

DOES INTELLECTUAL CAPITAL STRENGTHEN ENVIRONMENTAL DISCLOSURE ON FINANCIAL PERFORMANCE DURING COVID-19?

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ABSTRAK

Penelitian ini bertujuan untuk menguji peran moderasi Intellectual Capital (IC) terhadap pengaruh Environmental Disclosure (ED) terhadap Financial Performance (FP) pada sektor energi yang terdaftar di BEI periode tahun 2020 hingga 2022. Analisis menggunakan Ordinary Least Square (OLS). Hasil penelitian menemukan bahwa IC mampu memoderasi hubungan antara ED dan FP. Penelitian ini memberikan kontribusi terhadap teori RBV terkait IC yang merupakan aset tidak berwujud dalam hal ini mampu berperan dalam meningkatkan ED dan FP serta mendorong keunggulan kompetitif perusahaan. Selain itu, penelitian ini juga memberikan kontribusi terhadap teori keberlanjutan yang menyatakan bahwa keberlanjutan dalam perusahaan memerlukan peran IC sebagai variabel yang dapat mendorong ED untuk meningkatkan FP. Dengan demikian, IC menjadi variabel penting yang harus dipertimbangkan perusahaan untuk meningkatkan FP dengan tetap memperhatikan faktor keberlanjutan.

Kata Kunci: Modal intelektual, VAIC, ROA, pengungkapan lingkungan

ABSTRACT

This research aims to examine the moderating role of Intellectual Capital (IC) on the influence of Environmental Disclosure (ED) on Financial Performance (FP) in the energy sector listed on the IDX for the period 2020 to 2022. The analysis uses Ordinary Least Square (OLS). The research results found that IC was able to moderate the relationship between ED and FP. This research contributes to the RBV theory regarding IC, an intangible asset in this case that can play a role in increasing ED and FP and encouraging the company's competitive advantage. Apart from that, this research also contributes to sustainability theory, which states that sustainability in companies requires the role of IC as a variable that can encourage ED to increase FP. Thus, IC becomes an important variable that companies must consider to increase FP while still paying attention to sustainability factors.

Keywords: Intellectual capital, VAIC, ROA, environmental disclosure

1. Introduction

Companies in Indonesia have shown progress by realizing commitments that are not only focused on achieving profits but also paying attention to the environment and society by making disclosures in their sustainability reports. Net zero emission commitment is one of the strategies for improving the sustainability of the company. The realization of the Net zero emission commitment in Indonesia has provided the impetus to make certain efforts to reduce Greenhouse Gas (GHG) Emissions which are planned to be achieved by 2060 or sooner. As part of this commitment, companies, especially in the energy sector, are asked to actively contribute to significant emission reductions (Indonesian Ministry of Environment and Forestry, 2021). In addition, the net zero emission commitment is also in line with efforts to achieve the Sustainable Development Goals (SDGs) which are a global agenda to address environmental, social, and economic challenges. Integrating the principles of the SDGs into the company's sustainability strategy, will not only have a positive impact on the environment and society but also strengthen the company's financial performance.

The SDGs are not only a global agenda to address environmental, social, and economic challenges, but also a strong guide for companies in achieving sustainable performance. By following the principles of the SDGs, companies not only contribute positively to the environment and society but also strengthen their financial performance. For example, companies can increase involvement in social and environmental initiatives, such as corporate social responsibility programs that support education, health, and environmental protection. In addition, collaboration with other parties such as governments, non-governmental organizations (NGOs), and civil society also helps in achieving sustainable development goals. Environmentally friendly technological innovations are also key in accelerating the achievement of the SDGs, while increased transparency and accountability solidify the company's commitment to producing measurable positive impacts for all stakeholders. Thus, the integration of SDGs is not only an integral part of business strategy but also a foundation for addressing emerging challenges, including the unpredictable impact of some force majeure.

Despite Indonesia's ambitious targets and commitment to sustainability, the emergence of the COVID-19 pandemic that entered Indonesia in 2020 has created unprecedented complexity (President of the Republic of Indonesia, 2020). This global crisis has significantly impacted various sectors, including the financial viability of companies operating in the country. It is known that the COVID-19 pandemic phenomenon has had a negative impact on company revenue in Indonesia, based on data from the Indonesian Central Bureau of Statistics (BPS) which shows a large decrease in company revenue in Indonesia, which is 82.9%. A complex situation like this is a challenge for the company's FP, in situations like this IC can play an important role in helping companies to adapt quickly to changing market conditions, explore new opportunities, and manage risks effectively including environmental issues.

Intellectual Capital (IC) is a strategic resource in the scope of the company consisting of human capital, structural capital, and customer capital (Stewart (1997; Xu & Liu, 2021). Research by Afni & Achyani (2023) and Savitri (2022) shows that IC, including aspects related to environmental sustainability, can affect the relationship between Environmental

Disclosure (ED) and the company's Financial Performance (FP). These three studies also support the Resource-Based View (RBV) theory proposed by Barney (1991) and Hui et al. (2024) that companies that can manage valuable, rare, and difficult-to-imitate strategic assets can gain sustainable competitive advantage. Therefore, IC can be a valuable resource that enables companies to achieve competitive advantage and good performance amid the pandemic crisis.

Research conducted by Hichri & Ltifi (2021), Malik et al. (2023), and Zhou et al. (2024) reaffirm the positive association between ED and FP, with Zhou et al. (2024) highlighting its particular significance in the energy sector of Belt and Road Initiative (BRI) countries. Additionally, Zahid et al. (2023) emphasize the resilience of this relationship, especially amid economic turbulence such as the COVID-19 pandemic. These findings are consistent with sustainability theory by Meadows et al. (1927) and Tjahjadi et al. (2021), indicating that companies embracing sustainable frameworks tend to exhibit enhanced financial performance by considering long-term environmental and social impacts and leveraging internal and external resources to achieve sustainability objectives. Thus, these studies collectively offer a comprehensive understanding of the interplay between ED, sustainability concerns, and FP across diverse economic contexts. Even so, other studies have different results such as research conducted by Tahu (2019) and Wahdah & Jayanti (2023) which found that the company's ED does not have a significant positive relationship with the company's FP. However, it can be seen that there are several weaknesses in previous studies such as Hichri & Ltifi (2021), whose research was taken from a sample in Sweden only. Malik et al. (2023) only focus on bank companies, (Tahu, 2019) which only focuses on manufacturing companies, and Wahdah & Jayanti (2023) which also only focuses on coal companies. This is because of the lack of the amount of ED information provided by the company on environmental issues. If the company does not provide enough information or the information is inaccurate, then the positive effect of ED is not significant.

Based on the phenomenon and previous research, the author wants to develop this research from previous research by using IC as a moderating variable to obtain empirical evidence that IC strengthens the influence of ED on FP. The purpose of this study is to obtain empirical evidence of the effect of ED on FP during the COVID-19 pandemic. This research is important because it provides an in-depth view of the impact of involvement in environmental responsibility on a company's financial performance, especially in times of crisis such as the COVID-19 pandemic. In addition, by considering IC as a moderating variable, this research also deepens the understanding of how effective human resource management and customer relations can enhance the positive influence of environmental responsibility on corporate financial performance.

2. Theoretical Framework and Hypothesis Development

The grand theory in this research is the stakeholder theory that has been defined by Freeman (1984), is a business philosophy that emphasizes the interconnected relationships between a company and its various stakeholders, which include customers, suppliers, employees, investors, communities, and others who have a stake in the organization's success. Stakeholder theory proposes that a company should try to create some value for

all stakeholders (Joyce, 2020). Environmental Disclosure (ED), which entails transparently communicating a company's environmental actions, supports this attitude by instilling confidence and accountability in stakeholders. Companies that freely provide information about their ED practices demonstrate a commitment to resolving the concerns of stakeholders, including concerned consumers and investors about sustainability issues. This transparency not only improves stakeholder relationships but also enables companies to incorporate feedback into their strategies, potentially benefiting FP as stakeholders place a higher value on environmental responsibility, essentially creating long-term value creation for all parties involved (Adeneye et al., 2023).

In addition to stakeholder theory, the underlying theory of environmental and sustainability activities is sustainability theory. Sustainability theory was first proposed by Meadows et al. (1927), who said that companies should prioritize economic, social, and environmental issues. In the company itself, sustainability is defined as a strategy to maintain the sustainability of the company by considering the needs of stakeholders (Pemer et al., 2020). Companies that integrate economic, social, and environmental principles into their operations can enhance their sustainability value. Today, businesses consider not only financial gains but also environmental factors that can affect profitability. This shift reflects the broader trend away from solely pursuing economic growth and toward a holistic approach that encompasses social welfare, economic prosperity, and environmental sustainability. Acknowledging the interdependence of these pillars, the study emphasizes the significance of striking a balance between social, economic, and environmental aspects to foster lasting societal progress and well-being (Purvis et al., 2019).

The Resource-Based View Theory (RBV) described by Barney (1991) explains that companies that own, control, and utilize valuable, rare, and difficult-to-imitate strategic assets can gain a competitive advantage and good financial performance. Intellectual Capital (IC), which consists of knowledge, competencies, and intangible capabilities, is one of the strategic assets that can provide sustainable competitive advantage and superior performance. RBV defines IC as a resource that serves as the core of value creation and excellence for the firm. This holds in today's knowledge era, where physical assets like property, plants, and equipment are becoming easier to imitate, substitute, and trade on the open market. However, intangible assets are different, they possess their value, and highly superior resources are extremely rare. Companies that own and utilize IC as a strategic asset can gain a competitive advantage and good financial performance, as described in the RBV. In the context of the COVID-19 pandemic, research by Welly et al. (2023) shows that IC, including aspects related to environmental sustainability, can influence the relationship between ED and FP of pharmaceutical companies. Savitri (2022) found that IC enhances the impact of corporate social responsibility on FP. Based on the findings made by Afni & Achyani (2023) who found that sustainability reports affect profitability, this study chose IC as a moderating variable as the company's intellectual capabilities can influence the relationship between ED and FP. Companies that strive to have a competitive advantage must have human resources that have superior competitive qualities as well. In addition to human capital factors, companies must also have the right system to manage human resources effectively. Then, the company must also have strong customer relations

to increase its competitiveness. In accordance with the RBV theory in overcoming human resources that also have quality in competing, an appropriate system is needed to manage the company's human resources effectively, as well as appropriate customer relations to improve the company's competitiveness.

Research by Hichri & Ltifi (2021), Malik et al. (2023) and Zhou et al. (2024) reaffirm the positive association between ED and FP, with Zhou et al. (2024) highlighting its particular significance in the energy sector of Belt and Road Initiative countries. Additionally, Zahid et al. (2023) emphasize the resilience of this relationship, especially amid economic turbulence such as the COVID-19 pandemic. This suggests that companies should continue to invest in environmentally friendly and sustainable projects during the crisis. This study shows that despite uncertainty and variability in ED spending during the pandemic, an increase in ED during the pandemic period significantly increases FP. This proposes that environmentally friendly and sustainable strategies can provide financial benefits even in unstable economic conditions. This relates to sustainability theory from the perspective that companies operating within a sustainability framework tend to have better FP. Sustainability theory emphasizes the importance of considering the long-term impact of company operations on the environment and society, as well as how companies can leverage internal and external strengths to achieve sustainability goals. In addition to sustainability theory, this is consistent with stakeholder theory, which emphasizes the importance of multiple interests, such as the environment and society. Companies that consider the interests of a wider range of stakeholders are more likely to invest in projects that are not only financially profitable but also have a positive long-term impact on the environment and society. Based on the theories and previous research from (Hichri & Ltifi, 2021; Malik et al., 2023; Zahid et al., 2023; and Zhou et al., 2024), the first hypothesis is obtained as follows:

H₁ : Environmental disclosure has a positive relationship on financial performance.

Based on RBV theory, companies that have unique and valuable resources, such as knowledge, skills, and innovation, can create added value and improve their financial performance. Afni & Achyani (2023) and Savitri (2022) found the result that IC as a moderate variable can strengthen the relationship between sustainability reports measured by corporate environmental metrics and corporate profitability measured by ROA, this is because with a high level of IC, companies can be more effective in implementing recommendations that arise from sustainability reports, such as sustainable practices that can reduce operational costs or increase efficiency. This study also supports the RBV theory by showing that IC can be a valuable resource that enables companies to achieve competitive advantage and good performance amid the pandemic crisis. Based on the theory and previous research from (Afni & Achyani, 2023; Savitri, 2022; Welly et al., 2023), the second hypothesis is obtained as follows:

H₂ : Intellectual capital moderates the effect of the relationship between environmental disclosure and financial performance.

3. Research Method

This study uses a quantitative approach to estimate the relationship between the independent variable, Environmental Disclosure (ED), the dependent variable, Financial Performance (FP), and the moderating variable, Intellectual Capital (IC). In addition, this study uses a control variable, Tobin's Q. The sampling method used is the purposive sampling method, with the inclusion criteria of energy sector companies listed on the Indonesia Stock Exchange (IDX). The purpose of selecting the energy sector to be the sample of this study is because this sector is a sector that is the primary source of greenhouse gas emissions and air pollution. Companies included in this research sample must meet certain criteria which are described in Table 1.

Table 1. Sample Selection Criteria

No	Sample Criteria	Amount
1.	Energy sector companies listed on the IDX in 2020-2022	255
2.	Delisted companies in 2020-2022	(0)
3.	Companies that issued annual reports in 2020-2022	255
4.	Companies that have not issued sustainability reports in 2020-2022	(99)
5.	Companies that issued sustainability reports in 2020-2022	156
	Companies that do not use the GRI standard index in sustainability report in 2020-2022	(42)
6.	Companies that use the GRI standard index in sustainability report in 2020-2022	114
	Total observations	114

The description of the empirical model used in this study includes α which means constant, $ED_{i,t}$ which means environmental disclosure for a company i in year t , $ROA_{i,t}$ which means financial performance proxied by ROA of a company i in year t , $TOBIN'S Q_{i,t}$ which means Tobin's Q for a company i in year t , $VAIC_{i,t}$ which means intellectual capital proxied by VAIC of a company i in year t , β_1 - β_4 means regression coefficients, and ε which means is the standard error of individual i at time t . Data collection that has been carried out for this study, obtained a total sample size of 114 which meets the predetermined sample criteria as described in table 1. Details of data source collection and measurement formulations used in each variable are presented in Table 2.

Table 2. Variable Definition, Measurement, and Reference

No	Variable	Measurement	Reference
1.	<i>Environmental Disclosure (ED)</i>	GRI Standard Index 2018 by looking at environmental aspects only: $ED = \frac{\sum \text{Items disclosed}}{\text{Total disclosure items}}$	(Arifianti & Widianingsih, 2023; Shaikh, 2021)
2.	<i>Financial Performance (FP)</i>	$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$	(Arifianti & Widianingsih, 2023; Gunawan et al., 2020)
3.	<i>Intellectual Capital (IC)</i>	$VAIC = VAHC + VASC + VACC$	(Oematan & Radianto, 2020; Olarewaju & Msomi, 2021)
4.	Tobin's Q	Market capitalization / Total assets	(Clarkson et al., 2008)

This study refers to research by Madyan & Widuri (2023) which uses the Ordinary Least Squares (OLS) method with the common effect model to regress the effect of ED on FP, and the Moderated Regression Analysis (MRA) method to perform moderation regression (Wahyu & Widiatmi, 2019). Data analysis begins with descriptive statistical analysis and classical assumption testing. These tests will be carried out with a significance of 5%. Furthermore, the coefficient of determination test, F test, and hypothesis testing are carried out, by testing the regression model as follows:

$$ROA_{i,t} = \alpha + \beta_1 ED_{i,t} + \beta_2 TOBIN'S Q_{i,t} + \epsilon_{i,t} \dots \dots \dots (1)$$

$$ROA_{i,t} = \alpha + \beta_1 ED_{i,t} + \beta_2 VAIC_{i,t} + \beta_3 TOBIN'S Q_{i,t} + \beta_4 ED_{i,t} * VAIC_{i,t} + \epsilon_{i,t} \dots \dots \dots (2)$$

The use of ED as an independent variable is because each component and level of measurement has been measured in accordance with global standards, namely using items on the Global Reporting Initiative (GRI) index in the sustainability report by adding up all items disclosed and then dividing by the total GRI items (Arifianti & Widianingsih, 2023; Shaikh, 2021). FP as a dependent variable uses ROA as a measurement in accordance with previous research by Arifianti & Widianingsih (2023), and Gunawan et al. (2020). The use of IC as a moderating variable because IC measurement uses VAIC which has a strong relationship with FP, in VAIC measurement there are several important components, namely Human capital referred to in VAIC measurement as Value Added Human Capital (VAHC) which refers to a person's attributes in his contribution to the production process. This includes the knowledge, skills, skills, good health, and education of employees. Structural capital or what can be referred to in the measurement as Value Added Structural Capital (VASC) in IC refers to the infrastructure, processes, and databases that support a company. It includes elements such as systems, work culture, and organizational structure. Structural capital is the foundation that ensures that human capital operates effectively and efficiently in an organization. It is an intangible asset that is not directly related to human capital but is essential to the functioning and success of the organization. The last in the VAIC measurement components is customer capital or Value Added Customer Capital (VACC) in IC refers to the strength and loyalty of customer relationships. It is a separate component from human capital and structural capital, showing its importance to the value of an organization. Customer relationships are different from other relationships both inside and outside the organization. Customer capital is built through various means, such as brand recognition, customer loyalty, alliances, and other aspects that provide value to the company (Oematan & Radianto, 2020; Olarewaju & Msomi, 2021). Tobin's Q as a measurement of firm value influences ROA (Ahmed et al., 2024; Buleng et al., 2023), in accordance with research by Clarkson et al. (2008) which has used Tobin's Q as a control variable.

The independent variable in this study consists of ED, which aims to measure the level of disclosure of corporate environmental information. The dependent variable FP, which is measured based on ROA, has the aim of assessing the company's efficiency in generating profits from the total assets owned by the company. In addition, there is also IC as a moderating variable measured by VAIC to reflect the added value of the company's IC and the control variable, Tobin's Q, in this study to ensure that the relationship between variables is not influenced by other factors such as the company's market value relative to

its book value. The influence of IC is expected to strengthen or weaken the effect of ED on FP, with Tobin's Q serving as an additional control in the analysis. Thus, the regression model will account for the interaction between ED and IC on FP, taking into account external factors such as Tobin's Q.

4. Result and Discussion

The descriptive statistics presented in Table 3 show that the total average score for ED is 0.36, which reflects the average company included in the energy sector in the IDX's achievement of an average index score of 36%. The minimum ED score is 0.06, and the maximum is 0.97. Meanwhile, the standard deviation of ED is 0.26. ROA as a proxy for FP shows an average of 6.06, which means that the average ROA generated by energy sector companies during the COVID-19 pandemic is 6.06. The minimum value of ROA shown is -37.87 because it experiences losses. Meanwhile, the maximum value of ROA generated is 60.26. ROA of energy sector companies has a standard deviation of 14.68. The average VAIC score is 3.38, with a minimum value of -41.25, a maximum of 34.5, and a standard deviation of 7.75. VAIC shows a minus number because, during the pandemic, companies needed to reduce many operational costs, thus affecting VAIC. The average value of Tobin's q during the COVID-19 pandemic is 0.93, with a minimum value of 0.00, a maximum value of 11.28, and a standard deviation of 1.37.

Table 3. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Standard Deviation
ED	114	0.06	0.97	0.36	0.26
ROA	114	-37.87	60.26	6.06	14.68
VAIC	114	-41.25	34.50	3.38	7.75
Tobin's Q	114	0.00	11.28	0.93	1.37

In table 4, the results of the multicollinearity test of the independent variable ED and the control variable Tobin's Q on the dependent variable FP. In table 4 it can be seen that the results of the multicollinearity test without the moderating variable have a VIF value of $1.002 < 10$, a tolerance value of $0.998 > 0.01$ on ED and Tobin's Q. However, when carrying out the multicollinearity test by entering the VAIC moderating variable using the MRA method, the value can be seen This VIF variable is $1.050 < 10$, and the tolerance value is $0.952 > 0.01$. The multicollinearity test contained in Table 4, shows that the test results do not contain collinearity or intercorrelation in the tested variables, this is because the VIF value for both tests with or without moderating variables does not exceed 10%.

Table 4. Multicollinearity Test Result

Variable	Testing Result without Moderation		Testing Result with Moderation	
	Tolerance	VIF	Tolerance	VIF
ED	0.998	1.002	-	-
Tobin's Q	0.998	1.002	-	-
VAIC	-	-	0.952	1.050

Source : Processed data, 2024

Table 5, shows that the normality test without moderating variables has a p-value of $0.374 > 0.05$, and the ED and Tobin's Q heteroscedasticity tests show significance values of $0.216 > 0.05$ and $0.373 > 0.05$ respectively, where This value states that the classical assumption test in the regression model without moderation has been met. The results of the second normality and heteroscedasticity test, namely the VAIC moderating variable, obtained a p-value of $0.492 > 0.05$ in the normality test, and the heteroscedasticity test obtained a total of $0.976 > 0.05$. Therefore, the classical assumption test with moderating variables has been fulfilled.

Table 5. Normality and Heteroscedasticity Test Results

Variable	Testing Result without Moderation		Testing Result with Moderation	
	P-Value	Sig.	P-Value	Sig.
ED	0.375	0.216	-	-
Tobin's Q	0.375	0.373	-	-
VAIC	-	-	0.492	0.976

Source: Processed data, 2024

Table 6. Hypothesis Testing Results

Variable	ED without Moderation	ED with Moderation and Interaction
Constant	-0.056 (0.010)	-0.053(0.006)
ED	0.195 (0.000)*	0.119 (0.008)*
IC	-	0.007 (0.001)*
ED*IC	-	0.011 (0.040)*
Tobin's q	0.049 (0.000)*	0.036 (0.000)*
F test	25.52	35.66
R-Square	0.315	0.567
Adjusted R-Square	0.303	0.551
N	114	114

Note: *Significant at the level of 5%

Source : Processed data, 2024

The results to test the role of IC as a moderator in the relationship between ED and FP are presented in Table 6 hypothesis testing. The table shows that before the interaction between ED and IC is included (ED*VAIC), the significance level of ED on FP is 0.000 (0.05) with a coefficient of 0.195, which means that the effect of ED on FP is positively significant, H_0 is rejected and H_1 is accepted. Based on the result, the direct effect between the independent variable, ED, and the dependent variable, FP, proxied by ROA, found that ED has a significant positive effect. This result supports the sustainability theory by Meadows et al. (1927) which states the importance of integrating sustainable practices in business strategy to create long-term value for the firm and society as a whole. The finding that ED has a significant positive effect on FP, confirms that companies that adopt sustainable practices tend to have better financial performance and also stakeholder theory by Freeman (1984) that emphasizes the importance of taking into account the interests of various parties involved in corporate activities, including the environment. The finding that

ED has a positive effect on a firm's FP can be interpreted as evidence that firms that pay attention to the interests of stakeholders, including the environment, tend to achieve better financial performance (Zulfatillah, 2019). By expressing concern for the environment through ED, firms can strengthen relationships with stakeholders, enhance their reputation, and gain a competitive advantage in an increasingly sustainable market. Some previous studies such as Hichri & Ltifi (2021) found a positive impact of ED on the FP, and Zhou et al. (2024) emphasized the findings of this positive relationship with seeing the positive impact from ED on FP of energy companies in Belt and Road Initiative countries could be due to several factors, namely the company's commitment shown in its ED to sustainable practices, which can result in long-term value creation and attract socially responsible investors. It also reduces risks associated with environmental issues, increases transparency and accountability, and fosters positive relationships with stakeholders. These can contribute to improved FP by providing a competitive advantage, access to capital, and increased stakeholder engagement. This is also supported by the statement of Zahid et al. (2023) which states that companies with strong ED are better positioned to adapt to changing market conditions, maintain resilience, and create long-term value, which will have a positive influence on FP even in times of crisis such as the COVID-19 pandemic. When the company expresses its concern for environmental issues, the company will be viewed favorably by stakeholders, because companies that care about environmental issues will easily get a good impression, and this will have a long-term impact on increasing the company's FP. These findings imply that organizations must enhance and improve their environmental responsibility procedures to sustain their reputation and attract socially conscious investors, as well as raise their resilience in the face of changing market conditions. Thus, recognizing environmental challenges is not just a moral obligation, but also a sound business strategy for creating long-term profit.

For moderating variables, after the interaction variable between ED and IC is included, (ED*VAIC) has a significance level of 0.04 (0.05) and the coefficient is 0.011. Then, the IC variable itself has a significance level of 0.001 (0.05) with a coefficient of 0.007. This means that IC moderates the effect of ED on FP by strengthening its positive effect, therefore, H0 is rejected and H2 is accepted. This result supports the RBV theory proposed by Barney (1991) and Hui et al.(2024) that strategic assets that are valuable and not easily replaced, such as IC, provide a sustainable competitive advantage. The IC variable proxied by VAIC in this study as moderating the relationship between ED and FP has the result that it can strengthen the positive effect of ED on FP. These results indicate that IC as a moderating variable is quasi-moderating in the moderation classification. This means that this variable can strengthen the relationship between ED and FP, as well as being an independent variable. Previous research conducted by Afni & Achyani (2023), and Savitri (2022) shows that IC, including aspects related to environmental sustainability, can affect the company's ED and FP relationship. Companies with robust IC can strengthen the relationship between ED and FP because they can optimize the information disclosed in ED to support the company's operational and strategic sustainability. By effectively implementing sustainable practices, companies can sustainably create added value, improving their financial performance.

5. Conclusion, Implications, and Limitations

The study found empirical evidence that Environmental Disclosure (ED) with factors such as corporate commitment to sustainable practices, long-term value creation, attractiveness to investors with environmental interests and awareness, and risk reduction related to environmental issues all play an important role in increasing financial Performance (FP). In addition, environmental sustainability also enhances transparency, and accountability and builds positive relationships with stakeholders. All of these contribute to improved FP by providing competitive advantage, access to capital, and increased stakeholder engagement. Thus, it can be concluded that environmental sustainability plays an important role in improving corporate financial performance, even amidst difficult market conditions such as the COVID-19 pandemic. In addition, this study found that IC can strengthen the relationship between ED and FP in the presence of resources owned by the company, namely superior resources to achieve competitive advantage and good performance amid the pandemic crisis. With superior resources, it will affect the implementation of good ED. This is because, with a high level of Intellectual Capital (IC), companies can be more effective in implementing recommendations that arise from sustainability reports, such as sustainable practices that can reduce operational costs or increase efficiency. Based on the results of this study, companies are advised to increase their ED and IC, because ED can increase FP and IC strengthens the relationship. This study only uses ROA as a measurement for FP and disclosure items in the sustainability report using the 2018 standard GRI index as a measure of ED.

The limitations of this study also include a total sample of 258 which cannot be used as a whole, only 114 can be used, not all companies in Indonesia publish sustainability reports because some do not prioritize sustainability practices, thus leading to a lack of reporting. Additionally, the adoption of the GRI standard as a disclosure index is hindered by challenges faced by certain companies in collecting and verifying data necessary to report their environmental, social, and governance (ESG) performance in alignment with GRI guidelines. Future research is recommended to be able to use different measurements in measuring FP variables such as using Return on Equity (ROE), Net Profit Margin (NPM), and so on. In addition, future research can develop ED by using environmental performance as measured by PROPER and using different ED proxies such as measurements with OJK Regulation No. 51/POJK. 03/2017 concerning the implementation of Sustainable Finance for Financial Service institutions, Issuers, and Public Companies.

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