

The Effect of Intellectual Capital on Financial Statement Fraud in Manufacturing Companies Listed on Indonesia Stock Exchange 2018-2022

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ABSTRACT

Financial statement fraud is the rarest but most detrimental fraud. This type of fraud is growing and becoming more complicated than before due to technological developments. The massive use of technology increases dependence on intellectual assets so that these assets are predicted to minimize the potential for financial statement fraud. This study aims to examine whether intellectual capital negatively affects the probability of financial statement fraud. 105 observations from 30 manufacturing companies listed on the Indonesia Stock Exchange in 2018-2022 were sampled through purposive sampling techniques. Data was analyzed using descriptive statistics and panel data analysis processed with Eviews version 12. The results showed that only relational capital had an effect in reducing the possibility of financial statement fraud while structural capital had no effect. Human capital is known to be able to increase the possibility of financial statement fraud. This finding contributes to the need to consider intellectual capital in investigating financial statement fraud.

Keywords: Financial Statement Fraud; Intellectual Capital; Human Capital; Structural Capital; Relational Capital

INTRODUCTION

Financial statement fraud has been a prevalent issue in business over the past few decades (Nasir et al., 2019). Recently, major global companies such as KPMG in 2018 and The Kraft Heinz in 2021 were found to have engaged in financial statement fraud schemes. These scandals indicate that cases of financial statement fraud are still occurring to this day. Financial statement fraud refers to intentional and wrongful actions carried out by public companies, through the use of materially misleading financial statements, which cause losses and harm to investors and creditors (Rezaee & Riley, 2010). The Association of Certified Fraud Examiners (ACFE) estimates that companies experience losses due to fraud amounting to 5% of total revenue each year, and financial statement fraud dominates these losses (ACFE, 2018, 2020, 2022). Financial statement fraud is not limited to global cases, it is also prevalent in developing countries like Indonesia (Aviantara, 2023; Fitri et al., 2019; Iqbal et al., 2020). Based on ACFE's global survey, the manufacturing sector ranks second

with the most cases of financial statement fraud (ACFE, 2018, 2020, 2022). Several cases occurred in manufacturing sector in Indonesia such as PT. Timah Tbk in 2018 and PT FKS Food Sejahtera Tbk in 2019.

The rapid development of technology has contributed to more complicated financial statement fraud than before (EY, 2018). The prevalence of this phenomenon has resulted in a crisis of confidence in financial statements and has reduced their reliability (Jaswadi et al., 2022; Rostami & Rezaei, 2022). In addition, fraud causes loss of productivity, job uncertainty, and a decrease in trust in the auditing profession and capital markets (Demetriades & Owusu-Agyei, 2022). These consequences require companies to take various measures to prevent, detect, or reduce financial statement fraud.

Previous research has examined various variables with high probability to reduce financial statement fraud. These variables include organizational culture (Lestari, 2017; Wicaksono & Urumsah, 2017), corporate governance (Nasir et al., 2018; Nasir & Hashim, 2020; Rostami & Rezaei, 2022), earning management (Nasir et al., 2018), gender diversity (J. hui Luo et al., 2020; Wahyuningtyas & Aisyaturrahmi, 2021; Wang et al., 2022), ineffective monitoring, pressure, opportunity, and rationalization (Demetriades & Owusu-Agyei, 2022; Fitri et al., 2019; Owusu et al., 2021). Despite the many references that have examined the factors influencing financial statement fraud, there is still relatively little research that investigates the impact of intellectual capital.

The use of technology in the era of globalization has taken over many labor-based jobs. The implication of this change is that intangible assets are more valuable than tangible assets. Intangible assets in a company are also known as Intellectual Capital (IC). Based on literature in various disciplines, there are various definitions that are considered as intellectual capital with different terms. Although there are various definitions in previous research, most of these definitions state that intellectual capital is a non-monetary asset without physical form but has value or can provide benefits in the future (Choong, 2008). Specific definitions using the term intellectual capital state that intellectual capital is an intangible asset that cannot stand alone, so it cannot be valued separately from other assets. Intellectual capital is also the result of utilizing various intellectual, human capital, and organizational resources (Choong, 2008; Mouritsen et al., 2004; Rastogi, 2003). Castro et al. (2021) define intellectual capital as something that is hidden, has unique and implicit characteristics, not only in the structure of all assets but also in the organizational culture or corporate strategy. IC plays an important role in achieving company goals, improving organizational performance, and generating competitive advantages (Li et al., 2021; Lotfi et al., 2021; Olarewaju & Msomi, 2021; Salehi et al., 2022). This role explains that high IC will help companies achieve their targets, thereby reducing the possibility of financial statements being manipulated.

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IC is divided into three main components: Human Capital (HC), Structural Capital (SC), and Relational Capital (RC) (Bontis, 2001). HC includes knowledge, skills, technical abilities, and personal qualities such as talent, attitude, energy, intelligence, commitment, learning ability, creativity, imagination, collaboration, team participation, and focus on achieving the company's goals (Akhter et al., 2022). SC includes all non-human resources of a company such as databases, strategies, organizational structure, and everything that is worth more than its material value (Bontis et al., 2000). RC represents the potential of a company that includes knowledge embedded in its relationships with stakeholders such as good relationships with customers, reputation, and brand (Bontis, 1998).

Information related to IC in financial statements is still implicit because it is difficult to measure this asset and there is no specific standard references that regulate it, so the measurement and reporting are still voluntary. The International Financial Reporting Standards (IFRS) do not define the concept, principles, and methods of measuring intellectual capital assets (Zéghal & Maaloul, 2010). Although it is voluntary, companies in developed countries have started to measure and report IC. This is based on the awareness of the importance of IC in the process of creating company value, so it needs to be reported (Weqar et al., 2020). Conversely, IC in developing countries such as Indonesia is still in the growth phase, so it is not widely measured and reported (Smriti & Das, 2018).

The VAICTM model is one of the IC measurements that is widely used by academics and practitioners (Xu & Liu, 2020). The VAICTM model measures the efficiency resulting from a company's investment in IC. This study replaces the VAICTM model with costs as a measure of IC. This is because the awareness of IC in Indonesian companies is still low (Nurcholisah & Yadiati, 2017). In addition, IC in Indonesian companies is still in the development stage, so the value added produced is not yet significant. Therefore, measuring a company's investment in IC through costs incurred is considered more capable of describing a company's IC.

This study refers to the research conducted by Lotfi et al. (2021) who investigated the influence of IC components on financial statement fraud of companies listed on the Tehran Stock Exchange. Lotfi et al. (2021) claimed that their study falls into the first category to examine this influence. So far, there have been no studies linking intellectual capital to financial statement fraud in Indonesia. Therefore, this research can also be categorized as the first study to examine this topic in Indonesia. A modification was made by replacing VAICTM as an IC measurement. IC measurement in this study is adopted from several previous studies that used cost as an indicator of intellectual capital investment. This study contributes to the need to consider IC in investigating financial statement fraud.

Human Capital Has A Negative Effect on The Indication of Financial Statement Fraud

Financial statement fraud hinders a company in achieving its goals. Based on the fraud triangle theory, opportunity, rationalization, and pressure are the three components that drive fraud (Singleton & Singleton, 2010). HC is related to these three components of fraud. Fraud

triangle theory explains that opportunity is generally accompanied by an individual's ability to see the presence of this factor, to do the fraud, and to conceal their action. In addition, rationalization is also a factor that is heavily influenced by the quality of the individual. Rationalization involves the moral values held by the individual. Individuals justify their fraudulent behavior by rationalizing it through various reasons. Zheng et al. (2014) finds that the values held by internal company employees reduce their tendency to engage in fraudulent activities. So, even if individuals feel that there is an opportunity, they are capable of committing and concealing fraud, but the moral values they hold will decrease their tendency to engage in fraud. Opportunity and rationalization are less likely to occur if the employees recruited by the company have good abilities and qualities. This is consistent with the finding of Lotfi et al. (2021), which suggests that companies with high human capital will hire highly experienced and educated individuals, thus preventing the emergence of opportunity and rationalization factors.

Pressure is generally associated with financial aspects such as company targets. Previous research has shown that human capital increases the value of the company (Ni et al., 2020), company performance (Bataineh et al., 2022; Ur Rehman et al., 2022), and financial performance (Castro et al., 2021). The human capital possessed by the company will reduce the pressure factor because the company's targets and stakeholder expectations can be achieved. Based on this, human capital is predicted to reduce the tendency of the company to commit financial fraud. To examine this prediction, the following hypothesis will be analyzed:

H₁: Human capital has a negative effect on the indication of financial statement fraud.

Structural Capital Has A Negative Effect on Indication of Financial Statement Fraud

The knowledge-based economy views intangible assets, particularly knowledge, as the main asset in this era of globalization. This asset is embedded in every individual in the company. Bontis (1998) suggests that even if every individual in the company has a high level of intellectual capacity, if they are not supported by a good structure, process, and system, their contribution will not be maximized. The fraud triangle theory also explains that one of the factors that influence individuals to commit fraud is opportunity. SC is related to opportunity. Weak corporate governance and control systems are part of the structural capital that encourages the presence of opportunity factors.

Structural capital is the main component that provides greater benefits to companies. Structural capital will support the company to create good planning and effective control systems (Lotfi et al., 2021; Nuryaman et al., 2019). According to Jardon & Martinez-Cobas (2021), structural capital also includes intellectual property (patents, licenses, trademarks), the technology owned by the company, organizational systems, and the company's culture. These components are predicted to reduce the likelihood of financial statement fraud from the opportunity side because high structural capital will close loopholes for fraud. Singleton & Singleton (2010) in their book explain

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that the company environment can be a step to prevent fraud, such as governance structure, procedures, and rules. Based on this, the higher the structural capital owned by the company, the lower the tendency for the company to commit financial statement fraud. To examine this prediction, the following hypothesis will be analyzed:

H_2 : Structural capital has a negative effect on indication of financial statement fraud.

Relational Capital Has A Negative Effect on The Indication of Financial Statement Fraud

Stakeholders are important parties needed by a company. The significant influence of stakeholders on a company makes it necessary for the company to build and maintain good relationships with them. The good relationship between a company and its stakeholders is known as relational capital. Relational capital is simply defined as all intellectual capital related to the external relationships of a company, such as relationships with customers (Sa Ánchez et al., 2000). Relational capital arises from investment in building trust and goodwill through previous interactions, providing access to valuable resources for the company.

Relational capital encompasses the human and structural capital components that are part of a company's relationship with its stakeholders (Martini et al., 2016). The strong relationships that are built and become part of the relational capital are also related to the human capital of the company. Rationalization, as one of the factors of fraud according to the fraud triangle theory, depends on the morals and personal characteristics of individuals. Relational capital held by the company will decrease the intention of individuals to commit financial statement fraud. This is because such action will damage the company's reputation and long-standing relationships with stakeholders. Therefore, the higher the relational capital that the company has, the lower the tendency for financial statement fraud is predicted to be. To test this prediction, the following hypothesis will be analyzed:

H_3 : Relational capital has a negative effect on the indication of financial statement fraud

DATA, METHODS, AND ANALYSIS

This is a quantitative causal study aimed at testing the influence of human capital (HC), structural capital (SC), and relational capital (RC) variables on financial statement fraud of manufacturing companies listed in Indonesia Stock Exchange for 2018-2022. This study excludes financial statement of manufacturing companies that do not meet the components of research measurement. Based on the purposive sampling, 30 companies in 5 years observation were analyzed. The data used in the study are secondary data collected through Bloomberg, the official website of the Indonesia Stock Exchange (IDX) and the official website of each sample company.

The dependent variable in this study is financial statement fraud. Beneish M-Score is used to measure financial statement fraud. This formula is based on Beneish evaluation on sample

companies' financial statement that had engaged in earnings manipulation (Zack, 2013). This measurement is also used by Demetriades & Owusu-Agyei (2022), Lotfi et al. (2021), Rostami & Rezaei (2022), dan Salehi et al. (2022). Companies that are suspected of fraud with M-Score value >-2.22 will be given a value of 1 and 0 if not. To determine the score to be assigned, the M-score is measured using 8 measurement indices.

Table 1. Beneish M-Score Index

Measurement Index	Formula
Days' Sales in Receivable Index (DSRI)	$DSRI = \frac{CY \text{ Receivables}/CY \text{ Sales}}{PY \text{ Receivables}/PY \text{ Sales}}$
Gross Margin Index (GMI)	$GMI = \frac{(PY \text{ Sales}-PY \text{ Cost of Goods Sold})/PY \text{ Sales}}{(CY \text{ Sales}-CY \text{ Cost of Goods Sold})/CY \text{ Sales}}$
Asset Quality Index (AQI)	$AQI = \frac{(CY \text{ Total Assets}-CY \text{ Current Assets}-CY \text{ PP\&E})/CY \text{ Total Assets}}{(PY \text{ Total Assets}-PY \text{ Current Assets}-PY \text{ PP\&E})/PY \text{ Total Assets}}$
Sales Growth Index (SGI)	$SGI = \frac{CY \text{ Sales}}{PY \text{ Sales}}$
Depreciation Index (DEPI)	$DEPI = \frac{PY \text{ Depreciation}/(PY \text{ Depreciation}+PY \text{ PP\&E})}{CY \text{ Depreciation}/(CY \text{ Depreciation}+PY \text{ PP\&E})}$
Sales, General, and Administrative Expense Index (SGAI)	$SGAI = \frac{CY \text{ SG\&A Expense}/CY \text{ Sales}}{PY \text{ SG\&A Expense}/PY \text{ Sales}}$
Leverage Index (LVGI)	$LVGI = \frac{(CY \text{ LTD}+ CY \text{ Current Liabilities})/CY \text{ Total Assets}}{(PY \text{ LTD}+ PY \text{ Current Liabilities})/PY \text{ Total Assets}}$
Total Accruals to Total Assets (TATA)	$TATA = \frac{\Delta \text{Working Capital}- \Delta \text{Cash}- \Delta \text{Income Taxes Payable}- CY \text{ Depreciation and Amortization}}{CY \text{ Total Assets}}$
M-Score	$M = -4,84 + (0,920 \times DSRI) + (0,528 \times GMI) + (0,404 \times AQI) + (0,892 \times SGI) + (0,115 \times DEPI) - (0,172 \times SGAI) + (4,679 \times TATA) - (0,327 \times LVGI)$

Source: Zack, 2013.

The independent variables used in this study include the components of intellectual capital, namely human capital, structural capital, and relational capital. Human capital is measured using personnel costs Bontis & Fitz-enz (2002) dan Jardon & Martinez-Cobas (2021). This indicator covers the quality and quantity of human capital in the company as a whole, regardless of the contribution of each individual (Jardon & Martinez-Cobas, 2021). Structural capital is measured using R&D costs (Andrikopoulos, 2005; Jardon & Martinez-Cobas, 2021; Sydler et al., 2014; Vishnu & Gupta, 2014). R&D costs are used on the assumption that companies that invest in R&D have a structure that shows innovation and the use of technology and indicates future profitability (Ballester et al., 2003). Advertising costs are used to measure RC (Jardon & Martinez-Cobas, 2021; Nazari & Herremans,

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2007). The use of advertising costs as an indicator of Relational capital measurement shows that the company strives to increase its sales, thereby improving its relationship with stakeholders (Nazari & Herremans, 2007; Vishnu & Gupta, 2014). This research uses profitability and liquidity as control variables. Profitability in this study is measured using return on assets (ROA) and liquidity is measured using the current ratio. The data will then be analyzed using descriptive statistic and panel data analysis with the help of data processing software, namely Eviews version 12.

RESULTS AND DISCUSSION

Descriptive Statistic

The indication of financial statement fraud is measured using the Beneish M-Score with 8 measurement indices. Out of 105 samples, 26 are indicated to have committed fraud in their financial statements. Table 2 shows the distribution of samples indicated to have committed financial statement fraud.

Table 2. Sample Distribution

Manufacturing Companies	N	Financial Statement Fraud	
		Indicated	No Indication
	105	26	79

Source: Processed Data, 2023

The human capital (HC) variable, measured using personnel costs, has a minimum value of 5.340 and a maximum value of 6510. The average value is 802.169. This result indicates that on average, the sample companies spend Rp802.169 billion to improve their human capital. The structural capital (SC) variable, measured using R&D costs. Table 3 shows that this variable has a minimum value of 0.001 and a maximum value of 2020. The average value is 90.842. This value indicates that on average, the sample companies spend Rp90.842 billion to improve their structural capital. The relational capital (RC) variable is measured using advertising costs. Table 3 shows that this variable has a minimum value of 0.193 and a maximum value of 12836. The average value is 341.957. This value indicates that on average, the sample companies spend Rp341.957 billion to improve their relational capital.

Profitability and liquidity are control variables in this study. Profitability (Prof), measured using return on assets (ROA), has a minimum value of -0.191 and a maximum value of 0.621. The average profitability value of the sample is 0.076. This value indicates that, on average, the sampled companies have the ability to generate a profit of 7.6%. Liquidity (Liq) is measured using the current ratio. The minimum value among the sampled companies is 0.150, while the maximum value is 10.480. The average liquidity value is 2.344. This value indicates that, on average, the sampled companies have the ability to pay their short-term debts at a rate of 234.4%. The standard

deviation of financial statement fraud, human capital, structural capital, relational capital, and profitability indicates values larger than the average. This indicates that the data distribution of each variable is quite diverse. However, for the liquidity variable, the value is smaller than the average, suggesting that the data is less varied.

Table 3. Descriptive Statistic

Variable	Min	Max	Mean	Std. Dev.
HC	5.340	6510	802.169	1229.267
SC	0.001	2020	90.842	364.823
RC	0.193	12836	341.957	1307.319
Prof	-0.191	0.621	0.076	0.128
Liq	0.150	10.480	2.344	1.967

Source: Eviews 12 (data processed), 2023

Preliminary Test

Panel data regression consists of three models, namely Ordinary Least Square Model or Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To determine the best regression model, several tests need to be carried out. The first test carried out is the *Chow* test to compare the common effect model and the fixed effect model. If the cross-section chi-square probability value is < 0.05 then the fixed effect model is the best model. Table 4 shows that the cross-section chi-square probability value is $0.000 < 0.005$ which indicates that the fixed effect model is the best model.

Table 4. Chow Test

Effects Test	Statistic	Prob.
Cross-section F	2.5012	0.0009
Cross-section Chi-square	74.6662	0.0000

Source: Eviews 12 (data processed), 2023

After determining the fixed effect model as the best model, this model needs to be compared again with the random effect model through the *Hausman* test. The decision is made by looking at the value of the random cross-section probability. If the value is > 0.05 then the random effect model is the best model. If the random effect model is selected, then this model will be compared with the common effect model through the *Lagrange Multiplier* test. Based on table 5, the value of cross-section random probability is $0.0113 < 0.05$ then fixed effect model is the best model so it doesn't need to be continued to *Lagrange Multiplier* test.

Table 5. Hausman Test

Test Summary	Chi-Sq. Statistic	Prob.
Cross-section random	14.7981	0.0113

Source: Eviews 12 (data processed), 2023

Classical Regression Assumption Test

The next test conducted after selecting the model is the classical assumption test in the form of normality test, multicollinearity test, and heteroscedasticity test. The test results show the results of the normality test with a probability of $0.128 > 0.05$. This value indicates that the data is normally distributed.

Heteroscedasticity test is performed to see if there is a difference in variance or residuals from one observation to another in the regression model. The heteroscedasticity problem occurs when the probability value of this test < 0.05 . The results of the data analysis show the probability values for HC, SC, RC, Prof, and Liq in sequence are 0.949, 0.955, 0.944, 0.219, 0.267. All of these probability values indicate numbers > 0.05 so it is concluded that there is no heteroscedasticity problem in the regression model.

Multicollinearity test aims to test whether there is a high or perfect correlation between independent variables in a regression model. If the correlation between independent variables is high or perfect, then the regression coefficient value cannot be estimated accurately so this needs to be detected. Multicollinearity occurs when the correlation between two independent variables > 0.80 . Table 6 shows that there are no serious problems related to multicollinearity because the correlation between variables is < 0.80 .

Table 6. Multicollinearity Test

	HC	SC	RC	Prof	Liq
HC	1	0.2325	0.2027	0.1733	-0.1150
SC	0.2325	1	-0.0514	0.4771	-0.2863
RC	0.2027	-0.0514	1	-0.0005	-0.0346
Prof	0.1733	0.4771	-0.0005	1	0.0154
Liq	-0.1150	-0.2863	-0.0346	0.0154	1

Source: Eviews 12 (data processed), 2023

Panel Data Analysis

After classical assumption test, the testing was continued with hypothesis testing for the fixed effect model. Table 7 shows the coefficient values and probabilities for each variable along with R-squared and F values. The hypothesis is accepted if the probability value is < 0.05 and the coefficient is negative. Based on the results of the hypothesis test, only the third hypothesis (H3) was accepted. Statistically, the relational capital (RC) variable is known to have a negative effect on indications of financial statement fraud. The human capital (HC) variable has a probability value < 0.05 which indicates that there is an effect but has a positive coefficient value so H1 is rejected. The structural capital (SC) variable has a probability value > 0.05 so H2 also rejected. Control variables in the form of profitability (Prof) and liquidity (Liq) have probability values < 0.05 and positive coefficients. This value indicates that the higher the profitability and liquidity of the company, the higher the likelihood of financial statement fraud.

The R-squared value indicates how much the independent variable can affect the dependent variable. Table 7 shows an R-squared value of 0.5818. This value explains that the independent variables in this study have an influence of 58.18% on the dependent variable. The Prob(F-statistic) value < 0.05 indicates that the regression model fits the data. Table 5 shows a Prob(F-statistic) value of $0.0001 < 0.05$ so the regression model fits the data.

Table 7. Panel Data Analysis Results

Variable	Coefficient	Prob.	Note
HC	0.0004	0.0271	Reject H_1
SC	-0.0002	0.7449	Reject H_2
RC	-0.0000012	0.0342	Accept H_3
Prof	1.1360	0.0095	
Liq	0.3430	0.0078	
Constant	-0.3303		
R-Squared	0.5818		
Prob(F-Statistic)	0.0001		

Source: Eviews 12 (data processed), 2023

Human capital has a negative effect on indication of financial statement fraud

The first hypothesis states that human capital has a negative effect on the indication of financial statement fraud. Based on the data analysis results, this hypothesis is rejected. Human capital is known to have a positive effect on the likelihood of financial statement fraud. This result explains that the higher the human capital of a company, the greater the likelihood of financial statement fraud. This result is not in line with research conducted by Lotfi et al. (2021). High human capital indicates high individual capability. Based on the fraud triangle theory, opportunity always goes hand in hand with capability. This factor is suspected to trigger companies with high human capital to act dishonestly.

Another reason that is suspected drive the positive influence of human capital on financial statement fraud is that companies give too much burden and pressure to their human resources. Companies assess them as highly capable to handle the burden. This leads a negative impact to the company. This is supported by research conducted by Chan (2009) and Shiu (2006) which shows that the higher the human resources, the lower the company's performance. To overcome declining company performance, individuals choose to commit financial statement fraud. High moral values in high human capital are suspected to be unable to maintain individual tendencies to behave dishonestly as stated by Zheng et al. (2014).

Structural Capital Has A Negative Effect on Indication of Financial Statement Fraud

The second hypothesis is that structural capital has a negative effect on the indication of financial statement fraud. Based on the analysis results, this hypothesis is also rejected. It was

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found that structural capital does not have an influence on the indication of financial statement fraud. According to Chen et al., (2005) and Clarke et al. (2011), structural capital takes a longer time to have an impact on company performance. Structural capital, such as new systems, may experience operational issues initially but will gradually decrease over time (Clarke et al., 2011). This is believed to have affected the results of this study, indicating that the variable of structural capital also does not show an influence on the indication of financial statement fraud due to its time-lag issues. Another possible reason for these results is that Indonesia is still a developing country so non-human assets in companies have not yet become the main focus. This statement is supported by the company's structural capital value in table 2 which is the smallest value compared to other components.

Relational Capital Has A Negative Effect on Indication of Financial Statement Fraud

The third hypothesis is that relational capital has a negative effect on the indication of financial statement fraud. Based on the data analysis results, this hypothesis is accepted. The data analysis results show that the higher the relational capital of a company, the smaller the likelihood of financial statement fraud. High relational capital indicates a strong relationship between the company and stakeholders. This relationship allows companies to gain a good reputation and important resources to achieve competitive advantage (X. Luo et al., 2004).

Relational capital is closely related to human capital. The results of this research indicate that a high level of human capital increases the likelihood of financial statement fraud occurring. Conversely, a high level of relational capital in a company reduces the likelihood of this fraud occurring. In other words, the relationships established by the company are capable of decreasing individuals' intent to engage in financial statement fraud. According to the fraud triangle theory, this statement can be explained by the fraud factor, which is rationalization. Rationalization involves the moral values held by individuals. The research findings of Zheng et al. (2014), stated that individual moral values can reduce their tendency to engage in fraudulent behavior. The longstanding good relationship established with stakeholders can make individuals reconsider their intent to act dishonestly. This can occur when individuals possess strong moral values that can diminish the presence of the rationalization factor. This result is in line with research conducted by (Lotfi et al., 2021) which shows that high relational capital can reduce the tendency to commit financial statement fraud.

CONCLUSION AND SUGGESTIONS

This study aims to examine the influence of human capital, structural capital, and relational capital on indications of financial statement fraud in manufacturing companies in Indonesia. Only relational capital has an influence on reducing the indication of financial statement fraud, while human and structural capital do not. These findings contribute to the literature on intellectual

capital and financial statement fraud, indicating that intellectual capital, particularly relational capital, can reduce financial statement fraud. For manufacturing companies, efforts are needed to optimize human resources to minimize the tendency of individuals to engage in fraudulent behavior. Additionally, companies can increase their investment in structural and relational capital to benefit the company, concerning financial statement fraud in particular. For stakeholders, information about a company's intellectual capital can be used as a consideration in decision-making related to potential business partnerships.

The limitations of this research include the use of proxies and previous studies on the same topic. The use of research and development costs as a proxy for measuring structural capital may not fully represent all manufacturing companies listed on the Indonesia Stock Exchange. Only a small number of companies report their expenses related to research and development investments separately from other expenses. Therefore, future research is expected to use more comprehensive proxies to reach a larger number of companies. There is also limited research examining the ability of intellectual capital to reduce the indication of financial statement fraud in Indonesia. Therefore, in addition to considering different measurements, future research should explore other sectors of companies listed on the Indonesia Stock Exchange to expand the findings of this research topic.

REFERENCES

- ACFE. (2018). *Report to The Nations: 2018 Global Study on Occupational Fraud and Abuse*.
- ACFE. (2020). *Report to The Nations: 2020 Global Study on Occupational Fraud and Abuse*.
- ACFE. (2022). *Occupational Fraud 2022: A Report To The Nations*.
- Akhter, F., Hossain, M. R., Omrane, A., & Kabir, M. R. (2022). Impact of Corporate Attributes on Human Resource Disclosure Practices, Evidences from Commercial Banks of Bangladesh. *FIIB Business Review*, 11(3), 303–314. <https://doi.org/10.1177/23197145211039343>
- Andrikopoulos, A. (2005). The real-options approach to intellectual capital analysis: A critique. *Knowledge and Process Management*, 12(3), 217–224. <https://doi.org/10.1002/kpm.230>
- Aviantara, R. (2023). Scoring the financial distress and the financial statement fraud of Garuda Indonesia with «DDCC» as the financial solutions. *Journal of Modelling in Management*, 18(1), 1–16. <https://doi.org/10.1108/JM2-01-2020-0017>
- Ballester, M., Garcia-Ayuso, M., & Livnat, J. (2003). The economic value of the R&D intangible asset. *European Accounting Review*, 12(4), 605–633. <https://doi.org/10.1080/09638180310001628437>
- Bataineh, H., Abbadi, S. S., Alabood, E., & Alkurdi, A. (2022). The effect of intellectual capital on firm performance: the mediating role of family management. *Journal of Islamic Accounting and Business Research*, 13(5), 845–863. <https://doi.org/10.1108/JIABR-02-2022-0032>
- Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management Decision*, 36(2), 63–76.

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- Bontis, N. (2001). Assessing knowledge assets: a review of the models used to measure intellectual capital. *International Journal of Management Reviews*, 3(1), 41–60.
- Bontis, N., & Fitz-enz, J. (2002). Intellectual capital ROI: A causal map of human capital antecedents and consequents. *Journal of Intellectual Capital*, 3(3), 223–247. <https://doi.org/10.1108/14691930210435589>
- Bontis, N., William Chua Chong, K., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85–100. <https://doi.org/10.1108/14691930010324188>
- Castro, J. P. G., Ramírez, D. F. D., & Escobar, J. M. (2021). The relationship between intellectual capital and financial performance in Colombian listed banking entities. *Asia Pacific Management Review*, 26(4), 237–247. <https://doi.org/10.1016/j.apmrv.2021.03.002>
- Chan, K. H. (2009). Impact of intellectual capital on organisational performance: An empirical study of companies in the Hang Seng Index (Part 2). *Learning Organization*, 16(1), 22–39. <https://doi.org/10.1108/09696470910927650>
- Chen, M. C., Cheng, S. J., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, 6(2), 159–176. <https://doi.org/10.1108/14691930510592771>
- Choong, K. K. (2008). Intellectual capital: Definitions, categorization and reporting models. *Journal of Intellectual Capital*, 9(4), 609–638. <https://doi.org/10.1108/14691930810913186>
- Clarke, M., Seng, D., & Whiting, R. H. (2011). Intellectual capital and firm performance in Australia. *Journal of Intellectual Capital*, 12(4), 505–530. <https://doi.org/10.1108/14691931111181706>
- Demetriades, P., & Owusu-Agyei, S. (2022). Fraudulent financial reporting: an application of fraud diamond to Toshiba's accounting scandal. *Journal of Financial Crime*, 29(2), 729–763. <https://doi.org/10.1108/JFC-05-2021-0108>
- EY. (2018). *15th Global Fraud Survey, Integrity in The Spotlight: The future of compliance*.
- Fitri, F. A., Syukur, M., & Justisa, G. (2019). Do The Fraud Triangle Components Motivate Fraud In Indonesia? *Australasian Accounting, Business, and Finance Journal*, 13(4), 63–72.
- Ikbal, M., Irwansyah, I., Paminto, A., Ulfah, Y., & Darma, D. C. (2020). Explores the specific context of financial statement fraud based on empirical from indonesia. *Universal Journal of Accounting and Finance*, 8(2), 29–40. <https://doi.org/10.13189/ujaf.2020.080201>
- Jardon, C. M., & Martinez-Cobas, X. (2021). Measuring intellectual capital with financial data. *PLoS ONE*, 16(5 May). <https://doi.org/10.1371/journal.pone.0249989>
- Jaswadi, J., Purnomo, H., & Sumiadji, S. (2022). Financial statement fraud in Indonesia: a longitudinal study of financial misstatement in the pre- and post-establishment of financial services authority. *Journal of Financial Reporting and Accounting*. <https://doi.org/10.1108/JFRA-10-2021-0336>
- Lestari, E. B. (2017). The Factors Affecting Tendency Of Fraud In Government Sector. *Finance, and Forensic Accounting*, 5(2), 67–76. <http://jaffa.trunojoyo.ac.id/jaffa>

- Li, X., Nosheen, S., Haq, N. U., & Gao, X. (2021). Value creation during fourth industrial revolution: Use of intellectual capital by most innovative companies of the world. *Technological Forecasting and Social Change*, 163. <https://doi.org/10.1016/j.techfore.2020.120479>
- Lotfi, A., Salehi, M., & Lari Dashtbayaz, M. (2021). The effect of intellectual capital on fraud in financial statements. *TQM Journal*. <https://doi.org/10.1108/TQM-11-2020-0257>
- Luo, J. hui, Peng, C., & Zhang, X. (2020). The impact of CFO gender on corporate fraud: Evidence from China. *Pacific-Basin Finance Journal*, 63, 101404. <https://doi.org/10.1016/J.PACFIN.2020.101404>
- Luo, X., Griffith, D. A., Liu, S. S., & Shi, Y.-Z. (2004). The Effects of Customer Relationships and Social Capital on Firm Performance: A Chinese Business Illustration. In *Source: Journal of International Marketing* (Vol. 12, Issue 4).
- Martini, B. S., Corvino, A., Doni, F., & Rigolini, A. (2016). Relational capital disclosure, corporate reporting and company performance: Evidence from Europe. *Journal of Intellectual Capital*, 17(2), 186–217. <https://doi.org/10.1108/JIC-07-2015-0065>
- Mouritsen, J., Nikolaj Bukh, P., & Marr, B. (2004). Reporting on intellectual capital: Why, what and how? *Measuring Business Excellence*, 8(1), 46–54. <https://doi.org/10.1108/13683040410524739>
- Nasir, N. A., Ali, M. J., & Ahmed, K. (2019). Corporate governance, board ethnicity and financial statement fraud: evidence from Malaysia. *Accounting Research Journal*, 32(3), 514–531. <https://doi.org/10.1108/ARJ-02-2018-0024>
- Nasir, N. A., Ali, M. J., Razzaque, R. M. R., & Ahmed, K. (2018). Real earnings management and financial statement fraud: evidence from Malaysia. *International Journal of Accounting and Information Management*, 26(4), 508–526. <https://doi.org/10.1108/IJAIM-03-2017-0039>
- Nasir, N. A., & Hashim, H. A. (2020). Corporate governance performance and financial statement fraud: evidence from Malaysia. *Journal of Financial Crime*, 28(3), 797–809. <https://doi.org/10.1108/JFC-09-2020-0182>
- Nazari, J. A., & Herremans, I. M. (2007). Extended VAIC model: Measuring intellectual capital components. *Journal of Intellectual Capital*, 8(4), 595–609. <https://doi.org/10.1108/14691930710830774>
- Ni, Y., Cheng, Y. R., & Huang, P. (2020). Do intellectual capitals matter to firm value enhancement? Evidences from Taiwan. *Journal of Intellectual Capital*, 22(4), 725–743. <https://doi.org/10.1108/JIC-10-2019-0235>
- Nurcholisah, K., & Yadiati, W. (2017). Intellectual Capital Disclosure and Information Asymmetry in General Banking Listed in Indonesia Stock Exchange. *International Business Management*, 11(4), 972–983.
- Nuryaman, Kartadjumena, E., & Gusnandar Arnan, S. (2019). The influence of intellectual capital on earnings management through real activities manipulation in Indonesian manufacturing companies. *International Journal of Economics and Business Research*, 18(3), 277–291.

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- Olarewaju, O. M., & Msomi, T. S. (2021). Intellectual capital and financial performance of South African development community's general insurance companies. *Heliyon*, 7(4), e06712. <https://doi.org/10.1016/J.HELIYON.2021.E06712>
- Owusu, G. M. Y., Koomson, T. A. A., Alipoe, S. A., & Kani, Y. A. (2021). Examining the predictors of fraud in state-owned enterprises: an application of the fraud triangle theory. *Journal of Money Laundering Control*. <https://doi.org/10.1108/JMLC-05-2021-0053>
- Rastogi, P. N. (2003). The nature and role of IC: Rethinking the process of value creation and sustained enterprise growth. *Journal of Intellectual Capital*, 4(2), 227–248. <https://doi.org/10.1108/14691930310472848>
- Rezaee, Z., & Riley, R. (2010). *Financial Statement Fraud: Prevention and Detection* (second edition). John Wiley & Sons, Inc.
- Rostami, V., & Rezaei, L. (2022). Corporate governance and fraudulent financial reporting. *Journal of Financial Crime*, 29(3), 1009–1026. <https://doi.org/10.1108/JFC-07-2021-0160>
- Sa Ânchez, P., Chaminade, C., & Olea, M. (2000). Management of intangibles An attempt to build a theory. *Journal of Intellectual Capital*, 1(4), 1469–1930. <http://www.emerald-library.com>
- Salehi, M., Ali Mohammed Al-Msafir, H., Homayoun, S., & Zimon, G. (2022). The effect of social and intellectual capital on fraud and money laundering in Iraq. *Journal of Money Laundering Control*. <https://doi.org/10.1108/JMLC-12-2021-0142>
- Shiu, H.-J. (2006). The Application of the Value Added Intellectual Coefficient to Measure Corporate Performance: Evidence from Technological Firms. *International Journal of Management*, 23(2), 356.
- Singleton, T. W., & Singleton, A. J. (2010). *Fraud Auditing and Forensic Accounting* (Fourth Edition). John Wiley & Sons, Inc.
- Smriti, N., & Das, N. (2018). The impact of intellectual capital on firm performance: a study of Indian firms listed in COSPI. *Journal of Intellectual Capital*, 19(5), 935–964. <https://doi.org/10.1108/JIC-11-2017-0156>
- Sydler, R., Haefliger, S., & Pruksa, R. (2014). Measuring intellectual capital with financial figures: Can we predict firm profitability? *European Management Journal*, 32(2), 244–259. <https://doi.org/10.1016/j.emj.2013.01.008>
- Ur Rehman, A., Aslam, E., & Iqbal, A. (2022). Intellectual capital efficiency and bank performance: Evidence from islamic banks. *Borsa Istanbul Review*, 22(1), 113–121. <https://doi.org/10.1016/j.bir.2021.02.004>
- Vishnu, S., & Gupta, V. K. (2014). Intellectual capital and performance of pharmaceutical firms in India. *Journal of Intellectual Capital*, 15(1), 83–99. <https://doi.org/10.1108/JIC-04-2013-0049>
- Wahyuningtyas, E. T., & Aisyaturrahmi. (2021). The incidence of accounting fraud is increasing: is it a matter of the gender of chief financial officers? *Journal of Financial Crime*. <https://doi.org/10.1108/JFC-10-2021-0230>

- Wang, Y., Yu, M., & Gao, S. (2022). Gender diversity and financial statement fraud. *Journal of Accounting and Public Policy*, 41(2). <https://doi.org/10.1016/j.jaccpubpol.2021.106903>
- Weqar, F., Sofi, Z. A., & Haque, S. M. I. (2020). Nexus between intellectual capital and business performance: evidence from India. *Asian Journal of Accounting Research*, 6(2), 180-195. <https://doi.org/10.1108/AJAR-07-2020-0064>
- Wicaksono, A. P., & Urumsah, D. (2017). Factors Influencing Employees To Commit Fraud In Workplace Empirical Study In Indonesian Hospitals. *Asia Pacific Fraud Journal*, 1(1), 1. <https://doi.org/10.21532/apfj.001.16.01.01.01>
- Xu, J., & Liu, F. (2020). The impact of intellectual capital on firm performance: A modified and extended vaic model. *Journal of Competitiveness*, 12(1), 161-176. <https://doi.org/10.7441/joc.2020.01.10>
- Zack, G. M. (2013). *Financial Statement Fraud*. John Wiley & Sons, Inc.
- Zéghal, D., & Maaloul, A. (2010). Analysing value added as an indicator of intellectual capital and its consequences on company performance. *Journal of Intellectual Capital*, 11(1), 39-60. <https://doi.org/10.1108/14691931011013325>
- Zheng, Q., Luo, Y., & Wang, S. L. (2014). Moral Degradation, Business Ethics, and Corporate Social Responsibility in a Transitional Economy. *Journal of Business Ethics*, 120(3), 405-421. <https://doi.org/10.1007/s10551-013-1668-4>