.3250 and suggests that on average about 32.50% firm-year observations are being classified as with a high likelihood of financial statement fraud based on the threshold Beneish M-score. The descriptive statistics also indicate a minimum of 0.0000 and a maximum value of 1.0000. However, the standard deviation value of 0.4703 that is greater than the mean demonstrates large variability or that observations among samples are relatively tensely scattered.

The CEO tenure variable (CT) has an average value of 1.3667, which demonstrates that the average CEO tenure for the sampled SOEs is relatively short. This brief holding period may indicate

**Table 2.**
Measurement of Independent Variables

| Variable | Code | Measurements |
|---|---|---|
| CEO Tenure | CT | CT = Observation Year – CEO Appointment Year (Seifzadeh et al. (2022)) |
| Managerial Ownership | MO | MO = Number of Share Owned by Managers/Total Outstanding Shares (Seifzadeh et al. (2022) |
| Human Capital | HC | HCE = Value Added/Human Capital (Ulum et al., 2014) |
| Structural Capital | SC | SCE = Value Added/Structural Capital (Ulum et al., 2014) |
| Capital Employed | CE | CEE = Value Added/Capital Employed (Ulum et al., 2014) |

rapid turnover of management or unique corporate governance structures in the case of Indonesian SOEs. Descriptive statistics indicate that there is a minimum of 0.0000, which means that among the 120 firms year observations, for 42 observations CEOs serve less than one year. Maximum value of 5.0000 is reported for PT Bank Tabungan Negara (Persero) Tbk in the year 2018, it means CEO had a tenure length as long as 5 years. Since the standard deviation (1.3217) is lower than the average, the distribution of terms can be considered relatively homogenous.

Managerial ownership (MO), which is calculated as the fraction of shares owned by management, has a very low average of 0.0003, indicating that there is negligible direct concentration of ownership among managers and little alignment of interests via equity-based incentives. Descriptive Statistics the minimum for each firm is 0.0000 this means that in 16 of the observations there are no managerial ownership. The highest 0.0073 is in PT Wijaya Karya Beton Tbk In 2021 where managers hold 0.73% ownership. And the standard deviation of 0.0008 exceeding the mean suggests large variation or heterogeneous distribution of manager ownership in our sample.

In terms of IC sub-components, the average value of human capital (HC) is 2.8914, which implies that human capital accounts for about 289.14% in the company's value added. This indicates a high share of human input in creating value added, which means that the firms included in our sample, overall manage their human capital to a large extent effectively. The lowest value (–13.150) was obtained by PT Waskita Beton Precast Tbk in 2020, indicating that the application of human capital led to a negative impact on value added during this year. On the other hand, PT PP Properti Tbk value of 10.210 is the highest for year 2018 which reveals that human resources have been highly effectively utilized. Since the standard deviation is 2.7642 and less than the mean, these data points are relatively closely spaced.

Structural capital (SC) has a mean of 0.5938 which suggests, on average, it accounts for 59.38% of the value added. This contribution is small compared to human capital, indicating that the accumulated human resources are most important for value creation. The lowest amount of–5.1000 was reported for PT Garuda Indonesia (Persero) Tbk in 2022 which indicate the inefficierencies occur wich make structural capital has the negative effect on value added. Highest score of PT Waskita Karya (Persero) Tbk as many as 1.8200 in the year 2020, which

**Table 3.**
Measurement of Control Variables

| Variable | Code | Measurements |
|---|---|---|
| Firm Size | SIZE | Ln Total Assets |
| Return on Equity | ROE | Net Income After Tax: Equity |
| Proportion of Independent Commissioners | IDN | Number of independent commissioners: Total number of commissioners |

**Table 4.**
Descriptive Statistics

| | FSF | CT | MO | HC | SC | CE | SIZE | ROE | IDN |
|---|---|---|---|---|---|---|---|---|---|
| Mean | 0.3250 | 1.3667 | 0.0003 | 2.8914 | 0.5938 | 0.1369 | 31.592 | -0.0515 | 0.4908 |
| Median | 0.0000 | 1.0000 | 0.0000 | 3.2250 | 0.7150 | 0.1300 | 31.360 | 0.0400 | 0.5000 |
| Max | 1.0000 | 5.0000 | 0.0073 | 10.210 | 1.8200 | 0.8500 | 35.315 | 1.2700 | 0.7500 |
| Min | 0.0000 | 0.0000 | 0.0000 | -13.150 | -5.1000 | -1.1000 | 27.356 | -4.9600 | 0.3300 |
| Std.Dev | 0.4703 | 1.3217 | 0.0008 | 2.7642 | 0.6321 | 0.1955 | 1.8106 | 0.6776 | 0.1262 |
| Obs | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |

means that the utilization of the organization system, structure and internal process are very well run optimally. The standard deviation of 0.6321, a ratio well above the mean, provides evidence for the substantial heterogeneity in structural capital across firms sampled.

Capital Employed (CE), with a mean of 0.1369, tends to have an average effect around 13.69% on the firm in terms of value added proposed. This contribution is less when compared to the other intellectual capital components (human capital and structural capital), signifying that physical and financial capitals are not centres of value creation for these selected firms. PT Waskita Beton Precast Tbk, with the lowest value of–1.1000 in 2020 indicates extremely ineffective capital use which leads to negative value added. The highest score 0.8500 goes to PT Indofarma Tbk at year of 2023 as the most efficient in using physical and financial capital that indicates sustainable performance, also support with sound financial management. A large standard deviation of 0.1955 versus the mean once more reflects large variability or heterogeneity in the data.

For control variables, firm size (SIZE), calculated as the natural logarithm of total assets, shows the mean in the sample at 31.592 meaning that our firms on average are relatively big firms. The average ROE is negative (mean = –0.0105), indicating that the existence of some loss firms has a significant effect on the overall mean level of return to shareholders. Independent Directors (IDN) has mean of 0.4908, which shows that on an average 49.08 percent of board is independent according to the current mandatory standardization.

**Table 5.**
Regression Model Feasibility Test, Overall Model Fit Test, and Coefficient of Determination Test (McFadden's R2)

| Df | Sig. Chi - Square |
|---|---|
| 8 | 0.5170 |
| LR statistic | Prob (LR statistic) |
| 38.97687 | 0.000005 |
| Step | McFadden R - squared |
| 1 | 0.257546 |

**Model Feasibility Test, Overall Model Fit Test, and Coefficient of Determination Test (McFadden's $R^2$)**

Table 5 indicate significance probability of 0.5170 is greater than the threshold at 0.05, this means that the model is adequate and have reasonable overall fit. The LR test produces a value of 38.97687 with p=0.000005. Since the LR statistic is much greater than its p-value, we can conclude that the independent variables collectively have a statistically significant impact on the dependent variable within logistic regression. The value of the McFadden R-squared is 0.257546 which means that the independent variables used in the model explain approximately 25.75% of all variability in the dependent variable and that these 25.75% are explained by variance fixtures while other unobserved factors account for remaining 74.25%.

**Hypothesis Test**

According to Table 6, the comparison method was that we compared the probabilities of significance with an error rate of 0.05. The first independent variable, CEO tenure (CT) has a positive but statistically not significant coefficient (0.1711), p = 0.3502: the hypo-thesis H1 does not hold. This result indicates that CEO tenure does not have a direct impact on the likelihood of financial statement fraud. The second independent variable, managerial ownership (MO), though carries a positive but insignificant coefficient (415.14>, p = 0.2689) that also invalidates H2. Therefore, the influence of managerial ownership to the likelihood for fraud of SOEs is insignificant. Conversely, the third variable human capital (HC) has a positive and significant coefficient (0.6559, p= 0.0051), validating H3 and implying that less experienced executives have greater potential for financial statement fraud. Meanwhile, structural capital (SC) has a negative and significant impact on fraud (–7.6548, p = 0.0008), which supports H4 providing evidence that strong structural capital would deter fraudulent financial reporting. The fifth variable, capital employed (CE), also exerts a negative and significant effect on fraud risk (−7.0113, p

= 0.0065), in support of H5, suggesting that companies using their capital more effectively involve less risk for fraud.

The control variables have different effects on financial statement fraud in the SOEs in Indonesia. SIZE has no significant influence (p = 0.4830), which is in line with prior research that reports an absence of a robust relationship between size of deceiving firm and fraud when regulation is stringent (Biduri et al., 2023). In contrast, ROE has a positive and significant impact on fraud (p = 0.0046), which means that the higher polity still motivate managers to misstate results to show continuity of good company performance as also suggested by Lotfi et al. (2022). Independent commissioners (IDN) are also positively associated with fraud risk (0.0024). In state-owned enterprises (SOEs), politically-appointed directors and poor company briefings can undermine effective monitoring. Altogether, the evidence suggests that performance incentives and weak monitoring increase fraud risk more than governance mechanisms such as firm size.

### CEO Tenure and Financial Statement Fraud

According to the results of regression analysis in Table 6, CEO tenure has a positive influence on financial statement fraud, which however is not significant to 1 level that implies Hypothesis 1 being rejected. This result suggests that the tenure length of CEO is not a direct cause for the reporting manipulated practices in Indonesian SOEs. While agency theory indicates that extended tenure leads to managerial entrenched interests and concentration of power, which encourages them to adopt opportunistic behaviour, the empirical evidence in this study does not support such prediction.

**Table 6.**
Regression Analysis

| Variable | Coefficient | Prob. |
|---|---|---|
| Constant | 1.8274 | 0.6624 |
| CT | 0.1711 | 0.3502 |
| MO | 415.14 | 0.2689 |
| HC | 0.6559 | 0.0051 |
| SC | -7.6548 | 0.0008 |
| CE | -7.0113 | 0.0065 |
| SIZE | -0.0997 | 0.4830 |
| ROE | 7.4888 | 0.0046 |
| IDN | 6.3951 | 0.0024 |

The small impact of tenure is supported by earlier works such as Sun et al. (2014); Alhmood et al. (2020); Sinebe & Jeroh (2023); and Putra & Setiawan (2024) who also find that CEO tenure is not consistently related to manipulative reporting behavior. Ali & Zhang, (2015) also show that the association between CEO tenure and earnings management decrease in firms where both internal and external monitoring is strong. Taken together, the results of these studies suggest that institutional setting (more so than CEO tenure) is more crucial in explaining whether a lengthier CEO incumbency opens up opportunities for fraudulent reporting.

The governance of SOEs in Indonesia offers a reasonable explanation for this result. Various supervisory agencies, such as the Ministry of SOEs, Financial Services Authority, Audit Board of Indonesia, and the board of commissioners, or external auditors also supervise. This hierarchical monitoring structure provides extended checks and balances that make it difficult for CEOs to be overly opportunistic when reporting. This explanation is supported by findings of Rochmah & Budiwitjaksono (2025), in which stringent monitoring structures within SOEs mitigates the role of internal manager characteristics on fraud. Furthermore, the short tenure of CEOs in the sample (1.37 years on average and 1 year median) is another mitigating circumstance. The implementation of fast rotation system as required by Government Regulation No. 45/2005, and regular performance assessments lead CEOs from acquiring excessive power to be able to control financial reporting process. Alhmood et al. (2020) observe and CEOs are generally prudent in the first period of leadership, supporting this interpretation.

As opposed to private firms, not very many CEO's of SOEs hold considerable equity to induce stock-price incentives. Still, the lack of capital-market incentives

lowers pressure and justification for earnings manipulation. Yahaya et al. (2025) noted that managerial ownership is an important force to exert on opportunism in the SOE context and thus its absence will function as a barrier to it. Combined, the contextual and institutional environments in Indonesia explain why CEO tenure does not affect financial statement fraud. The rigid multi-tier picking system, rapid rotation of leaders, and low level of equity-based incentives taken together serve to offset the potential for opportunity, pressure, and rationalization that could otherwise encourage fraudulent reporting.

## Managerial Ownership and Financial Statement Fraud

In Table 6, the results of regression analysis show that managerial ownership is positively related to financial statement fraud but it is not statistically significant at $p < 0,05$ with rejecting Hypothesis 2. Such result implies that higher managers' equity ownership is not always coincide with increased reporting manipulation in Indonesian SOEs. Agency theory assumption that there is close alignment of interests between managers and shareholders through managerial ownership is not supported by empirical evidence in this study.

Agency theory suggests that managerial ownership may produce two contrasting effects: the alignment effect, in which ownership reinforces the alignment of interests between managers and shareholders, and the entrenchment effect in which high levels of ownership can lead to managerial domination and expropriation. Both effects, however, entail a threshold level of manager equity ownership that would grant them a strong voice to bend incentive structures and discretionary power. Such a foundation premise is not applicable to SOEs with relatively low manager ownership. As a result, the discrepancy with agency theory drivers is not due to an empirical aberration; rather, it arises because agency theory assumptions do not correspond well to the reality of ownership in SOEs. This interpretation is supported by the work of Sadique et al. (2019); Girau et al. (2022); Rahmawati & Juliarto (2025); and Yusnita et al. (2022), who also find that changes in managerial ownership do not influence manipulative reporting.

Descriptive statistics corroborate this interpretation. The mean managerial ownership is 0.03% in the sample, which may not be enough to generate powerful financial incentives or individual interest for managers to do earnings management on consolidated reports and affect stock price (Girau et al., 2022). No substantial ownership would reduce the pressure and rationalization elements of the fraud triangle, in line with Yahaya et al. (2025), who did not address managerial ownership as the major source of opportunistic behavior in emerging markets. Second, the dominant role of state ownership in SOEs limits managerial autonomy to make strategic decisions. At the same time, a holistic monitoring mechanism (e.g., the Ministry of State-Owned Enterprises, board of commissioners, Financial Services Authority, Audit Board of Indonesia, and external auditor) constrains the rapportunity factor. Girau et al. (2022) note that strong oversight has been the best fraud invigorant.

In addition, Rochmah & Budiwitjaksono (2025) show that if controlling less effective in terms of oversight, its marginal contribution to fraud is not significant in SOEs, suggests the internal checks-and-balances system works at least. Taken together these institutional characteristics imply that managerial ownership is not a relevant governance mechanism against the backdrop of financial statement fraud in Indonesian SOEs. A very low level of ownership concentrations do not provide sufficient motives to manipulation, on the contrary, structural limitations and strict controls make such possibilities inexistent, should they exist.

## Human Capital and Financial Statement Fraud

The results of the regression analyses provided in Table 6 show that human

capital (proxied by managerial capacity and technical competence) is positively and significantly related to financial statement fraud thus H3 is supported. This result suggests that within SOEs, high operational complexity and sophisticated managerial competence are more likely to be exploited. In these conditions, more power can be used for manipulation of financial statements. This result agrees with that of Yusnita et al. (2022); Dewi et al. (2023); and Awaliyah & Mutmainah (2023) who also confirm the effect of human capital on financial statement fraud.

These results are in line with the Resource Based View (RBV) that views managerial capability as a strategic asset. Computing the descriptive statistics, human capital efficiency is on average of 289.14%, that means SOE's human capital are productive in terms of value creation. However, such a basis can become an opportunity to make use of the acquired resources as opportunistic capabilities, which would point toward a limit of RBV. High human competences further accent the opportunity and rationalization forces within the fraud triangle model. Managers with greater technical skill, as proxied by higher human capital efficiency, should be better at pinpointing deficiencies in accounting and internal control systems and creating complex manipulation schemes difficult for external auditors to uncover. Opportunities are also associated closely with capabilities of the individual (Awaliyah & Mutmainah, 2023).

Arif et al. (2023) found that, the use of earnings management incentives recently recorded in literature is significantly correlated with CEO firm-specific knowledge. Legitimacy in financial management: Managers with high levels of active analytical processing are more likely to justify their behaviour under performance pressure (e.g., engage in window dressing) as necessary to save face for the firm. Ali & Zhang (2015) also posit that new CEOs with high human capital are more likely to engage in earnings management during their initial years in order to influence market expectations of their skills. Whereas some studies, such as initially Rochmah & Budiwitjaksono (2025), have evidence that problematic in the field of education CEO SOEs can be effectively suppressed, this difference demonstrates that inside SOEs areas of specialization rather tend to constitute opportunities so much more, than become the basis for avoiding various managers mistakes. Therefore, to prevent the risk of that happening, SOEs are recommended to incorporate a competency-based monitoring and improve internal control mechanisms in order to effectively detect technical manipulation that high human capital managers often cause.

### Structural Capital and Financial Statement Fraud

Regression from Table 6 indicates that the structural capital had a significantly negative influence on financial statement fraud, supporting H4. The negative coefficient of structural capital is significantly statistically negatively related to fraud risk implying that structural capital plays a role in reducing fraud risk as increases in structural capital will bring about significant decrease in the probability of fraudulent financial reporting. This result is consistent with Lotfi et al. (2022) and Yusnita et al. (2022), who argue that structural capital acts as an efficient governance device to mitigate opportunistic behaviour.

Within the RBV, structural capital is defined as internally available assets, systems, routines and procedures which institutionalise organisational practices and embed knowledge within the organisations (Smriti & Das, 2018). Although the value of structural capital is broadly acknowledged as a source of value creation, this research provides empirical evidence that it serves as an important defense against fraud. Descriptive results that organizations' structural capital contributes 59.38% to added value, show that SOEs have formed mature structure capital for supporting practical control functions. As in agency theory, where systematic control and monitoring mechanisms restrict managerial discretion and information asymmetry. In the fraud

triangle model, structural capital is key for weakening in the opportunity dimension of fraud. Strong organizational controls and procedures reduce the limits on management manipulation of accounting estimates, and fully integrated systems allow for a near- real-time catch-up of discrepancies minimizing human judgment. Uniform accounting practices reduce the degree of discretion afforded to manipulators. An increase in the efficiency of transactions leads to a decline in fraudulent practices (Lotfi et al., 2022) and generates positive attitudes toward fraud (Hamdan, 2018). Worse governance structures lead to a greater amount of exposure against fraud (Sadique et al., 2019), while better internal systems and operational processes are the cornerstone for minimizing fraud (Awaliyah & Mutmainah, 2023).

In SOEs, the level of effect of structural capital and digital systems (such as Enterprise Resource Planning [ERP], e-procurement, e-reporting, and digital performance dashboards) that support transparency and internal controls is augmented. Furthermore, multi-layer supervision mechanism increases the monitoring efficiency of the board of commissioners and enhances financial reporting quality. Thus, structural capital constitutes not only an intangible strategic resource in the RBV but also a key aspect of governance controls advocated by agency theory. In general terms then, they indicate that, the development of structural capital will be an important step towards reducing financial reporting fraud. In a heavily regulated SOE environment, sound systems and processes offer not only an additional capability advantage but also the frontline defense to maintain report integrity.

## Capital Employed and Financial Statement Fraud

Table 6 demonstrates that the negative and significant impact of capital employed on financial statement fraud, which confirms Hypothesis 5. This result suggests that firms with high level of capital productivity are unlikely to commit fraudulent financial reporting. This finding is consistent with Lotfi et al. (2022) that firms which are more capital efficient generally present lower opportunistic behavior.

Resource-Based View (RBV) according to RBV the capital employed captures how effectively a firm uses its physical and financial capital as an strategic resource that is used efficiently, to provide competitive advantage and contribute to superior performance. The effective use of operational assets can increase revenues through an increase in capital employed (Dewi et al., 2023). This trend is observed in the descriptive analysis of this study with an average 13.69% for capital employed as a contributor to obtaining added value. Even this ratio suggests that the physical capital is not anymore the most significant source of value-creation but it reflects, consistent with the trend towards a knowledge-based economy, also, the efficiency reached in using of employed capital and, especially, the rigorous management applied to financial and physical assets. This profile indicates consistent financial performance that directly undermines the pressure side of the fraud triangle. In periods of stable performance, management has fewer incentives to 'hide' poor performance or massage earnings in order to comply with performance targets or debt covenants (Lotfi et al., 2022). In this context, capital employed efficiency evidences that managers are aligned with shareholder interests mitigating agency conflicts.

The significance role of the employed capital in Indonesia also sees because capital efficiency is determined to affect the behavior of earnings management. Optimal capital use is inherently connected to strong budget monitoring and performance assessment systems (Girau et al., 2022). They limit the opportunity component of the fraud triangle through enhanced internal control and greater financial reporting openness. Capital utilisation efficiency plays a significant role in the state- owned enterprises (SOEs) where it has become a key performance

monitoring measure scrutinized by Ministry of SOEs and national auditors, thereby adding the control path. Therefore, COE is not only representative of a better financial performance but also indicates the efficiency of governance. Thus, our results are consistent with both RBV (by providing evidence that resource deployment is strategically motivated) and agency theory (via the evidence that strong governance mitigates the potential risk of financial reporting fraud).

## CONCLUSION AND IMPLICATION

### Conclusion

The findings show that manager entrenchment, proxied by CEO tenure and managerial ownership, does not have a significant effect on financial statement fraud in Indonesian SOEs. However, two dimensions of intellectual capital (human capital and capital employed) effect significantly financial statement fraud. Human capital positively influences fraud, and the relationship is negative for structural capital and capital employed. These findings emphasize the critical importance of internal managers behaviour and responsible governance of intangible resources in inhibiting fraudulent behaviors. Analysis of control variables yields further insights. Both ROE and independent commissioners have statistically positive relationship with fraud. This means that the higher level of profitability and a higher proportion of independent commissioners can be considered as, surprisingly, aggravating factors which increase fraud probability in this situation. This result contradicts the prevailing wisdom and suggests that the effectiveness of such governance mechanisms in Indonesian State-Owned Enterprises (SOEs) may be obstructed by specific institutional or context contingency.

### Implications

This study contributes to agency theory and resource-based view by showing theoretically how managerial entrenchment and certain components of intellectual capital can even perversely help in opportunistic behaviour. Practically speaking, these findings have significant implications for regulators and companies' controlling power, drawing attention to the critical necessity of improving governance mechanisms and reducing excessive managerial power that tends to abuse intellectual capital in a responsible and ethical manner for deterring financial misreporting at SOEs.

## LIMITATIONS AND SUGGESTIONS

### Limitations

This study has some limitations that should be considered when interpreting the results. First, detection of financial statement fraud is primarily conducted based on the Beneish M-score that, although widely used for isolating cases of true fraud alone could lead to either type I (misclassification as non-fraudulent) or type II (false positive) errors. Future work may involve adapting and combining other fraud detection models. Second, the research only study SOEs that are listed on Indonesia Stock exchange so it will be able to have limited generalization for other organizational types (e.g. private firms) or for SOEs that operate under different form of regulations and institutions. Third, because of data limitation, the study fail to control for potentially important variables that may affect fraudulent behavior, like effectiveness of internal controls or management’s traits and ethical culture.

### Suggestions

Future research is also encouraged to assess the effects of qualitative variables, such as the robustness of the ethical culture in a firm, when employees are surveyed for employee perceptions or contents analysis from company codes of ethics. Moreover, gathering data from sources that more directly indicate the incidence of fraud (forensic audit reports, regulatory sanctions or whistleblower disclosures) may produce a portrayal of fraud incidence and improve the generalization ability of empirical research.

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