The 2nd International Students Conference on Economics and Business Excellence (ISCEBE) 2025
e-ISSN: 3090-4811
Vol. 2 No.1/BM-ISCEBE (2025)

THE INFLUENCE OF INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE ON EARNINGS MANAGEMENT WITH FIRM SIZE AS A MODERATING VARIABLE (A CASE STUDY AT PT. BANK MANDIRI (PERSERO) TBK. FOR THE PERIOD 2019-2023)

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Abstract

This study investigates earnings management practices at PT Bank Mandiri (Persero) Tbk. from 2019 to 2023 by examining the impact of intellectual capital and financial performance, moderated by firm size. The objective of this research is to investigate the impact of intellectual capital and financial performance on earnings management practices, as well as assess whether firm size directly impacts earnings management or moderates these relationships. Using a descriptive quantitative approach with a case study design, the analysis was conducted through SPSS software employing Moderated Regression Analysis (MRA). The results demonstrate that both intellectual capital and financial performance significantly affect earnings management. However, firm size does not have a direct effect; instead, it serves functioning as a moderator that diminishes the influence of intellectual capital and financial performance on earnings management. These findings suggest that larger firms may have more established governance mechanisms, which limit the extent of earnings manipulation driven by internal corporate factors.

Keywords: Intellectual Capital, Financial Performance, Earnings Management, Firm Size.

Introduction

In the era of globalization and increasingly complex economic dynamics, the banking sector is required to manage resources efficiently in order to maintain a competitive advantage. In the context of Indonesia, the banking sector holds a pivotal function in driving national economic development. PT Bank Mandiri (Persero) Tbk, As a major player among state-owned banks, recorded the highest total assets among other banks in 2023, amounting to IDR 2,174.21 trillion. In addition, Bank Mandiri received global recognition as the World's Best Bank by Forbes, further solidifying its position as a leading national financial institution.

The increase in Bank Mandiri's assets and performance is attributable to the implementation of efficiency strategies and digital transformation, which involves enhancing intellectual capital utilization and improving financial performance. Although various regulations have been established, earnings management remains a significant concern, especially when examined through agency theory, which emphasizes the potential divergence of interests between managers and shareholders. While earnings management is often conducted within legal boundaries, such practices have the potential to distort financial information, ultimately misleading investors and other key stakeholders.

This study investigates of intellectual capital and financial performance on earnings management, with firm size positioned as a moderating factor. Intellectual capital—which consists of human capital, structural capital, and relational capital—significantly contributes to enhancing organizational outcomes by promoting efficiency, innovation, and optimal use of knowledge-based resources. Financial performance, measured through indicators such as ROA (Return on Assets), NIM (Net Interest Margin), and CIR (Cost to Income Ratio), plays an important role in reflecting the success of corporate management. However, the relationship among these three variables in the context of earnings management in the Indonesian banking sector, particularly at Bank Mandiri, has not been extensively examined.

Considering the limitations of previous studies and the increasing need for financial transparency in the banking sector, this research aims to analyze the influence of intellectual capital and financial performance on earnings management, this study also aims to assess whether firm size moderates the aforementioned relationships.

Library Survey

Earning Management. Runturambi et al. (2017) suggest that earnings management refers to efforts made by companies to manipulate financial reports, often with the intent of presenting a more favorable financial condition. The measurement of earnings management serves as an indicator of whether or not such manipulative practices occur.

Intellectual Capital. Intellectual capital, while lacking physical form, plays a critical role in enhancing a company's performance and strengthening its competitive position. According to Stewart (1997, as cited in Usman & Mustafa, 2019), intellectual capital encompasses intellectual resources that have been systematized, documented, and utilized to generate value and economic benefit. Chandra (2021) Furthermore, Intellectual capital is generally classified into three main components: HC, SC and CC.

Financial performance. Financial performance serves as an indicator of a company's efficiency in utilizing its financial resources to achieve its strategic goals. It can be evaluated through indicators such as profitability, liquidity, solvency, and efficiency in operations (Brigham & Houston, 2018). In addition, Giri (2017), as cited by Loho et al. (2021), notes that financial statements serve as structured reports that provide a comprehensive overview of an entity's financial outcomes and standing.

Firm Size. Asiska & Handayani (2023) define firm size as a scale that classifies the magnitude of a company, based on total assets, log size, capital, market value, and other metrics. Essentially, firm size compares whether a company is large or small.

Properly managed intellectual capital can influence earnings management practices. Umah & Sunarto (2022) note that managers may manipulate earnings by applying specific accounting methods or adjusting transaction timing to influence reported profits in the short term. Companies with strong intellectual capital often have better internal controls and more transparent reporting, reducing the likelihood of earnings manipulation. Conversely, companies with weak intellectual capital may lack the innovation and information systems needed to prevent such practices (Rahmawati & Widyaningsih, 2022; Sari & Gunawan, 2023).

Earnings management is a strategy used to shape stakeholders' perceptions through financial reports. Anggraeni & Sulhan (2020) found that good financial performance reduces the need for earnings manipulation, as firms with stable profits have less pressure to distort reports. In contrast, weaker financial performance may increase the tendency to engage in earnings management to maintain a positive image.

Firm size plays a role in shaping earnings management behavior. According to Wati et al. (2018), larger organizations generally possess more robust internal control systems and higher levels of transparency, which tend to limit the likelihood of engaging in aggressive earnings manipulation. In contrast, smaller firms are often subject to greater external pressures, making them more vulnerable to such practices.

Indrawaty and Mildawati (2018) argue that firm size functions as a moderator in the linkage between intellectual capital and earnings management. Larger firms with strong intellectual capital are typically more transparent and less inclined to manipulate earnings, while smaller firms may still be driven to engage in such activities due to environmental and operational pressures.

Additionally, studies by Anggraeni and Sulhan (2020), Indrawaty and Mildawati (2018), and Prasetya and Musdholifah (2020) indicate that firm size also moderates the connection between financial performance and earnings management. For large companies, strong financial results are generally associated with enhanced transparency and reduced motivation to manipulate earnings. However, for smaller firms, even with improved financial outcomes, persistent pressure to maintain financial stability may increase the likelihood of earnings management behavior.

Research Methodology

Types of Research

This study employs a descriptive quantitative design integrated with a case study approach. As an explanatory investigation, it aims to analyze and verify hypotheses related to the influence of intellectual capital and financial performance on earnings management, considering firm size as a moderating factor. The study centers on PT Bank Mandiri (Persero) Tbk during the 2019–2023 period, providing a comprehensive assessment of internal corporate dynamics within the Indonesian banking industry.

Data Source

This study utilizes secondary data sourced from the audited annual financial statements of PT Bank Mandiri (Persero) Tbk for the period 2019 to 2023. The data were obtained from the company's official website as well as relevant publications by Bank Indonesia and the Financial Services Authority (OJK). The variables under investigation include:

1. Intellectual capital is assessed through the Value Added Intellectual Coefficient (VAIC™) approach.
2. Financial performance, evaluated through indicators such as Return on Assets (ROA), Net Interest Margin (NIM), and Cost-to-Income Ratio (CIR).
3. Earnings management: measured using the discretionary accruals approach.
4. Firm size, determined based on total assets and the natural logarithm of total assets.

Data Analysis

The analytical method utilized in this research is Moderated Regression Analysis (MRA), which was performed using SPSS software. The analytical procedure comprises several stages, including descriptive statistical analysis, testing of classical assumptions—such as normality, multicollinearity, and heteroscedasticity—subsequently, the analysis proceeds with multiple linear regression, hypothesis testing through t-tests and F-tests, as well as an assessment of the coefficient of determination (R^2) to measure the model's ability to explain variance in the data. The primary aim of this procedure is to explore the moderating role of firm size in the relationship between intellectual capital and financial performance as they relate to earnings management

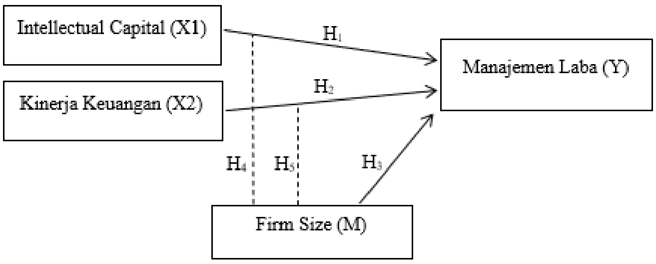
Research Limitations

This research is subject to several limitations. The analysis is restricted to PT Bank Mandiri (Persero) Tbk, which may constrain the applicability of the results to other firms or industry sectors. The selected observation period of five years (2019–2023) may not sufficiently capture long-term patterns or the effects of broader macroeconomic fluctuations. Furthermore, the study exclusively utilizes secondary data obtained from publicly available financial statements, which might not fully represent internal management practices or qualitative dimensions. Other non-financial factors—such as corporate governance quality and managerial behavior—that could potentially affect earnings management were not examined in this study.

Conceptual Framework

To better understand the dynamics between intellectual capital, financial performance, and earnings management, this study proposes a conceptual framework that integrates these key variables. Intellectual capital, as a strategic intangible asset, is expected to influence managerial decisions, particularly those related to financial reporting and earnings manipulation. Likewise, a firm's financial performance may motivate management to engage in earnings management to sustain market perceptions and investor trust. Acknowledging that firm-specific characteristics may shape these relationships, firm size is introduced as a moderating variable. The conceptual framework depicting these relationships is shown in Figure 1.

Figure 1
Research Paradigm Model



This research is structured around the conceptual model presented in Figure 1, which explores how intellectual capital and financial performance influence earnings management, with firm size serving as a moderating variableIt is expected that intellectual capital and financial performance have a direct influence on the degree to which earnings management is practiced. Additionally, the moderating role of firm size may amplify or diminish these relationships, depending on factors such as organizational scale, resource availability, and the effectiveness of internal control mechanisms.

Results and Discussions

Research Data Description

The data in this study were obtained from the annual reports of PT Bank Mandiri (Persero) Tbk over a five-year period from 2019 to 2023. The raw data were collected in Excel format and then analyzed using SPSS statistical software to test the hypotheses.

Intellectual capital (VAIC™) – Measured using the Value Added Intellectual Coefficient (VAIC™) method developed by Pulic (1998).

Table 1 Results of Intellectual Capital Calculation

Laporan Bank Mandiri Tahun	VACA	VAHU	STVA	VAIC
2019	0,3037	2,9122	0,6566	3,8726
2020	0,2208	1,9303	0,4819	2,6331
2021	0,2561	1,9919	0,4980	2,7459
2022	0,3051	2,4340	0,5891	3,3282
2023	0,3205	2,9553	0,6616	3,9374

Financial performance – Proxied by Return on Assets (ROA). Return on Assets (ROA) is a financial ratio which reflects the company's ability to generate profit from its total assets.

Table 2 Results of Financial Performance Calculation

Laporan Bank Mandiri Tahun	Laba Bersih Setelah Pajak	Total Aset	ROA
2019	Rp36.431.366.000.000	Rp1.411.244.042.000.000	0,0258
2020	Rp18.398.928.000.000	Rp1.541.964.567.000.000	0,0119
2021	Rp30.551.097.000.000	Rp1.725.611.128.000.000	0,0177
2022	Rp44.952.368.000.000	Rp1.992.544.687.000.000	0,0226
2023	Rp60.051.870.000.000	Rp2.174.219.449.000.000	0,0276

Earnings management (Dependent Variable) – Measured using Discretionary Accruals based on the Modified Jones Model (Dechow et al., 1995).

Table 3 Results of Earnings Management Calculation

Laporan Bank Mandiri Tahun	TAC/ALT-1	NDA	DAC (Y)
2019	0,0104	-0,1027	0,1130
2020	-0,0593	0,0155	-0,0748
2021	-0,0644	-0,0503	-0,0141
2022	-0,0323	-0,0739	0,0416
2023	0,0651	-0,0823	0,1474

Firm size (Moderating Variable) – Firm size, represented by the natural logarithm of total assets, is utilized to assess its moderating role in the relationship between the independent and dependent variables.

Table 4 Results of Firm Size Calculation

Laporan Bank Mandiri Tahun	Total Aset	Firm Size
2019	Rp1.411.244.042.000.000	34,88324801
2020	Rp1.541.964.567.000.000	34,97183369
2021	Rp1.725.611.128.000.000	35,08435766
2022	Rp1.992.544.687.000.000	35,22818895
2023	Rp2.174.219.449.000.000	35,31544612

Regression Analysis

This method projects the magnitude of change in the dependent variable when the independent variables are manipulated or experience systematic fluctuations in value.

Table 5 Results of Multiple Linear Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-.341	.061		-5.590	.031
	Kinerja Keuangan ROA	8.218	3.889	.578	2.113	.169
	Intellectual Capital	.063	.041	.427	1.560	.259

Sumber : Data Diolah menggunakan Software SPSS

Based on the regression results, the model is statistically significant ($F = 79.434$; $p = 0.012$) with strong predictive power ($R^2 = 0.988$). However, both independent variables are not significant: Intellectual Capital ($\beta = 0.427$; $p = 0.259$) and Financial Performance (ROA) ($\beta = 0.578$; $p = 0.169$). This may reflect a limited sample size ($n = 5$) or potential multicollinearity. The significant constant ($\beta = -0.341$; $p = 0.031$) suggests the presence of external factors influencing earnings management.

Moderated Regression Analysis (MRA)

Moderated Regression Analysis (MRA) is utilized to determine whether the presence of a moderating variable—namely firm size—affects the strength or direction of the relationship between the independent variable (intellectual capital) and the dependent variable (earnings management).

Table 6 Results of Moderated Regression Analysis (MRA) between Intellectual Capital and Earnings Management using Firm Size as a Moderator

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-1.959	2.199		-.891	.467
	X1M	.004	.001	.958	7.745	.016
	Firm Size	.044	.063	.086	.692	.560

a. Dependent Variable: Manajemen Laba

The findings from the Moderated Regression Analysis (MRA) indicate that the interaction between intellectual capital and firm size exerts a positive and statistically significant influence on earnings management. This is evidenced by a standardized beta coefficient of 0.958 and a significance value of $p = 0.016$ ($p < 0.05$). These results suggest that firm size moderates the relationship by amplifying the effect of intellectual capital on earnings management. Although the direct effect of firm size itself is not statistically significant ($\beta = 0.044$, $p = 0.560$), this outcome supports its function as a pure moderator, influencing the dependent variable only through interaction with the independent variable.

Table 7 Results of Moderated Regression Analysis (MRA) between Financial Performance (ROA) and Earnings Management using Firm Size as a Moderator

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.840	2.201		.382	.739
	X2M	.407	.050	1.011	8.174	.015
	Firm Size	-.031	.063	-.061	-.496	.669

a. Dependent Variable: Manajemen Laba

Similarly, the interaction term between financial performance (as measured by ROA) and firm size also shows a significant positive effect on earnings management ($\beta = 1.011$; $p = 0.015$, $p < 0.05$). This confirms that firm size plays a moderating role by strengthening the relationship between financial performance and earnings management. Despite the insignificant main effect of firm size ($\beta = -0.061$; $p = 0.660$), the result reinforces its role as a pure moderating variable, operating solely through its interaction with the primary independent variable.

Conclusion

The Influence of Intellectual Capital on Earnings Management Practices

The influence of intellectual capital on earnings management is statistically significant, as evidenced by VAIC metrics and consistent with prior empirical studies.

The Influence of Financial Performance on Earnings Management Practices

Financial performance, as measured by Return on Assets (ROA), significantly influences earnings management. An increase in ROA is associated with a greater tendency toward earnings manipulation.

The Influence of Firm Size on Earnings Management Practices

Firm size shows no statistically significant direct influence on earnings management, as evidenced by a p-value exceeding the 0.05 threshold.

The Role of Firm Size as a Moderator in the Link between Intellectual Capital and Earnings Management

Firm size has a significant moderating effect on the association between intellectual capital and earnings management, leading to a reduction in the strength of their direct linkage.

The Role of Firm Size as a Moderator in the Relationship between Financial Performance and Earnings Management

Moreover, firm size has a notable moderating influence on the relationship between financial performance and earnings management, reducing its impact on earnings manipulation practices.

Suggestion

Theoretical Recommendations

a. Development of Research Models and Theoretical Variables
   - Future studies are encouraged to include additional independent and moderating variables such as corporate governance, leverage, and liquidity to broaden the analytical scope and reduce potential multicollinearity.

- The inclusion of firm size as a moderator in the dual pathways—linking intellectual capital and financial performance to earnings management—triggered a high level of multicollinearity. Therefore, to maintain model stability and clarity of interpretation, it is recommended to apply the moderation effect to only one relationship.

b. Refinement of Analytical Models and Theoretical Indicators
- Since firm size did not show a strong moderating effect, future research should explore alternative moderators that are theoretically relevant, such as ownership structure, corporate governance quality, or industry-level regulation.
- The exceptionally high R^2 value suggests potential overfitting. Applying methods such as robust regression or cross-validation is recommended to enhance model validity and avoid estimation bias.
- The VAIC™ model used in this study only includes HC, SC and CC. Theoretical enrichment can be achieved by incorporating indicators like innovation culture, HR development, and technology investment to broaden the concept of intellectual capital in relation to earnings management.

Practical Recommendations

a. Implementation of Managerial Strategies and Corporate Oversight
- Financial and accounting professionals are advised not to rely solely on firm size when assessing the risk of earnings management but should also consider internal factors such as capital structure.
- The findings suggest that auditors and regulators should broaden their monitoring scope by including non-financial elements such as intellectual capital management and leadership quality.

b. Enhancing the Relevance of Financial Practices and Reporting
- It is recommended to include additional financial performance indicators such as NIM, LDR, and CAR for more industry-relevant analysis in the banking sector.
- Companies are encouraged to present more transparent and informative annual reports, particularly regarding their intellectual capital strategies and long-term growth plans.
- Researchers and practitioners are also advised to expand the data scope, both in terms of the number of firms and the time period, to better capture industry-wide trends and fluctuations.

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e-ISSN: 3090-4811
Vol. 2 No.1/BM-ISCEBE (2025)
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