

# Determinants of Intellectual Capital on Financial and Market Performance: The Moderating Role of Board Function

Daniel Ranbon Bungaran Marbun<sup>1\*</sup>, Maria Ulpah<sup>2</sup>

<sup>1,2</sup> Magister Manajemen, Fakultas Ekonomi dan Bisnis, Universitas Indonesia

<sup>1\*</sup> [danielranbon980610@gmail.com](mailto:danielranbon980610@gmail.com), <sup>2</sup> [mariaulpah@gmail.com](mailto:mariaulpah@gmail.com)

\*Corresponding Author

Submitted: May 29, 2024

Accepted: Juni 7, 2024

Published: October 1, 2024

## ABSTRACT

*This study aims to specifically examine the impact of intellectual capital on financial and market performance, considering the moderating role of board function. The study uses a sample of non-financial companies listed on the Indonesia Stock Exchange over the period 2017-2022. The approach employed in this research is panel regression to test the relationships between variables. The results indicate that intellectual capital has a significant effect on return on assets (ROA). Additionally, the role of the board function strengthens the impact of intellectual capital on return on assets as a moderating variable. The implications of this study suggest that company management should consider increasing investment in the development and utilization of intellectual capital. This can include employee training and development, effective knowledge management, and innovation development, which can ultimately enhance the overall value of the company.*

**Keywords:** Intellectual Capital, Agency Theory, Financial Performance, Market Performance, Board Function

## INTRODUCTION

Company performance refers to the degree to which a manager is successful in attaining the objectives of the organization by utilizing and performing resources that are scarce, valuable, difficult to replicate, and effectively managed (J. Barney, 1991; J. B. Barney & Clark, 2007). A company's ability to endure competition by establishing and sustaining a sustainable competitive advantage is evaluated in accordance with its performance (Henri, 2006; Yu et al., 2010). The relationship between company performance and competitive advantage is inseparable (Chan et al., 2007; Crook et al., 2008; Poorkavoos et al., 2016; C. L. Wang & Ahmed, 2007). The capabilities of a company are intricately linked to its competitive advantage (Wang et al., 2023). The capabilities of each organization will vary (Zhou et al., 2015). As an internal factor, capability necessitates the expansion of company assets (Hao & Song, 2016) and the maintenance of the company's competitiveness in a sustainable manner (Joyce & Slocum, 2012).

According to Schiavone et al. (2014), intellectual capital is the most valuable intangible asset of businesses. It is utilized to develop and describe the processes by which knowledge is produced, utilized, and employed to increase the success and value of an organization (Petty & Guthrie, 2000). Additionally, for organizations to attain success, the utilization of internal resources must take precedence (Soewarno & Tjahjadi, 2020). The assessment of intellectual capital is conducted using the VAIC methodology, which operates under the resource-based view that organizations employ both physical and intellectual capital as metrics of their overall effectiveness in generating value-added operations. Value Added Human Capital Coefficient (VAHU), Structural Capital Value Added (STVA), and Value Added Capital Coefficient (VACA) are the three components of VAIC (Pulic, 2000).

Internal competence can be evaluated using the Value Added Intellectual Coefficient (VAIC) model, a complex and exhaustive framework for determining the contribution of intellectual value

provided by a company's intellectual capital components. By applying the VAIC model, organizations can gain a comprehensive understanding of the degree to which their intellectual resources are utilized efficiently and effectively. This understanding can significantly influence the overall performance and competitive standing of the organization. The VAIC approach evaluates consumer capital, human capital, and structural capital as the three primary components of intellectual capital. Human capital encompasses the expertise, capabilities, and experience of personnel, in addition to the manner in which their input influences the overall functioning of an organization. Structural capital pertains to the technologies, processes, and protocols utilized by an organization to administer truth and data. In contrast, customer capital indicates the degree to which the positive rapport between an organization and its clientele impacts the overall performance and triumph of the business. As stated by Pulic (2000). As a result, the efficiency of intellectual capital can be computed and evaluated through the utilization of financial resources and opportunities for expansion (Tunyi et al., 2019).

The Value Added Intellectual Coefficient (VAIC) in Indonesian companies is manifested in several key aspects that reflect the contribution of intellectual capital to company performance. VAIC is used to measure the efficiency and effectiveness of intellectual capital, encompassing human capital, structural capital, and relational capital. In Indonesia, according to Soetanto & Liem (2019), VAIC is often manifested in the following ways; (1) Product and Service Innovation. Companies in Indonesia use intellectual capital to develop innovative new products and services, providing a competitive edge in the market. (2) Human Resource Development, Investment in employee training and development to enhance their skills and knowledge, thereby increasing productivity and operational efficiency; (3) Business Process Improvement. Implementation of advanced technologies and management systems to improve business and operational processes, ultimately enhancing quality and efficiency; (4) Enhanced Customer Relationships. Utilization of relational capital to build and maintain strong relationships with customers, which can increase customer loyalty and satisfaction. According to the study by Soetanto & Liem (2019), the application of VAIC in Indonesia indicates that companies with high VAIC values tend to have better financial performance compared to companies with low VAIC values.

Prior studies have established that the worth and competencies of an organization are frequently determined by its intellectual capital (Berzkalne & Zelgalve, 2014; Huang & Huang, 2020). Intellectual capital positively influences business development in ways such as by expanding social networks and brand equity (Liu & Jiang, 2020). Moreover, intellectual capital bestows numerous advantageous outcomes upon organizations, including heightened levels of employee retention and job satisfaction (Longo & Mura, 2011); increased business innovation (Adesina, 2019; Ornek & Ayas, 2015); enhanced relevance of accounting information (Hayati & Putra, 2015); and improved cost-effectiveness (Barrena-Martínez et al., 2020). Intellectual capital serves not only as a catalyst and valuable asset in the generation of value and the long-term progress of an organization but also as a catalyst for innovation and a critical factor in enhancing profitability (Chowdhury et al., 2019; Schiavone et al., 2014).

An examination of the correlation between intellectual capital and business performance is the objective of this study. This study makes use of prior research (Tunyi et al., 2019) that examines the relationship between corporate governance and internal capabilities. The most recent study by Ronowah & Seetana (2023) develops two models: one in which corporate governance serves as the independent variable and capital structure acts as the moderating variable; the other in which capital structure functions as the independent variable and corporate governance acts as the moderating variable, with the identical dependent variable. more specifically, the performance of the organization. Nevertheless, the primary emphasis of this study is on intellectual capital in order to gauge internal capabilities. Furthermore, this research employs the board function as a moderating variable in order to assess governance. This study uses a sample comprising all non-financial companies listed on the Indonesia Stock Exchange from 2017 to 2022. The results of this research are expected to provide valuable insights and recommendations to help companies optimize their internal capabilities by effectively and efficiently utilizing their resources. This optimization is anticipated to lead to improved company performance, growth, and competitive advantage.

## STUDI LITERATUR

### Agency Theory

Normatively, the goal of corporate financial management is to increase the company's value, which is reflected in its stock price (Fama, 1970; Zhu et al., 2022). The maximization of shareholder wealth or prosperity is the definition of increasing company value (Adams, 1994). By understanding that each financial decision will have repercussions on subsequent financial decisions and, ultimately, the company's value, the objectives of a business can be realized via the prudent and suitable execution of financial management functions (Jensen & Meckling, 1976). Regarding corporate decision-making, the investment policy, the funding policy, and the dividend policy comprise the financial management function. Because these decisions are interdependent, the optimal combination of them will maximize the value of the company (Kim et al., 1998).

### Resource Based View

Barney (1991) proposed the resource-based perspective. This theory asserts that a company will gain a competitive advantage if it meets four criteria, specifically (Farooque et al., 2023), it must satisfy the following four conditions: 1.) It must possess extremely valuable corporate resources (valuable) 2.) Should these resources contribute to the advancement of the organization, they have the potential to serve as a competitive edge. 3.) Uncommon resources. If these resources remain unowned by competitors in the present or future, they have the potential to serve as a competitive advantage. It is possible to incorporate the development of scarce resources into a company's mission.

### Intellectual Capital

As stated by Zurnali (2010), intellectual capital is related to the resources and intangible assets of an organization. According to Hsiung et al. (2023), intellectual capital involves a combination of various intangible capitals, such as market, intellectual property, human resources, and the infrastructure used in company operations. Therefore, intellectual stock is a form of intangible capital within an organization, but it heavily depends on the understanding and knowledge of the workers. Intellectual capital consists of intangible assets such as information, processes, patterns, and innovative capabilities that are inaccessible to cooperative networks and member companies. Intellectual capital is used to produce value-added assets that provide competitive advantage. According to Appuhami (2007), increasing the added value of intellectual capital results in more efficient use of company capital

### Hypothesis Development

#### The Influence of Intellectual Capital on Tobin's Q

The sustainability of a company's performance is significantly influenced by its competitive advantage, which is heavily reliant on intellectual capital (Bueno, E., Salmador, M. P., & Longo-Somoza, 2014; Chang, W. S., & Hsieh, 2011). The resource-based view approach posits that a company can attain a competitive advantage and superior performance by implementing strategic resources that are both pertinent and effectively optimized (Hsu, L. C., & Wang, 2012; Riahi-Belkaoui, 2003). The future market is utilized to calculate Tobin's Q, a metric for assessing the performance of a company (Syamsudin et al., 2017). This approach yields more comprehensive data as it encompasses every asset of the organization, including debt and share capital. According to research (Bramhandkar, A., Erickson, S., & Applebee, 2007), organizations with greater intellectual capital have a propensity for superior performance.

**H1: Intellectual Capital has a positive and significant effect on Tobin's Q.**

#### The Influence of Intellectual Capital on Return on Assets.

Intellectual capital, which is classified as a component of strategic resources, plays a significant role in fostering a competitive edge and showcasing enhanced organizational performance (Clarke, M., Seng, D., & Whiting, 2011; Marr et al., 2003; Salman, R. T., & Mahamad, 2012). Consequently, in order to attain peak performance, organizations must effectively identify, cultivate, and optimize the utilization of intellectual capital (Marr et al., 2003). Intellectual capital serves as an emblematic representation of the intangible assets possessed by an organization and plays a significant role in enhancing its operational effectiveness, thereby potentially influencing

market evaluation (Bozbura, 2004; Brennan, 2001; Petty & Guthrie, 2000).

**H2: Intellectual Capital has a positive and significant effect on Return on Assets.**

### **Moderation of Corporate Governance on the Influence of Intellectual Capital on Tobin's Q.**

The function of corporate governance is to ensure that the interests of shareholders and managers remain in equilibrium (Armstrong, C. S., Guay, W. R., & Weber, 2010; Holderness, 2003; Mehran, 1995; Shleifer, A., & Vishny, 1997). Organizations that adopt sound corporate governance practices are more likely to furnish exhaustive financial data (Beekes, W., & Brown, 2006) and to generate precise market value assessments, both of which facilitate investors' favorable evaluations and performance enhancement. organization (Black, B. S., Jang, H., & Kim, 2006). Corporate governance can moderate Intellectual Capital such that it has a positive and significant correlation with company performance as measured by Tobin's Q, according to a study (Kyereboah-coleman, 2007). This suggests that operational performance is positively impacted by the quality of corporate governance.

**H3: Corporate Governance moderates the influence of Intellectual Capital on Tobin's Q.**

### **Moderation of Corporate Governance on the Influence of Intellectual Capital on Return on Assets**

The significance of company growth for business proprietors, executives, and investors stems from the fact that it furnishes dependable forecasts of operational effectiveness. The company's assets and growth opportunities are primarily determined by sales revenue (Abughniem, M. S., Al Aishat, M. A. H., Hamdan, A., & Weshah, 2020). Companies can potentially leverage sales growth to gain further market advantages, thereby enhancing their overall performance (Brush, T. H., et al., 2000). According to a study (Kyereboah-coleman, 2007), corporate governance can moderate the correlation between Intellectual Capital and ROA-measured company performance in a positive and significant way. This finding suggests that the market value of the company is positively impacted by the quality of corporate governance.

**H4: Corporate Governance moderates the influence of Intellectual Capital on Return on Assets.**

## **METHODS**

This study uses a quantitative method. The panel data method is used in this study as an analysis technique. Panel data according to Gujarati & Porter (2009) is characterized by entity dimensions (cross-section) that can include countries, regions, companies, individuals, and other entities, as well as time dimensions (time series). The research object in this study is a sample of companies listed on the Indonesia Stock Exchange (IDX) in 2017-2022 that operate in the non-financial sector. In order to evaluate the research hypothesis and examine the moderating effect of board size and intellectual capital on company performance, this study employs a quantitative research methodology. The formula provided below illustrates the approach utilized to assess the performance of a company (Syamsudin et al., 2017).

$$Tobin'sQ = \frac{Nilai\ pasar\ ekuitas + Total\ Hutang}{Total\ Aset}$$

Equity market value equals price per share multiplied by number of outstanding shares. In addition, the computation of return on assets is a factor in determining stock investment strategies, as it signifies the organization's effectiveness in utilizing its resources to optimize earnings (Himmawan, 2018; Zhao et al., 2016).

$$ROA = \frac{Net\ Income}{Total\ Asset}$$

Concerning the utilization of the Value-Added Intellectual Coefficient (VAIC) method to quantify intellectual capital. The Value-Added Intellectual Coefficient (VACA), human capital efficiency (VAHU), and structural capital efficiency (STVA) are the three efficiency components that comprise the VACA (D'Amato, 2021; Probahudono et al., 2021; Soewarno & Tjahjadi, 2020;

Weqar et al., 2021). An increased VAIC value signifies a heightened level of efficiency within the organization. A higher level of efficiency and greater value creation are the outcomes of an increasing VAIC over time (Joshi et al., 2013).

The following steps are required to compute the Value Added Intellectual Coefficient (VAIC) model:

$$VAIC = VACA + VAHU + STVA$$

The following are the phases involved in determining capital employed efficiency (VACA):

$$VAIC = VACA + VAHU + STVA$$

Listed below are the phases involved in determining capital employed efficiency (VACA):

$$VA = OUT - IN$$

Description:

VA = Value Added

OUT = Revenue from all goods and services sold in the market.

IN = All company expenses, except employee costs

$$VACA = \frac{VA}{CE}$$

CE = Total Assets - Intangible assets.

Description:

VACA = Capital Employed Efficiency

VA = Value Added

CE = Capital Employee

The following are the phases involved in calculating human capital efficiency (VAHU):

$$VAHU = \frac{VA}{HC}$$

HC = employee salary and benefits

Description:

VAHU = Human Capital Efficiency

VA = Value Added

HC = Human Capital

The stages of calculating structural capital efficiency (STVA) are as follows:

$$STVA = \frac{SC}{VA}$$

SC = Value added (VA) - employee salary and benefits (HC)

Description:

STVA = Structural Capital Efficiency

SC = Structural Capital

VA = Value Added

Furthermore, the board function component consists of the points used obtained from Tanjung (2020) research consisting of the board function component, namely consisting of points for the board of directors, size of the board of directors, independent commissioners and size of the board of commissioners. After knowing the results using dummy variables, then the following calculations are carried out:

Governance Board Function = Board of Directors + Size of the Board of Directors + Independent Commissioners + Size of the Board of Commissioners/4

We use control variables in the form of company size, growth, liquidity. This research sample

includes non-financial companies listed on the Indonesia Stock Exchange (BEI) from 2017 to 2022. Using panel regression, the following research model is obtained:

$$\text{TOBIN'S } Q_{i,t} = \alpha + \beta_1 \text{IC}_{i,t} + \beta_2 \text{Growth}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \varepsilon_{i,t} \quad (3.1)$$

$$\text{ROA}_{i,t} = \alpha + \beta_1 \text{IC}_{i,t} + \beta_2 \text{Growth}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \varepsilon_{i,t} \quad (3.2)$$

Kemudian untuk model moderasi yang digunakan adalah sebagai berikut.

$$\text{TOBIN'S } Q_{i,t} = \alpha + \beta_2 \text{IC}_{i,t} * \text{TKP}_{i,t} + \beta_2 \text{Growth}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \varepsilon_{i,t} \quad (3.3)$$

$$\text{ROA}_{i,t} = \alpha + \beta_2 \text{IC}_{i,t} * \text{TKP}_{i,t} + \beta_2 \text{Growth}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LIQ}_{i,t} + \varepsilon_{i,t} \quad (3.4)$$

Information:

TOBIN'S  $Q_{i,t}$  = Company Performance in company I in year t

TKP = Corporate Governance

ROA = Return On Assets

IC = Intellectual capital

Growth = Company Growth

Size = Company Size

Liq = Liquidity

## RESULT

### Descriptive Statistics

| Variabel  | Obs.  | Mean      | Std Dev.  | Min.      | Max      |
|-----------|-------|-----------|-----------|-----------|----------|
| VAIC      | 3522  | 5058.132  | 24510.24  | -96341.55 | 156566.2 |
| ROA       | 4206  | 2.727565  | 14.07145  | -59.08    | 56.49    |
| TobinsQ   | 3450  | 1.423076  | 2.517532  | 0.046     | 17.713   |
| TKP       | 4716  | 0.6998516 | 0.2291762 | 0         | 1        |
| GROWTH    | 4,181 | 6.378017  | 48.60612  | -249.13   | 224.69   |
| SIZE      | 4,238 | 21.08425  | 1.9625    | 16.02963  | 25.39772 |
| LIQUIDITY | 3,757 | 1.598414  | 2.132702  | 0.04      | 14.2     |

Descriptive statistical data analysis was performed in this study to obtain a general description of the data utilized as the sample. The dependent variables utilized in this dissertation investigation are market performance as quantified by TobinsQ and financial performance as assessed by ROA. Following that, intellectual capital serves as the independent variable, while corporate governance acts as the moderating variable.

### Results of Panel Regression Model Estimation

As a preliminary step towards the Moderated Regression Analysis phase, a panel regression was conducted using the research model that was developed (Model (1) and Model (2) as the basis for the response. Testing the Chow Test, also referred to as the Redundant Fixed Effects Likelihood Ratio, is the initial step. The purpose of this experiment was to determine which of the two models, Pooled Least Squared (PLS), Common Effect Model (CEM), and Fixed Effect Model (FEM), to implement. Subsequently, the Breusch & Pagan Lagrangian Multiplier Test (LM Test) is employed to ascertain which of the Random Effect Model (REM) and Pooled Least Squares (PLS)/Common Effect Model (CEM) is superior. Testing the Hausman Test, which is also referred to as Correlated Random Effects, is the final step. The objective of this experiment was to determine which of the Fixed Effect Model (FEM) and the Random Effect Model (REM) to utilize. The outcomes of the Chow Test, LM Test, and Hausman Test utilized in this investigation are presented in the subsequent table.

**The outcomes of the panel regression models (1) and (2)**

| Variable                | Model 1 Tobins Q |           |           | Model 2 ROA      |           |           |
|-------------------------|------------------|-----------|-----------|------------------|-----------|-----------|
|                         | Model PLS/CEM    | Model FEM | Model REM | Model PLS/CEM    | Model FEM | Model REM |
| C                       | 2.090075         | 4.672225  | 2.865738  | -12.67606        | 3.938632  | -7.373378 |
| Prob. C                 | 0.000***         | 0.004***  | 0.000***  | 0.0000***        | 0.687     | 0.070**   |
| VAIC                    | -2.97            | 3.04      | 5.21      | .0000305         | .0000602  | .0000531  |
| Prob. VAIC              | 0.984            | 0.841     | 0.970     | 0.000***         | 0.000***  | 0.000***  |
| SIZE                    | -.040152         | -.1587559 | -.0710556 | .7552175         | -.008808  | .5152876  |
| Prob. SIZE              | 0.064*           | 0.035**   | 0.043**   | 0.0000***        | 0.985     | 0.007***  |
| Growth                  | .0004338         | .0004476  | .0003835  | .0073343         | .0037718  | .0046478  |
| Prob. Growth            | 0.625            | 0.508     | 0.558     | 0.132            | 0.362     | 0.243     |
| Liquidity               | -.0210719        | -.0373721 | -.0371246 | -.0843471        | -.3275358 | -.2347768 |
| Prob. Liquidity         | 0.288            | 0.127     | 0.068*    | 0.445            | 0.026**   | 0.049**   |
| Breusch & Pagan LM Test | 1373.63 (0.0000) |           |           | 1373.63 (0.0000) |           |           |
| Hausman Test            | 2.26 (0.5202)    |           |           | 2.26 (0.5202)    |           |           |

Note: \*\*\*\*, \*\*, \* indicate significance of coefficients at 1%, 5%, 10% level, respectively

Based on the results of the LM Test which shows a Chibar-Squared value of 1373.63 or with a probability value of less than p value <0.05 or 5%. This means that the best model between PLS/CEM and REM is the REM model. After that, the results of determining the best model are based on the Hausman Test where the Chi-squared value is 2.26 or the probability value is more than p value > 0.05 or 5%. So the best model between FEM and REM is the REM model.

1. In table 4.5, the Random Effect Model Regression Results (1) show the influence of the independent and control variables on Tobins'Q as follows:
2. The independent variable VAIC has an insignificant influence on Tobins'Q. The VAIC coefficient is 5.21 with a significance of 0.970.
3. The control variable Growth has an insignificant effect on Tobins'Q. The Growth coefficient is .0003835 with a significance of 0.558.
4. The control variable SIZE has a significant influence on Tobins'Q. The SIZE coefficient is -.0710556, with a significance (p-value) of 0.043.
5. The control variable Liquidity has an insignificant effect on Tobins'Q. The Liquidity coefficient is -.0371246, with a t-statistic of -1.089, and a significance (p-value) of 0.068.
6. In the Regression Results of the Random Effect Model Regression Model (2), the influence of independent and control variables on ROA is as follows:
7. The independent variable VAIC has a significant influence on ROA. The VAIC coefficient is .0000531 with a significance of 0.000.
8. The control variable Growth has an insignificant effect on ROA. The Growth coefficient is .0046478 with a significance of 0.243.
9. The control variable SIZE has a significant influence on ROA. The SIZE coefficient is .5152876, with a significance (p-value) of 0.007.
10. The control variable Liquidity has an insignificant effect on ROA. The Liquidity coefficient is -.2347768, with a t-statistic of -.459, and a significance (p-value) of 0.049.

**Estimation Results of the Moderated Regression Model**

In answering the model formed in this research, then entering the Moderated Regression Analysis stage, a moderated regression is carried out based on the model formed, namely

consisting of Model (3.3), Model (3.4).

**Random Effect Regression Results Moderation Model Model (3.3), Model (3.4).**

| Variable   | Tobins'Q    |          | ROA         |          |
|------------|-------------|----------|-------------|----------|
|            | Coefficient | Sig      | Coefficient | Sig.     |
| (Constant) | 2.873445    | 0.000*** | -9.372404   | 0.021**  |
| VAIC*TKP   | 1.30        | 0.746    | 9.07        | 0.000*** |
| Growth     | .0003834    | 0.558    | .0050641    | 0.205    |
| Size       | -.0714348   | 0.041**  | .6188047    | 0.001*** |
| Liquidity  | -.0371373   | 0.067*   | -.2290443   | 0.056**  |

Note: \*\*\*, \*\*, \* indicate the significance of coefficients at 1%, 5%, 10% level, respectively.

In the Regression Results of the Random Effect Model Regression Model (3.3), the influence of the Moderation and Control variables on Tobins'Q is as follows:

1. The independent variable VAIC\*TKP has an insignificant effect on Tobins'Q. The VAIC\*TKP coefficient is 1.30 with a significance of 0.746.
2. The control variable Growth has an insignificant effect on Tobins'Q. The Growth coefficient is .0003834 with a significance of 0.558.
3. The control variable SIZE has a significant influence on Tobins'Q. The SIZE coefficient is -.0714348, with a significance (p-value) of 0.041.
4. The control variable Liquidity has an insignificant effect on Tobins'Q. The Liquidity coefficient is -.0371373, with a significance (p-value) of 0.067.
5. In the Random Effect Regression Model Regression results (3.4) the influence of the Moderation and control variables on ROA is as follows:
6. The independent variable VAIC\*TKP has a significant influence on ROA. The VAIC\*TKP coefficient is 9.07 with a significance of 0.000.
7. The control variable Growth has an insignificant effect on ROA. The Growth coefficient is .0050641 with a significance of 0.205.
8. The control variable SIZE has a significant influence on ROA. The SIZE coefficient is .6188047, with a significance (p-value) of 0.001.
9. The control variable Liquidity has an insignificant effect on ROA. The Liquidity coefficient is -.2290443, with a significance (p-value) of

**DISCUSSION**

**The influence of intellectual capital on TobinsQ**

Intellectual capital exhibits a marginally significant and positive impact on market performance, as evidenced by a P-value of 0.988 > 0.05 and a coefficient of 5.21. The results of this investigation validate a previous study (Madyan & Fikir, 2019) that demonstrated the relationship between the market value of shares and a company's market performance; investors do not factor in the human resource component when determining an organization's comparative advantage for investment purposes. Consistent with the research conducted by (Dharni & Jameel, 2022), there exists a notable inverse correlation between market performance and structural capital in pharmaceutical sector firms listed on the Indian Stock Exchange. The study ascribes this phenomenon to a strategic shift among pharmaceutical sector firms, wherein they now rely on market performance as a surrogate for quantitative data rather than qualitative data. to engage in dialogue with investors and other stakeholders regarding the substantial increase in research and development intensity. Smriti et al. (2018) discovered an additional negative correlation between VAIC and market value of company performance, suggesting that investors continue to exhibit reluctance towards allocating capital towards human resources assets. The negative impact of VAIC suggests that investors neglect to



investigate and acknowledge the significance of human resources within an organization, which is a component of the broader objective of enhancing company value.

### **The influence of intellectual capital on ROA**

A positive and statistically significant relationship exists between intellectual capital and financial performance, as evidenced by the coefficient of 6,698 and the P-Value of  $0.004 < 0.05$ . This implies that an increase in the intellectual capital variable corresponds to a superior financial performance. Consistent with the findings of (Nadeem et al., 2018), this study examines the correlation between intellectual capital and business performance in South Africa, Brazil, Russia, India, and China. They discovered that there is a significant relationship between Intellectual Capital and firm performance (ROA), and that all constituent elements of IC (structural and human) influence firm performance positively and significantly, in addition to physical capital. Moreover, with regard to adoption in Indonesia, this study corroborates the conclusions drawn in (Soetanto & Liem, 2019), which indicate that IC positively and significantly impacts the performance of businesses. After accounting for company size and industry classification, structural capital efficiency and capital efficiency utilized have specifically contributed to the creation of corporate value. From 2010 to 2017, research (Soetanto & Liem, 2019) utilizes sampling data from 127 companies across 12 industries in Indonesia. Knowledge and intellectual capital investment has emerged as a critical investment strategy for generating sustainable competitive advantages that organizations can leverage to enhance their overall performance (Hamdan, 2018). Intellectual capital can furnish an organization with additional resources that it can utilize to its advantage and remain competitive (Dzenopoljac et al., 2017). Intellectual capital comprises resources and knowledge that, when utilized to their fullest potential, empower an organization to execute its strategic objectives with efficacy and efficiency. Consequently, this capital can contribute to the company's competitive advantage and generate additional value (Asiaei et al., 2018; Khalique et al., 2015; Soewarno & Tjahjadi, 2020). A substantial amount of intellectual capital signifies that the organization effectively generates value for the company, indicating that its management has effectively utilized and capitalised on the company's potential. Managers possess the capability to oversee employed capital, quantifying the additional value generated per unit of investment in the company's capital (Boujelbene, M. A., & Affes, 2013). This is achieved through the cultivation of positive relationships with suppliers, customers, governmental bodies, and neighboring communities, the development of human capital to enhance the competencies and potential of employees who hold significant influence in a competitive milieu, and the management of structural capital, which consists of knowledge embedded within organizational structures.

### **Corporate Governance moderates the influence of Intellectual Capital on TobinsQ**

The findings from model 4.3 indicate that there is no moderating effect of corporate governance on the relationship between intellectual capital and market performance when using the Pure Moderator type of moderation. This discovery is consistent with the research conducted by (Ronoowah & Seetana, 2023), which examined a sample of non-financial companies listed on the Mauritian Stock Exchange between 2009 and 2019. Their study revealed that there is no moderating effect of corporate governance on market performance (as measured by Tobins'Q) through capital structure. This is due to the fact that all stakeholders should contemplate the quality of the company's governance and financial decisions associated with the c-sector when deciding whether to invest in Mauritian non-financial companies. A lack of efficiency in the capital market gives rise to substantial speculation and insider trading, thereby engendering volatility and uncertainty in a company's market performance. Consequently, regulatory oversight becomes imperative to perpetually assess unethical practices within the capital market and ensure the provision of transparent reporting.

### **Corporate Governance moderates the influence of Intellectual Capital on ROA**

The findings from model 4.4 indicate that the presence of Corporate Governance moderates the positive correlation between intellectual capital and company performance in a manner consistent with the Pure Moderator type. The direction of the result is positive, suggesting that corporate governance and intellectual capital can interact to enhance the performance of a company. Intellectual capital is a critical knowledge-based asset that serves as a strategic asset for

organizations (Dzinkowski, 2005; Zerenler & Gozlu, 2008). In general, intellectual capital is regarded as an intangible asset that contributes to the expansion of a company's market share and increases its sustainable advantages by providing the required knowledge and resources (Lu et al., 2010). Additionally, it serves as a valuable metric for assessing the growth of a company. Good corporate governance enhances a company's capabilities through the adoption of cutting-edge technological infrastructure, the attraction of talented employees, and the maintenance of positive relationships with suppliers and other stakeholders. Organizational leaders are confronted with the task of optimizing the utilization of intellectual capital and integrating it into the company's overall resources in order to establish enduring competitive advantages in the execution of business operations (Abdul & Makki, 2014). It is anticipated that the corporate governance system will serve as a significant control mechanism for investors, thereby mitigating agency problems (Cerbioni & Parbonetti, 2007). This is achieved through an emphasis on the management of intellectual capital (Li et al., 2008). Corporate governance serves as a mechanism to attain optimal profitability, productivity, and sustainability (Agrawal & Cooper, 2017). In order to ensure the equitable distribution of shareholder wealth, corporate governance consists of the processes, structures, and institutions that govern the relationship between managers and employees within and around the organization (Wahid et al., 2013).

### CONCLUSION

From the research findings, the following can be deduced:

1. For the period 2017-2021, intellectual capital has no effect on Tobin's Q in non-financial companies listed on the Indonesia Stock Exchange.
2. From 2017 to 2021, the return on assets for non-financial companies listed on the Indonesia Stock Exchange is significantly impacted by intellectual capital.
3. For the period 2017-2021, corporate governance does not moderate the impact of intellectual capital on Tobin's Q in non-financial companies listed on the Indonesia Stock Exchange.
4. From 2017 to 2021, the impact of intellectual capital on return on assets in non-financial

Companies listed on the Indonesia Stock Exchange is moderated by corporate governance.

The ramifications

1. The development of a more comprehensive intellectual capital measurement should be considered. Components including VAHU, VACA, and STVA may have been utilized in this investigation.
2. This study examines the impact of intellectual capital on performance within the framework of governance in developing nations, enabling future research to draw comparisons with diverse corporate governance systems across the globe.
3. In the context of corporate governance, the impact of industrial differences on the relationship between intellectual capital and company performance can be evaluated in light of the findings of this study.

This study offers broad recommendations and implications based on its findings, contributing insights that are both theoretical and practical; (1) For Academics. Researchers may explore the development of more comprehensive measures for intellectual capital, potentially integrating various metrics such as VAHU, VACA, and STVA. Future studies could also investigate how intellectual capital affects company performance across diverse corporate governance frameworks and analyze industry-specific nuances in this relationship. (2) For Companies. It is advisable for corporate management to consider increasing investments in intellectual capital. This includes enhancing employee training, implementing effective knowledge management practices, and fostering innovation to bolster overall company value. Furthermore, managing risks associated with intellectual capital investments and aligning it strategically within corporate operations and regulations are crucial for sustained business growth. (3) For the Public and Investors. Investors and the public are encouraged to prioritize evaluating intellectual capital and corporate governance practices when assessing company performance. Understanding key financial indicators like profit margins and cash flows is essential for making informed investment decisions. (4) Ethics and Social Responsibility. Future research could explore integrating social ethics dimensions into assessments of intellectual capital and examining their impact on company

performance. Studying public perceptions and developing comprehensive indicators for ethical practices will deepen understanding of their influence on corporate success, including aspects related to environmental, social, and governance considerations (ESG).

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