The impact of intellectual capital on earnings management across the firm life cycle: A study of manufacturing companies listed on the IDX from 2020 to 2023

Ashila Taqiyya Ruzami
Faculty of Economics and Business, Universitas Padjadjaran

Nanny Dewi Tanzil
Faculty of Economics and Business, Universitas Padjadjaran

Abstract: *This study aims to determine how each element of intellectual capital affects earnings management based on the business life cycle. The data used for this study come from manufacturing companies listed on the IDX from 2020 to 2023. Overall, the research sample consists of 121 companies. The criteria for classifying a company's life cycle are based on the company's average sales growth. This study uses panel data regression analysis through the EViews 12 application. The results conclude that all intellectual capital components negatively influence earnings management, regardless of the company's life cycle. Meanwhile, HCE has a significant negative effect at the mature and decline stages but is insignificant during the growth stage. Additionally, SCE has a significant negative effect during the growth stage but an insignificant negative effect and an insignificant positive effect at the mature and decline stages. Furthermore, RCE shows a significant negative effect at the decline stage and an insignificant negative effect at the growth and mature stages. The last component, CEE, exhibits a significant negative effect at the mature stage but is insignificant during the growth and decline stages. Simultaneously, each intellectual capital component influences earnings management.*

Keywords: Earnings Management; Intellectual Capital; Life Cycle Stage

Introduction

The rapid development of the capital market tightens business competition, encouraging companies to be prepared to face various risks and challenges to maintain their position and show optimal performance. This competitive environment also encourages companies to design strategies to attract investors through solid performance and value. A company's value reflects investors' expectations of its future performance. Consequently, companies must maximize their value to attract investors' attention, and reliable financial and non-financial information is essential.

In financial reporting, managers, as internal parties, can convey to stakeholders how the company is doing. However, asymmetric information can arise between managers and company owners due to differences in each party's information capacity regarding the company, which can lead to agency conflicts.

Therefore, before making decisions based on financial statements, it is essential to ensure that the reported earnings accurately reflect the company's actual condition.

The main component of financial statements, namely earnings, can describe how the company performed during a period. This information is a mainstay for users in decision-making and policy determination (Ghozali et al., 2015). The importance of this information can be used as an opportunity for managers to manipulate information on company profits. Earnings management, driven by managerial decisions to manipulate financial statements, can mislead stakeholders. Managers can manage earnings to meet or exceed expectations by shifting income or expenses between periods and applying favorable accounting policies. An example was PT Tiga Pilar Sejahtera Food Tbk (AISA) in 2017; it was found that there was an excess value of Rp 5 trillion; the excess came from receivables accounts of Rp 1.63 trillion, inventories of Rp

1.31 trillion, and fixed assets of Rp 2.35 trillion.

The tightening of competition itself can be seen from the significant contribution of industrial growth to the country's GDP. According to data from the Central Statistics Agency (BPS), the manufacturing industry has the most significant contribution, with a value of 18.67% in 2023. This can be caused by people's dependence on consumer goods to fulfill their daily needs. With this dependence, demand will increase and open opportunities for new companies to enter the industry. As a result, people also have many choices to obtain goods at lower prices, good quality, and even new innovative products. This can also encourage managers to manage earnings due to the pressure to maintain the company's position and meet investor expectations.

Companies must focus on a knowledge-based economy to survive in a competitive industry, where knowledge and technology management are critical. Intellectual capital (IC), which includes human, structural, and relational capital, plays a vital role in creating competitive advantage and value. Effective IC management can reduce earnings management tendencies by ensuring efficient resource utilization.

Previous research shows mixed results regarding the impact of IC on earnings management. In addition, most studies focus on specific types of firms without considering how the influence of IC varies across different stages of the firm's life cycle. A firm's life cycle can be described as the stages a firm goes through from its inception to its peak stability and potential decline. According to life cycle theory, each stage of maturity and maturity requires different strategies, structures, and decision-making methods to achieve firm goals (Miller & Friesen, 1980). Xu et al. (2022) also argue that companies have different characteristics according to the life cycle stages they are experiencing.

This study aims to explore the effect of IC components on earnings management, considering the different stages of the company's life cycle in manufacturing companies listed on the Indonesia Stock Exchange from 2020 to 2023. By examining the role of IC in various life cycle stages, this study seeks to determine the effect of IC components on earnings management. to provide a comprehensive understanding of how

effective IC management can minimize earnings management practices and support sustainable corporate growth.

Literature review

Agency theory

The agency theory is explained by Jensen & Meckling (1976) as a contract entered into by two or more parties in which the principal (owner) appoints another person as the agent (manager) to manage work or services on behalf of the principal and delegates responsibility for decision-making to the agent. However, in agency theory, there are opinions and assumptions that the two parties involved have different interests. According to Irawan & Apriwenni (2021), in carrying out their responsibilities, managers also have personal needs outside of their responsibilities as company managers, such as personal psychological and economic needs that must also be met. This can trigger managers to engage in earnings management.

Resource-based theory

The term Resource-based Theory (RBT) was first proposed by Penrose (1959). It is an influential approach in strategic management aimed at effective and efficient resource management for gaining a long-term competitive advantage. Chandra and Augustine (2019) noted that companies compete by producing unique and valuable outputs for society and managing resources in line with their capabilities. The optimal use of uniquely characterized resources can also provide a sustainable competitive advantage (Nothnagel, 2008). To assess whether a company's resources can yield a sustainable competitive advantage, it must consider four characteristics of the VRIO framework: value, rareness, imperfect imitability, and organization.

Intellectual capital

The term "intellectual capital" was developed by John Kenneth Galbraith in 1969. Hoang et al. (2020) stated that intellectual capital is an

intangible asset that can increase a company's wealth. Based on existing literature, intellectual capital is an intangible asset that acts as intellectual material capable of increasing company value through competitive advantage and the welfare of company owners. Galdipour et al. (2014) argue that companies can create wealth and increase value by exchanging intellectual capital and tangible assets. Generally, intellectual capital is grouped into three main components: human capital, structural capital, and relational capital (Bontis, 1998; Dzinkowski, 2000).

1. Human Capital

   Pulic (1998) argues that human capital is defined as human resources that possess intellectual abilities, are capable of innovation and creativity, and include implicit knowledge, skills, and attitudes. The combination of these three elements can solve the problems faced by the company through the creativity and innovation of its employees.

2. Structural Capital

   The structural capital component includes the organization's ability to facilitate employees by providing infrastructure that supports their needs, thereby increasing work productivity both directly and indirectly (Edvinsson & Sullivan, 1996).

3. Relational Capital

   The relational capital component can be defined as the efforts made by the company to maintain good relationships with stakeholders. These relationships can provide important information that the company can utilize (Bontis, 2002).

Intellectual capital is a positive factor expected to increase company value. If intellectual capital is managed efficiently and optimally, the company's performance will also improve, reducing the need for managers to manage earnings to meet company targets. This is supported by research from Mojtahedi (2013), Nuryaman et al. (2019), Kalbuana et al. (2020), Hapsari et al. (2022), and Ardiansyah & Sadikin (2023), which state that intellectual capital can reduce earnings management actions taken by managers. Thus, the following research hypothesis was formed:

H_{1a}: HCE negatively affects earnings management practices
H_{1b}: SCE negatively affects earnings management practices
H_{1c}: RCE negatively affects earnings management practices
H_{1d}: CEE negatively affects earnings management practices

Earnings management

According to Healy & Wahlen (1999), earnings management occurs when managers subjectively adjust accounting numbers using their personal judgment in financial statements, thereby intervening in the preparation of transactions to provide information that can mislead stakeholders regarding company performance during a period. According to Rohmaniyah et al. (2018), changing the accrual-related sections in the financial statements is one way for managers to control their profits. This action is taken because the accrual sections do not require physical cash evidence, allowing managers who record and prepare financial statements according to their wishes to alter numbers by selecting different accounting methods.

Firm life cycle

The business life cycle theory was proposed by Adizes (1979). This theory explains that the business life cycle is similar to biological growth in living things, where business development should go through a process of introduction to decline. However, it should be understood that each company has a different strategy. Each stage the company goes through has different strategies, structures, and decision-making methods to achieve its goals (Miller & Friesen, 1980). This is also explained by Xu et al. (2022), who state that companies usually have different characteristics according to the life cycle stages they are experiencing. Thus, the following research hypothesis was formed:

H_{2a}: In each company's life cycle, the HCE negatively affects earnings management practices with different degrees of influence

H₂ᵦ: In each company's life cycle, the SCE negatively affects earnings management practices with different degrees of influence
H₂ᵢ: In each company's life cycle, the RCE negatively affects earnings management practices with different degrees of influence
H₂ᵈ: In each company's life cycle, the CEE negatively affects earnings management practices with different degrees of influence
H₃: HCE, SCE, RCE, and CEE affect earnings management practices in each company's life cycle.

Method, data, and analysis

The objects of this study are components of intellectual capital—human capital efficiency, structural capital efficiency, relational capital efficiency, and capital employed efficiency—as well as earnings management. The subjects of the study are manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. This research employs a quantitative approach, and data was collected through documentation techniques from audited financial reports available on the company's website, the IDX website, and other sources. Additionally, literature review methods are used to gather information from books, journals, articles, and other relevant resources to assess the extent of intellectual capital and earnings management in these companies.

Population and sample

This in-depth and comprehensive study employed a robust probability sampling approach, specifically utilizing a purposive sampling method to enhance the quality and depth of the research findings. The research population consists of 220 manufacturing companies publicly listed on the Indonesia Stock Exchange, covering a significant period from 2020 to 2023. This meticulous selection process ensures that the sample is not only diverse but also representative of the broader industry landscape, which is vital for the accuracy and validity of the findings obtained within the study.

Tabel 1. Screening procedures and results research sample

Criteria	Total
Manufacturing companies that have been and are still listed	221
did not publish financial reports regularly during 2020-2023	(23)
under special monitoring	(69)
experienced losses in 2020-2023	(52)
do not meet the FCL criteria	(19)
Number of companies meeting the criteria	58
Research period (2020-2023)	232
Outlier data	(20)
Total research sample	212

Independent variable

This research aims to assess each component of intellectual capital through the Modified Value Added Intellectual Coefficient (MVAIC). Developed by Ulum in 2014, MVAIC refines the traditional VAIC model by including the relational capital component in its calculations. The components of MVAIC—Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), Relational Capital Efficiency (RCE), and Capital Employed Efficiency (CEE)—help quantify a company's value-added contribution via intellectual capital. The value-added (VA) is calculated by summing Operating Profit (OP), Employee Costs (EC), Depreciation (D), and Amortization (A). HCE is determined by dividing Human Capital (HC) by VA; SCE is found by dividing VA by Structural Capital (SC); RCE is calculated by dividing VA by

Relational Capital (RC); and CEE is computed by dividing Capital Employed (CE) by VA.

In this context, OP refers to the company's operating income; EC encompasses employee-related expenditures, such as salaries and benefits; CEE measures the efficiency of capital employed; CE indicates the total capital employed—both physical and financial—excluding intangible assets; HCE evaluates the efficiency of human capital; HC reflects total employee expenditures; SCE assesses the efficiency of structural capital, calculated as VA minus HC; RCE gauges relational capital efficiency; and RC pertains to marketing costs. The extent of each of these factors contributes to overall organizational performance.

Dependent variable

To effectively measure earnings management, the authors will meticulously calculate the value of discretionary accruals (DACC) employing the sophisticated model established by Dechow et al. (1995), known as the modified Jones model. Discretionary accruals, which are a crucial aspect of financial reporting, emerge from the specific choices of accounting policies made by corporate managers with the intention of presenting a favorable financial position (Sanjaya, 2008, in Hapsari et al., 2022). These choices can significantly influence the perceived financial health of a corporation and provide insights into the managerial attitude toward financial transparency and compliance.

Table 2. Discretionary accruals formula

Description	Equation
Total Accruals (TAC)	$TAC = NI\_it - CFO\_it$
Normalized TAC	$TAC\_it / TA\_(it-1) = \beta\_1 (1 / TA\_(it-1)) + \beta\_2 (\Delta REV\_it / TA\_(it-1)) + \beta\_3 (PPE\_it / TA\_(it-1)) + \varepsilon$
Non-Discretionary Accruals (NDA)	$NDA\_it = \beta\_1 (1 / TA\_(it-1)) + \beta\_2 ((\Delta REV\_it / TA\_(it-1)) - (\Delta REC\_it / TA\_(it-1))) + \beta\_3 (PPE\_it / TA\_(it-1)) + \varepsilon$
Discretionary Accruals (DA)	$DA\_it = (TAC\_it / TA\_(it-1)) - NDA\_it$

In this context, NI refers to net income before tax, which indicates the extent of a company's profitability prior to tax deductions. CFO stands for operating cash flow, representing the extent of cash generated from regular business activities, which is crucial for assessing financial health. TA denotes total assets, encompassing the overall value of everything a company possesses. The β symbol represents the coefficient, a statistical measure demonstrating the extent of the relationship between various variables in the analysis. ΔREV signifies the change in revenue, illustrating the extent to which sales have fluctuated over time, which is vital for evaluating growth. ΔREC indicates the change in receivables, measuring the extent of money customers owe the company, which is essential for managing cash flow. PPE refers to property, plant, and equipment, which includes the long-term assets a company utilizes for operations. Lastly, ϵ is the error term, signifying the extent of the

difference between what was observed and what was predicted in a statistical model, crucial for understanding the model's accuracy.

Control variable

In this comprehensive study, the size of the firm was strategically employed as a crucial control variable to meticulously assess the impact of the independent variable on the dependent variable. This thoughtful approach ensures that the research findings remain robust and are not undermined by extraneous factors that lie outside the scope of this investigation.

The firm size acts as a significant indicator of a company's scale, intimately reflecting its overall operational magnitude, encompassing crucial aspects such as the number of employees, the breadth of its revenue-generating capabilities, and its market presence. By incorporating firm size into the

analysis, we facilitate a more profound and nuanced understanding of the intricate dynamics at play within the parameters of this study, thereby enriching the interpretation of the results.

Classification of firm life cycle

To thoroughly analyze the impact of various components of intellectual capital on earnings management throughout different phases of a company's life cycle, the sample will be categorized according to specific life cycle stages. This classification will employ the company average 5-year sales growth method, which was originally developed by Gup & Agrawal in 1996. The stages identified include growth, maturity, and decline. According to this established classification criteria, out of the total predetermined sample, there are 16 companies classified as being in the growth stage, 148 companies considered to be in the mature stage, and 32 companies found in the decline stage.

Tabel 3. Firm life cycle criteria based on cash flow

Stages	Average Sales Growth
Growth	10-50%
Mature	1-10%
Decline	<1%

Analysis Technique

This research utilizes the panel data regression analysis method to investigate the relationships among various factors affecting economic metrics. To effectively apply this analytical method, several essential stages must be followed: first, a descriptive statistical analysis is performed to summarize and characterize the main features of the dataset. Next, we select the most appropriate estimation model suited for the analysis, ensuring it aligns with the characteristics of the data. Following this, classical assumption testing is conducted to verify the underlying assumptions of the regression model are satisfied. Finally, hypothesis testing is executed to evaluate the validity of the proposed hypotheses regarding the relationships between variables. For a clearer understanding of the framework applied in this research, the following panel data regression equation model is utilized:

$$EM = \beta_1 \, HCE\_it + \beta_2 \, SCE\_it + \beta_3 \, RCE\_it + \beta_4 \, CEE\_it + \beta_5 \, FS\_it + \epsilon,$$

where EM represents the dependent variable, and the other variables (HCE, SCE, RCE, CEE, FS) correspond to independent factors influencing the economic outcomes, while ϵ denotes the error term that accounts for variability not explained by the model.

Results and Discussion

Based on the stages of the company's life cycle, it can be concluded that the average discretionary accruals have been trending upward from the growth stage to the mature stage and down in the decline stage. Among the three life cycle stages, the growth and mature stages tend to exhibit moderate earnings management by increasing reported earnings. Meanwhile, at the decline stage, the company engages in low earnings management by slightly increasing its reported profit.

Based on the stages of a company's life cycle, the average human capital efficiency trended upwards from growth to maturity and then downwards from maturity to decline. This means that the company was not efficient enough in managing its employees in the growth and decline stages compared to the mature stage. Then, among the three company life cycles, the mature stage had the most significant average value, which shows that mature companies can utilize their employees well to create added value.

Based on the stages of the company's life cycle, the average structural capital efficiency trend upwards from growth to maturity and downwards from maturity to decline. This

means that a company in the growth and decline stages can not allocate its profits to this capital because the revenue is insignificant. However, when the company has entered the mature stage,

it can allocate some of the added value to structural capital.

Table 4. Descriptive statistics analysis

Variables	Model	Mean	Stdev	Min	Max
Earnings management	*Full Sample*	0.0319	0.0595	-0.1270	0.0186
	Growth	0.0335	0.0556	-0.0903	0.1861
	Mature	0.0361	0.0587	-0.1270	0.1815
	Decline	0.0157	0.0645	-0.1198	0.1817
Human Capital Efficiency	*Full Sample*	2.8059	1.6229	0.5565	12.8657
	Growth	2.4942	0.8712	0.6715	4.6738
	Mature	3.1868	2.0190	0.5565	12.8657
	Decline	2.2775	0.7078	1.2130	4.3713
Structural Capital Efficiency	*Full Sample*	0.5553	0.2106	-0.7969	0.9223
	Growth	0.5335	0.2182	-0.4891	0.7860
	Mature	0.5883	0.2153	-0.7969	0.9223
	Decline	0.5212	0.1438	0.1757	0.7712
Relational Capital Efficiency	*Full Sample*	0.1085	0.1542	0.0001	0.9089
	Growth	0.0905	0.1616	0.0001	0.9089
	Mature	0.1222	0.1555	0.0017	0.6046
	Decline	0.1094	0.1398	0.0002	0.4168
Capital Employed Efficiency	*Full Sample*	0.2267	0.1289	0.0152	0.6897
	Growth	0.1986	0.1169	0.0384	0.6881
	Mature	0.2513	0.1399	0.0152	0.6897
	Decline	0.1864	0.0939	0.0480	0.4379

As a company progresses through its life cycle, the average efficiency of relational capital demonstrates a notable upward trend from the growth stage to the mature stage. This upward trajectory suggests that mature companies possess the capacity to allocate significantly more resources toward relational capital compared to their counterparts in the growth and decline stages. However, once the company transitions from the mature phase to the decline stage, this efficiency begins to diminish, indicating a reduced ability to invest in relational capital during this period. Thus, it becomes clear that mature companies enjoy a strategic advantage in utilizing relational capital, which can enhance their overall performance and sustainability.

In examining the stages of a company's life cycle, a notable pattern emerges regarding the

efficiency of capital employed. During the growth stage, companies typically experience an upward trend in efficiency, reflecting their ability to effectively utilize invested resources to stimulate expansion. This positive trajectory continues into the mature stage, where businesses maximize the value generated from their investments in both physical assets and financial capital. In contrast, as companies enter the decline stage, this efficiency begins to wane, signaling a downturn in the value they produce from their investments.

Determination of the estimation model

When performing panel data regression analysis, it is essential to evaluate the optimal model estimation using the Chow test, Hausman test, and Lagrange multiplier test. The criteria

for the Chow test can be assessed through the cross-section probability value F. If the resulting probability value is below 0.05, the decision is to use the fixed effect model. Conversely, if it exceeds 0.05, the common effect model should be applied. It has been determined that the full

sample, along with growth and mature stages, will utilize a fixed effect model; therefore, the Hausman test is required, while the decline stages will employ a common effect model, necessitating the Lagrange multiplier test.

Table 5. Result of Chow Test

Model	Cross-Section F	Prob.	Decision
Full	2,559	0,000	FEM
Growth	2.450	0.011	FEM
Mature	3.038	0.0001	FEM
Decline	1.530	0.2173	CEM

The Hausman test is a crucial statistical procedure used to determine the most appropriate model for analyzing data in cross-sectional studies. Specifically, it assesses whether to use a fixed effect model or a random effect model based on the probability value obtained from the test. If this probability value is less than 0.05, it indicates a significant difference that supports the use of the fixed effect model. Conversely, if the

probability value exceeds 0.05, the random effect model is deemed more suitable. In our analysis, we have concluded that for the full sample and during the mature stage of data collection, the fixed effect model is the appropriate choice. In contrast, during the growth stage, we opted for the random effect model, reflecting the differences in data characteristics across various stages of analysis.

Tabel 6. Result of Hausman Test

Model	χ^2	Prob.	Decision
Full	43.593	0.000	FEM
Growth	3.795	0.580	REM
Mature	37.033	0.000	FEM

The Lagrange Multiplier test criteria can be evaluated using the Breusch-Pagan probability. If the value is below 0.05, the random effects model is used, indicating unobserved individual effects. Conversely, a value above 0.05 suggests the common effects model, where unobserved differences are less significant. In our analysis, the common effect model is suitable during the

data's decline stage, while the random effect model better accounts for unobserved variations in the growth stage. The review shows the fixed effect model is most effective for the complete sample and mature stages, whereas the random effect model is preferred for growth, and the common effect model applies during the decline stage.

Tabel 7. Result of Lagrange Multiplier

Model	χ^2	Prob.	Decision
Growth	5.061	0.024	REM
Decline	0.650	-0.420	CEM

Classical assumption test

The analysis examines models with common and fixed effects, focusing on multicollinearity and heteroscedasticity. Results show all correlation values are below 0.9, indicating a lack of multicollinearity symptoms among the independent variables and reinforcing the validity of the findings. Each independent variable contributes uniquely to the model's explanatory power without undue influence from others.

Tabel 8. Result of multicolinearity

		HCE	SCE	RCE	CEE
Full Sample	HCE	1.0000	0.2503	-0.0677	0.0316
	SCE	0.2503	1.0000	0.1778	0.1787
	RCE	-0.0677	0.1778	1.0000	0.3498
	CEE	0.0316	0.1787	0.3498	1.0000
Mature	HCE	1.0000	0.4073	-0.0058	0.0684
	SCE	0.4073	1.0000	0.1870	0.0540
	RCE	-0.0058	0.1870	1.0000	0.2933
	CEE	0.0684	0.0540	0.2933	1.0000
Decline	HCE	1.0000	0.0472	-0.3209	-0.0817
	SCE	0.0472	1.0000	0.1595	0.2223
	RCE	-0.3209	0.1595	1.0000	0.5290
	CEE	-0.0817	0.2223	0.5290	1.0000

In the analysis conducted using the Glejser test, the results for heteroscedasticity from each statistical model indicate that the probability value associated with each variable exceeds 0.05. This suggests the absence of heteroscedasticity symptoms, reinforcing the validity of the model's assumptions regarding the uniformity of error variances across observations.

Tabel 9. Result of Heteroscedasticity

	Variable	Coef.	Std. Error	t-Stat	Prob.
Full Sample	C	0.4733	0.3376	1.4021	0.1629
	HCE	0.0014	0.002	0.8767	0.3820
	SCE	0.0029	0.0119	0.2449	0.8069
	RCE	-0.0170	0.0225	-0.7570	0.4502
	CEE	-0.0357	0.0229	-1.5605	0.1207
Mature	C	0.0746	0.0840	0.8880	0.3772
	HCE	-0.0001	0.0005	-0.2154	0.8300
	SCE	0.0067	0.0040	1.6622	0.1004
	RCE	-0.0028	0.0096	-0.2867	0.7751
	CEE	0.0746	0.0840	0.8880	0.3772
Decline	C	0.1578	0.1081	1.4592	0.1565
	HCE	-0.0014	0.0026	-0.5488	0.5878
	SCE	0.0410	0.0449	0.9128	0.3697
	RCE	0.0018	0.0374	0.0474	0.9626
	CEE	-0.0885	0.0623	-1.4204	0.1674

Regression analysis

Table 10 presents the regression results for the entire sample, indicating that higher HCE significantly diminishes earnings management. This conclusion is supported by a t-statistic of -2.07 and a significance level of 0.039, which is below 0.05. Consequently, hypothesis 1a is validated. These results align with the findings of Mojtahedi (2013), Hatane et al. (2019), Jaya & Agustia (2021), and Hapsari et al. (2022).

Increased employee efficiency contributes to heightened professionalism and accrual methods, which collectively reduce earnings management and enhance earnings quality. Additionally, substantial employee costs and company profits incentivize employees through bonuses and rewards upon achieving operational goals, thereby safeguarding employee interests and lessening earnings management (Mojtahedi 2013).

Table 10. Regression Result for All Model

Regression Models	Variables	Coefficient	t-Statistics	Sig.
Full Sample (FEM)	HCE	-0.007086	-2.072429	0.0399
	SCE	-0.066808	-2.757508	0.0065
	RCE	-0.108621	-2.366499	0.0192
	CEE	-0.182980	-3.926607	0.0001
Growth (REM)	HCE	0.009477	1.157763	0.2517
	SCE	-0.084443	-3.010572	0.0039
	RCE	-0.090866	-1.571506	0.1215
	CEE	-0.126420	-1.511475	0.1361
Mature (FEM)	HCE	-0.014246	-2.823714	0.0060
	SCE	-0.051570	-1.193630	0.2362
	RCE	-0.173232	-1.688976	0.0952
	CEE	-0.219221	-3.619347	0.0005
Decline (CEM)	HCE	-0.013223	-3.172651	0.0039
	SCE	0.011669	0.160384	0.8738
	RCE	-0.191526	-3.166100	0.0039
	CEE	-0.040696	-0.403328	0.6900
R^2	Full Sample = 0.527248		Mature = 0.534268	
	Growth = 0.340928		Decline = 0.436402	
F-Statistics	Full sample = 3.01 (0.00)		Mature = 2.83 (0.00)	
	Growth = 6.00 (0.00)		Decline = 4.03 (0.00)	

HCE negatively affects earnings management during mature and decline stages, but its impact in growth is negative yet insignificant. This stronger influence in mature and decline phases stems from changes in company focus, such as expansion goals and enhanced operations. Unlike growth-stage companies, mature firms experience better performance and cash flow, enabling increased investment in human capital under improved conditions. Thus, hypothesis 2a is rejected.

Table 10 shows that SCE has a notably adverse effect on earnings management, evidenced by a t-statistic of -2.76 and a significance level of 0.006, which is less than

0.05. Consequently, hypothesis 1b is validated. This finding aligns with the studies conducted by Zanjirdar & Chogha (2012), Mojtahedi (2013), Nuryaman et al. (2019), Hatane et al. (2019), and Hapsari et al. (2022). The expertise and creativity of employees enhance the advancement of structural capital, facilitating efficiency in processes, organizational structure, information dissemination, technology application, and corporate culture (Fanni & Fuad, 2019). A robust structural capital framework allows employees to work more effectively, aiding in the achievement of the company's operational objectives.

During the growth phase, SCE significantly harms earnings management because the company prioritizes rapid expansion and increased production capacity while also focusing on maintaining its operational state. Consequently, the development of structural capital becomes essential for meeting employee needs and enhancing business efficiency. In the mature stage, SCE has a negative effect, while during the decline phase, its impact is positive, but both effects are negligible. The efficiency of structural capital is primarily aimed at supporting the company's stability rather than curbing earnings management. Furthermore, inadequate structures and systems can impede control, resulting in potential earnings management. The purpose of managing structural capital is not to limit earnings management practices; hence, SCE does not correlate directly with these practices, despite the fact that structural capital can boost operational efficiency and productivity. Therefore, hypothesis 2b is dismissed.

Table 10 shows that RCE significantly negatively affects earnings management, with a t-statistic of -2.37 and a significance level of 0.019, which is less than 0.05. Therefore, hypothesis 1c is accepted. This result aligns with research conducted by Mojtahedi (2013) as well as Jaya and Agustia (2021). Customer satisfaction and loyalty towards company facilities lead to increased sales (Mojtahedi, 2013). Enhanced company performance is achieved through efficient RC, driven by effective sales and marketing strategies. As a result, operational goals are fulfilled, and managers are less inclined to engage in earnings management.

During the decline stage, RCE has a significantly detrimental effect on earnings management as companies focus more on their relationships with stakeholders. They prioritize stakeholder engagement to ensure sufficient funds for survival and future recovery, which makes them more cautious in reporting profits to maintain stakeholder trust. In the growth and maturity stages, RCE exhibits a negative yet insignificant impact due to the stability brought by customer loyalty, meaning that high RCE costs do not substantially affect earnings management. As noted by Xu et al. (2022),

companies strengthen their stakeholder relationships at these stages to build reputation and trust. Effective management of relationship capital enhances profitability through customer loyalty and satisfaction while decreasing earnings management to uphold integrity. Therefore, hypothesis 2c is rejected.

In Table 10, CEE demonstrates a significant negative impact on earnings management, indicated by a t-statistic of -3.93 and a probability of 0.00, which is less than 0.05. Consequently, hypothesis 1d is confirmed. This aligns with the findings of Khajavi et al. (2016), Hatane et al. (2019), Wellyana et al. (2020), and Hapsari et al. (2022). Effectively managing capital employed can enhance a company's long-term value and signify high earnings quality (Hatane et al., 2019). Both physical and financial capital are essential for manufacturing companies. Competent management improves operational effectiveness and efficiency, bolstering sales by optimizing both production quantity and quality. By meeting targets, the likelihood of managers resorting to earnings management diminishes.

CEE significantly impacts companies in mature stages negatively; however, its effect during growth and decline stages remains negative but not substantial. Companies in their mature phase enjoy stable income and typically concentrate on maintaining the quality of both physical and financial capital while optimizing performance. In this context, CEE plays a crucial role in preserving credibility and reputation. High company activity is often showcased through effective production that meets customer demand, stemming from efficient asset management. An increase in production and sales can lead to heightened profits for the company, providing no incentive for managers to manipulate earnings. Anggraini et al. (2019) suggest that companies with substantial capital employed demonstrate their capability to efficiently utilize physical capital, contributing to value creation. In contrast, companies in growth and decline stages prioritize revenue expansion and steadfastly maintain their industrial position over capital efficiency. Hence, the second hypothesis is rejected.

Conclusions

This study aims to determine how each component of intellectual capital—human capital efficiency, structural capital efficiency, relational capital efficiency, and capital employed efficiency—affects earnings management and how these effects vary across the introduction, growth, and mature stages. Based on the above analysis, it is concluded that each component of intellectual capital has a significantly negative impact on earnings management. However, the impact of each component varies across different stages. Human capital efficiency negatively impacts earnings management during the mature and decline stages, but it is not significant during the growth stage. Structural capital efficiency has a negative impact on earnings management during the growth stages. However, it has a negative impact during the mature stage and a positive impact during the decline stage. Relational capital efficiency significantly negatively impacts earnings management only during the decline stage. In contrast, it has an insignificantly negative impact during the growth stage and mature stage. Capital-employed efficiency negatively affects earnings management at a mature stage, but its impact is insignificant during growth and decline. Nevertheless, HCE, SCE, RCE, and CEE simultaneously affect earnings management for the full sample and the mature stage.

Research Limitation

In this comprehensive study, several noteworthy limitations have been identified. One significant limitation is the small sample distribution categorized by life cycle classification. This limitation restricts researchers from conducting tests across all critical stages of the life cycle, particularly the pivotal introduction stage, which is essential for understanding initial market impacts and dynamics. Additionally, the extraordinary circumstances during the years 2020-2021, predominantly influenced by the COVID-19 pandemic, may have skewed the outcomes of the regression analysis. The decision to exclude these pandemic-affected years presents yet another challenge, leading to an increasingly diminished pool of research samples. Consequently, this reduced sample size struggles to provide a robust representation of the broader context under study.

Suggestion

For future research, it is recommended to use alternative calculations to measure Intellectual Capital. The research can also be expanded by involving various industries beyond manufacturing and a more extended time range to observe the consistency of results or to determine if there are significant differences in the impact of intellectual capital on earnings management. Furthermore, involving all stages of the company life cycle with different criteria for determination is also advisable. Finally, the impact of intellectual capital components on real earnings management should be considered compared to accrual earnings management.

Reference

Adizes, I. (1979). Organizational Passages - Diagnosing and Treating Lifecycle Problems of Organizations. Organizational Dynamics, 8, 3–25

Anggraini, N., Sebrina, N,. & Afrianti, M. (2019). Pengaruh Intellectual Capital terhadap Kualitas Laba (Studi pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Tahun 2014-2017). Jurnal Eksplorasi Akuntansi, 1(1) Seri C, 369- 387

Ardiansyah, N. P., & Sadikin, D. S. (2023). Pengaruh Intellectual Capital dan Kinerja Keuangan terhadap Manajemen Laba pada Perusahaan Makanan dan Minuman yang Terdaftar di Bursa Efek Indonesia Periode 2018–2021. Jurnal Keuangan dan Perbankan, 20(1), 31–40. https://doi.org/10.35384/jkp.v20i1.500

Bontis, N. (2002). Managing Organizational Knowledge by Diagnosing Intellectual Capital: Framing and Advancing the State of the Field. In World Congress on Intellectual Capital Readings (pp. 13–56). Elsevier. https://doi.org/10.1016/b978-0-

7506-7475-1.50006-3

Bontis, N (1998). Intellectual capital: An Explanatory Study That Develops Measures and Models. Management Decision, 36(2), 63-76

Chandra, M., & Augustine, Y. (2019). Pengaruh Green Intellectual Capital Index dan Pengungkapan Keberlanjutan Terhadap Kinerja Keuangan dan Non Keuangan Perusahaan dengan Transparansi Sebagai Variabel Moderasi. Jurnal Magister Akuntansi Trisakti, 6(1), 45–70. https://doi.org/http://dx.doi.org/10.25105/jmat.v6i1.5066

Dechow, P.M., R.G. Sloan, and A.P. Sweeney. (1995) Detecting Earnings Management. The Accounting Review, 70 (2), 193–225

Dickinson, V. (2011). Cash flow patterns as a proxy for firm life cycle. Accounting Review, 86(6). https://doi.org/10.2308/accr-10130

Dzinkowski, R. (2000). The Measurement and Management of Intellectual Capital: An Introduction. https://www.researchgate.net/publication/247931350

Edvinsson, L., & Sullivan, P. (1996). Developing a Model for Managing Intellectual Capital. In European Management Journal, 4(4)

Fanni, A & Fuad. (2019). The Influence of Intellectual Capital on Firm Value with Earnings management as a Moderating Variable: A Study in Financial Service Companies Listed on Indonesia Stock Exchange (IDX). Jurnal Akuntansi dan Auditing, 16(2), 18-38

Galdipour, S., Rahimiyan, F., Etemad, A., & Panahi, H. (2014). Earnings Management and Intellectual Capital. Educ. Manage. Stud, 4(2), 425–428. www.science-line.com

Ghozali, A. W., Shafie, N. A., & Sanusi, Z. M. (2015). Earnings Management: An Analysis of Opportunistic Behaviour, Monitoring Mechanism and Financial Distress. Procedia Economics and Finance 28, 190–201. https://doi.org/10.1016/s2212-5671(15)01100-4

Gujarati, D. N., & Porter, D. C. (2009). Basic Econometrics (5th ed.). McGrawHill/Irwin

Gup, B. E., & Agrrawal, P. (1996). The Product Life Cycle: A Paradigm for Understanding Financial Management

Hapsari, I., Inayati, N. I., & Hartikasari, A. I. (2022). Pengaruh Intellectual Capital terhadap Earnings Management dengan Profitabilitas sebagai Variabel Moderasi. Edunomika – Vol. 06, No. 01, 06(01), 1–13

Hatane, S. E., Halim, N. I., Tarigan, J., (2019). Board Indicators, Managerial Ownership, Intellectual Capital and Earnings Quality in Consumer Goods of Indonesia and Malaysia. International Journal of Business Economics (IJBE), 1(1), 1-19

Healy, P.M., (1986). The Effect of Bonus Schemes on Accounting Decisions. J. Account. Econ. 7 (1-3), pp. 85–107

Hoang, H. T., Nguyen, H. T. H., Vu, N. H., Le, A. H., & Quach, H. H. (2020). Intellectual Capital and Firm Performance in Vietnam 20122016. International Journal of Learnings and Intellectual Capital, 17(1), 2746.

Irawan, S., & Apriwenni, P. (2021). Pengaruh Free Cash Flow, Financial Distress, dan Investment Opportunity Set Terhadap Manajemen Laba. Jurnal Akuntansi Bisnis, 14(1), 24–37. https://doi.org/10.30813/jab.v14i1.2458

Jaggi, B., Allini, A., Casciello, R., & Meucci, F. (2022). Firm life cycle stages and earnings management. In Review of Quantitative Finance and Accounting 59(3). Springer US. https://doi.org/10.1007/s11156-022-01069-5

Jaya, I. M. L. M., & Agustia, D. (2021). Impact of Intellectual Capital on Earnings Management: Financial Statement Fraud in Indonesia. Journal of Economics, Finance and Management Studies, 04(06), 724–733. https://doi.org/10.47191/jefms/v4-i6-07

Jensen, M., C., dan W. Meckling, (1976). Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure. Journal of Finance Economic 3, 305- 360

Kalbuana, N., Yulistian, N., & Budi, N. (2020). Pengaruh Intellectual Capital, Tata Kelola Perusahaan, dan Kualitas Audit terhadap Manajemen Laba. Jurnal Akuntansi Berkelanjutan Indonesia, 3(1)

Khajavi, S., Ghadirian-Arani, M. H., & Fattahi-Nafchi, H. (2016). Intellectual capital and earnings quality: A comprehensive investigation. International Journal of Learnings and Intellectual Capital, 13(4), 316–337. https://doi.org/10.1504/IJLIC.2016.079353

Mardiatmoko, G. (2020). Pentingnya Uji Asumsi Klasik Pada Analisis Regresi Linier Berganda. BAREKENG: Jurnal Ilmu Matematika Dan Terapan, 14(3), 333–342. https://doi.org/10.30598/barekengvol14iss3pp333-342

Miller, D., & Friesen, P. H. (1984). A longitudinal study of the corporate life cycle. In Management Science (Vol. 23, Issue 4, pp. 1161–1183). INFORMS. https://doi.org/10.1287/mnsc.30.10.1161

Mojtahedi, P. (2013). The Impact of Intellectual Capital on Earnings Quality: Evidence from Malaysian Firms. Australian Journal of Basic & Applied Sciences, 7(2), 535–540

Nuryaman. (2008). Pengaruh Konsentrasi Kepemilikan, Ukuran Perusahaan, dan Mekanisme Corporate Governance Terhadap Manajemen Laba. Simposium Nasional Akuntansi XI. Pontianak

Nothnagel. (2008). Empirical research within resource-based theory: A meta-analysis of the central propositions. Springer.

Penrose E. (1959) The theory of firm. New York. Wiley.

Pulic, A. (1998). Measuring the Performance of Intellectual Potential in Knowledge Economy. www.vaic-on.net

Rohmaniyah, A., dan Khanifah, K. (2018). "Analisis Manajemen Laba pada Laporan Keuangan Perbankan Syariah)". Jurnal Ekonomi dan Bisnis Vol. 13 No. 1

Sarwono. (2016). Prosedur-Prosedur Analisis Populer Aplikasi Riset dan Tesis dengan EViews. Gava Media

Sekaran, U., & Bougie, R. (2016). Research method for business: a skill-building approach (7th ed.). Wiley.

Sugiyono. (2023). Metode Penelitian Kuantitatif, Kualitatif, dan R&D (Sutopo (ed.); 2nd ed., Vol. 2). Alfabeta Bandung.

Xu, J., Haris, M., & Liu, F. (2022). Intellectual capital efficiency and firms' financial performance based on business life cycle. Journal of Intellectual Capital, 24(3), 653–682. https://doi.org/10.1108/JIC-12-2020-0383

Wellyana, F. T., & Sulistiawan, D. (2021). Pengaruh Intellectual Capital Terhadap Kualitas Laba Pada Emiten Bei. Jurnal Akuntansi, 15(2), 44–53. https://doi.org/10.37058/jak.v15i2.1641

Zanjirdar, M., & Chogha, M. (2012). Evaluation of Relationship between the Intellectual Capital and Earnings Quality Indexes in Emerging Economics: Case Study of Iran Financial Market. African Journal of Business Management, 6, 10312-10319