



## Green Intellectual Capital on Business Sustainability: The Role of Financial Performance as an Intervening

Muhammad Rayyan<sup>1\*</sup>, Windu Mulyasari<sup>2</sup>

Universitas Sultan Ageng Tirtayasa

**Corresponding Author:** Muhammad Rayyan, [rynramr@gmail.com](mailto:rynramr@gmail.com)

---

### ARTICLE INFO

### ABSTRACT

*Keywords:* Green Intellectual Capital, Business Sustainability, Financial Performance

*Received :* 3 January

*Revised :* 17 February

*Accepted :* 26 March

©2025 Rayyan, Mulyasari:  
This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/)



This study is to examine the effect of green intellectual capital on business sustainability with financial performance as an intervening factor. The green intellectual capital variable is projected into three parts, green human capital, green structural capital, and green relational capital. The population and sample used in the study were the energy sector with observation years from 2021 - 2023 and data obtained from the Indonesia Stock Exchange (IDX). This study uses a quantitative method analyzed using STATA 14 software. The random effect model (REM) is the research model. The results of the study show a significant effect between green human capital green, structural capital and green relational capital on business sustainability. Meanwhile, financial performance cannot be a mediator between green intellectual capital and business sustainability

## **INTRODUCTION**

This study explains the factors and implications of business sustainability using the strength of the company's financial performance. The assets of a company will have a major influence in presenting quality financial reports and the company's ability to make sustainable investments (Chang & Chen, 2012). The sustainability of a company needs to be a concern, especially for companies in the energy sector because this sector has a major influence on non-tax state revenues given to a country. Financial performance is one of the attractions of a company to show its financial ability in providing additional costs related to the sustainability attention of a company (Brockhaus et al., 2017).

A company needs to pay attention to other things besides the profit obtained from production results. The profit obtained from the company can improve welfare and affect living conditions widely to any party. Over time, concern for the environment in order to carry out company operations and produce environmentally friendly products will become a competitive advantage, thereby increasing profits and resulting in increased financial performance (Kurniawati & Widiayana, 2024). Corporate sustainability needs to be maintained because currently there is a lot of competition with the same type of business, especially free trade today (Setyawan et al., 2022). Companies need to carry out sustainability practices such as, carrying out transparency of organizational performance, investing in social and environmental programs, paying attention to measuring and addressing pollution and waste emissions that arise, and carrying out sustainable reporting each period (Meza-Ruiz et al., 2017). Over time, the increasing level of environmental concern expressed by companies in order to improve performance is very important, this explains the importance of intangible assets in reporting (Sukirman & Dianawati, 2023).

Until now, the company's operations for the advancement of a knowledge-based economy, intangible assets have become one of the important measurements in evaluating competitive advantage for companies, such as intellectual capital (Agostini et al., 2017). The components of intellectual capital are human capital, relational capital, and structural capital. These assets have a crucial and strategic role in measuring human resources in a company. Intellectual capital captures knowledge that can provide benefits for company activities that can affect the ability to innovate within the company (Mulyasari & Murwaningsari, 2019). Based on these problems, it is important for companies to prioritize the green concept, not just intellectual capital. The green concept established by the company reflects the company's concern that is not only focused on profit, but also prioritizes other aspects, such as economic, social, and environmental for external and internal through innovations produced by environmentally friendly intangible assets, including green human capital (GHC), green relational capital (GRC), green structural capital (GSC) (Chen, 2008). Companies need to be responsible for sustainability. This is because there needs to be human welfare due to the pollution produced. Then, the application of green intellectual capital can help companies improve renewable energy operations and strive not to depend on conventional energy resources (Renaldo & Augustine, 2022). Contributions to the accountability of business operations

through investment capabilities to improve sustainability indicate the company's financial health (Menne et al., 2022).

This research is very important to do because there are still inconsistencies in the results with previous research. In addition, the sector used is also interesting to study because it can contribute to non-tax state revenues, but also contributes carbon emissions and negative impacts on society and the environment according to the year of research observation. Research conducted by Setyawan et al. (2022) shows that the GHC and GSC components have a significant influence on business sustainability, but not for GRC. Based on this study, companies do not seem to prioritize GRC with external parties because this component is considered to have less favorable conditions. Research conducted by Yusoff et al. (2019) has different results because GHC in this study has no effect on business sustainability, while GSC and GRC do. This means that companies ignore GHC. In fact, humans are the most important resource for business sustainability. In addition, there are differences in the results of research conducted by Li et al., (2023), namely the significant influence of GHC on business sustainability, but the GRC and GSC components do not have a significant influence. Producers in this country do not provide effective communication for sustainability to stakeholders.

Financial performance becomes a mediating variable because it can meet a number of conditions according to Baron and Kenny (1986) where the independent variable has a significant effect on the mediating variable, the independent variable has a significant effect on the dependent variable, and when the influence of the mediating variable can affect the relationship between the independent and dependent variables. Companies can realize various goals, such as allocating incentives to prioritize the concept of a triple bottom line company (Ngurah et al., 2024). In addition, good financial performance allows businesses to practice more sustainable investment and strengthen their commitment to it (Santis et al., 2016). Research conducted by Menne et al., (2022) argues that quality financial performance can create sustainability through business growth with increased revenue, product quality, competitiveness, quality of customer service, and increased sales volume so as to provide a good image through business stability. Then, research conducted by Ngurah et al., (2024) showed the results of a positive influence between financial performance and business sustainability, which means that achieving high profits will increase an agency to provide benefits and prioritize people in the triple bottom line principle. However, the results are in contrast to the research of Santis et al., (2016) which resulted in no effect between business sustainability and financial performance. The reason for this finding is because there is no incentive from the company to provide a strategy with a better sustainability focus.

## **LITERATURE REVIEW**

### **Resource Based View Theory**

This study uses resource-based view theory. The theory was introduced by Wernerfelt (1984) who explained the urgency of resources that create competitive advantage. Then, resources become intangible assets that are integrated and can contribute to the company's performance and sustainability (Barney, 1991). Then,

this theory explains that resources become a value when a company formulates and implements strategies that can improve the quality of its efficiency and effectiveness (Barney, 1991). Human resources are related to characteristics such as expertise, technical skills, knowledge, and education (Bontis et al., 2000). RBV explains that company resources include all assets, capabilities, organizational processes, company characteristics, knowledge, and organizational capabilities that become company controls in order to achieve excellence (Barney et al., 2001).

### **Green Intellectual Capital**

Development of intellectual capital by adjusting national and international regulations regarding environmental protection and increasing public awareness of the importance of contributing to the environment. There are various components in GIC, such as Green Human Capital (GHC), Green Relational Capital (GRC), Green Structural Capital (GSC) (Chen, 2008). Opportunities for companies in developing sustainable products and improving business performance through the environment can come from GIC (Yong et al., 2020). The impact of GIC on Business sustainability becomes a value because it prioritizes several aspects, such as economic, environmental, and social (Yong et al., 2020).

GHC components regarding the quantity of knowledge, skills, experience, abilities, and policies, as well as employee commitment regarding (Chen, 2008). Human Capital can be a current investment through the competencies and outputs provided in the long term (Birhane et al., 2023). This is because employees who have a deep understanding of the growth mindset can increase their knowledge and skills in developing a bigger business (Unm et al., 2024). Meanwhile, GSC is the company's stock capability, company commitment, knowledge management, information technology, organizational culture, corporate image, patents, and others regarding the environment in a company (Chen, 2008). Then, GRC discusses a good relationship between the company and customers, suppliers, and partners regarding the environmental organization carried out by the company (Chen, 2008). A company that has profitable resources will be able to have a good impact on customers, so that later it will achieve the company's goals in having quality marketing and financial performance (Varadarajan, 2020).

### **Business Sustainability**

The concept related to Business sustainability can be understood as a company management process by considering three main aspects, namely economic, social, and environmental or also known as the triple bottom line approach (Bose & Mahajan, 2018). A truly sustainable business changes its perspective from trying to minimize negative impacts to understanding how the business can create a significant positive impact in areas that are important and relevant to society (Dyllick & Muff, 2016). If the company's performance and competitiveness in the midst of current market demands are to improve, it is necessary to develop a comprehensive indicator evaluation system based on collaboration between cross-departmental teams that are able to contribute to the improvement of the company as a whole (Kocmanová & Dočekalová, 2011). In addition, businesses that prioritize sustainability recognize nature explicitly and implicitly as a stakeholder so that technological innovation is needed to eliminate

non-recyclable waste and pollution and the selection of collaborative and sustainable supply chains (Stubbs & Cocklin, 2008).

### **Financial Performance**

Financial performance serves as a visual representation of the relationship between a business's direct assets and its direct liabilities (Birhane et al., 2023). A company's profit is not only an indicator of its funding capabilities, but also an element in the creation of company value that shows future prospects. In measuring financial performance, investors usually look at financial performance reflected in various ratios (Proud & Suhendra, 2023). One of the measurements in the profitability ratio is return on assets (ROA). Return on assets measures how much net profit can be obtained from all assets owned and invested in a company (asset efficiency). The higher the return on assets, the more effective the company is in utilizing assets to generate net profit after tax, thus it can be explained that the higher the ROA, the more dividends received by shareholders will increase (Kurniawan, 2021).

### **Hypothesis Development**

1. H1.a Green Human Capital has a Positive Impact on Business sustainability

Setyawan et al. (2022) produced a study on the influence between GHC and Business sustainability. Mining companies tend to use human resources to understand the role in realizing an environmentally friendly company. Li et al., (2023) have also produced research on green human capital having a significant positive impact on business sustainability. This is also supported by research by Malik et al. (2020) which states that there is a positive and significant influence between the GHC variable and sustainability performance. Superior employees who have competence and the environment are also supported by training provided by the company.

2. H1.b Green Structural Capital has a Possitive Impact on Business sustainability

The study also supports Yong et al. (2020) who also had positive results between GHC and business sustainability. The structural capital disclosed by the company will get a positive response from the community. This means that structural capital is something that is needed in sustainability. Then, the research produced by Yusoff et al. (2019) also showed that there were positive and significant results between GSC and business sustainability. These findings indicate that sustainability requires companies to overcome challenges, such as using friendly technology to make it happen. In addition, the results of the study (Malik et al., 2020) also stated that there was an influence of GSC on sustainability performance. Because not only human resources are needed, but also friendly structural capital also has an important role in realizing sustainability.

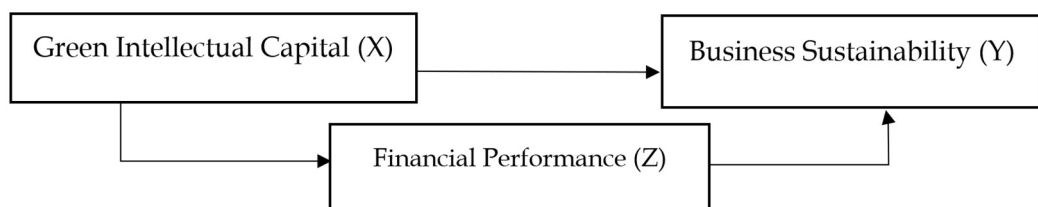
3. H1.C Green Relational Capital has a Positive Impact on Business sustainability

Malik et al. (2020) found research on the significant positive influence between GRC and business sustainability. The study found that there was an indication of the most dominant factor that explained the importance of GRC in improving the company's sustainability performance. These relationships include customers, suppliers, stakeholders (Chang & Chen,

2012). Research conducted by Yusoff et al., (2019) shows a positive influence of GRC on business sustainability. Of course, GRC must continue to develop in order to realize Business sustainability through the creation of communication with stakeholders to reduce negative environmental impacts, produce friendly products. Thus, sustainability can be increased.

4. H2.a : Financial performance can mediate the effect of green human capital on business sustainability
5. H2.b : Financial performance can mediate the effect of green structural capital on business sustainability
6. H2.c : Financial performance can mediate the effect of green relational capital on business sustainability

The resources owned by the company are very important for operating a business. The company's excellence and sustainability can be realized if there are resources that are different from other competitors (López Rodríguez & García Rodríguez, 2005). The urgency of a management system with a green concept carried out by the company is very important to improve financial performance. Companies need to pay attention to environmentally friendly concepts that can improve the company's financial performance in the eyes of stakeholders (Agustina et al., 2024). As research conducted by Renaldo & Augustine, (2022) and Agustina et al., (2024) shows that there is an influence between green intellectual capital and financial performance, which means that good implementation of green intellectual capital will improve financial performance. Profit allocation needs to be poured into the focus of sustainability. Good financial performance is reflected in the company's ability to realize sustainability (Brockhaus et al., 2017). One of the challenges faced by the company to date is the company's ability to be responsible to external parties. The profitability obtained by the company comes from the utilization of the environment and society that they manage. Based on the research results of Siswanti et al. (2022), Menne et al., (2022), and Wati et al., (2024) there were findings of a significant positive influence between financial performance variables and business sustainability. The study examined the disclosure of good financial performance that will realize the sustainability goals of a company or agency. Thus, the company also focuses on the environment and society, not only oriented towards profit.



Picture 1. Conceptual Framework

## METHODOLOGY

In this study, business sustainability becomes the dependent variable, green intellectual capital becomes the independent variable. Then, there is a mediating variable, namely financial performance. This study uses a quantitative method

with objects in the energy sector listed on the Indonesia Stock Exchange (IDX) in 2021 - 2023. The sample used is purposive sampling, namely those who report annual reports and sustainability reports in that period. This study uses panel data to see the effect of independent variables on dependent variables. The regression model is tested through model testing first to obtain the optimal regression model between the common effect model, fixed effect model, and random effect model. This study also uses an online Sobel test calculator to determine the indirect effect of independent variables on dependent variables through mediating variables. The regression model for testing independent variables to dependent and intervening variables is as follows:

$$BSit = \alpha + \beta_1GHCit + \beta_2GSCit + \beta_3GRCit + \beta_4ROAit + e$$

$$ROAit = \alpha + \beta_1GHCit + \beta_2GSCit + \beta_3GRCit + e$$

Keterangan:

Bsit : Business Sustainability

$\alpha$  : Constant

$\beta_1, \beta_2, \beta_3$  : Koefisien Regresi

GHCit: Green Human Capital

GSCit : Green Structural Capital

GRCit : Green Relational Capital

ROAit: Return on Assets (Proxy of Financial Performance)

Tabel 1. Summary of Variable and Measurements

No.	Variable's role	Variable's name	Formula
1.	Independent Variable	Green Human Capital	$GIC = \frac{\sum Disclosure Score}{\sum Maximum Score}$
		Green Structural Capital	
		Green Relational Capital	
2.	Dependent Variable	Business sustainability	$BS = \frac{\sum Disclosure Score}{\sum Maximum Score}$
3.	Mediating Variable	Financial Performance	$ROA = \frac{Earning after Tax}{Total Assets}$

This study implements independent variables as green intellectual capital which is projected into three, namely green human capital, green structural capital, and green relational capital. Independent variables are measured using content analysis from Huang & Kung's research, (2011). There are 18 items disclosed in the study and divided into three projections, GHC, GSC, and GRC. Then, the dependent variable in this study is business sustainability which is measured using content analysis from Chow & Chen's research, (2012) which contains 22 indicators. The study explains that business sustainability can be a strategy by considering economic, social, and environmental aspects. Content analysis is considered to be systematic, objective, and can be a determinant of factors that influence the publication of reports and can be a puller of the right decisions (Guthrie & Petty, 2000). Furthermore, the mediating variable used is financial performance using return on assets as a measurement. Related to how the assets owned by the company are able to realize business sustainability.

**RESULT****Chow test**

The Chow test is used to select the model used, whether it is better to use the common effect or fixed effect method.

Tabel 2. Chow Test

<b>F (3,105)</b>	<b>971.76</b>
<b>Prob &gt; F</b>	<b>0.0000</b>

Based on the results of the Chow test, P Value (Prob>F)  $0 < \text{Alpha } 0.05$ , then H1 is accepted, which means that the fixed effect is the selected model.

**Hausman test**

The Hausman test is conducted to select a better model, whether a fixed effects model or a random effects model, with the following provisions:

Tabel 3. Hausman Test

<b>Chi</b>	<b>13.36</b>
<b>Prob &gt; Chi2</b>	<b>0.0797</b>

Based on the results of the Hausman test, it is known that the P Value (Prob>Chi2) is  $0.0797 > \text{Alpha } 0.05$ , so H1 is accepted or which means the best choice is the random effect model rather than the fixed effect model. Of the three results of the regression model tests, two tests showed that the random effect model method was more appropriate, so it can be concluded that the random effect method is the best panel data regression estimation method in this study. The results of the panel data regression can be seen in the table below:

Tabel 4. Hypothesis Test Result by STATA 14

<b>bs</b>	<b>Coef.</b>	<b>Std.Err</b>	<b>z</b>	<b>P&gt;  z </b>	<b>[95% conf. Interval]</b>	
ghc	-0.465762	0.0979994	-4.75	0.000	-0.6578373	- 0.2736867
gsc	-0.4204551	0.0970311	-4.33	0.000	-0.6106327	- 0.2302776
grc	0.9863641	0.0268654	36.72	0.000	0.933709	1.039019
roa	0.039019	0.0022188	1.43	0.153	-0.00118	0.0075176
_cons	-0.5838705	-0.0549069	-4,39	0.000	-0.6914861	-0.476255

The following are the results of a mediation test using the online Sobel calculator to determine the effect of green intellectual capital on business sustainability with financial performance mediation.

Tabel 5. Sobel Test Result by [quantpsy.org/sobel/sobel.htm](http://quantpsy.org/sobel/sobel.htm)

<b>Variable</b>	<b>Test Statistic</b>	<b>Std. Error</b>	<b>P-Value</b>
GHC	-0.10307203	0.01151818	0.9179058
GSC	0.51374679	0.01223502	0.60742903
GRC	-0.31577182	0.00292815	0.75217571

## DISCUSSION

### **The Effect of Green Human Capital on Business Sustainability**

Based on the results of the fixed effect model, it explains that there is an influence of green human capital on business sustainability. The t-table value in this study is  $1.975189163 > -4.75$  t-statistic value and probability value  $0.000 < 0.05$ . These results explain that green human capital has a negative and significant effect on business sustainability. This study can explain that indications of green human capital can increase business sustainability. The results of this study are also in accordance with the research of Setyawan et al., (2022), Malik et al., (2020), Li et al., (2023) which show the influence and significant of green human capital on business sustainability. GHC is one of the most important resources to achieve proper development and realize sustainability (Yusoff et al., 2019). Employees who share the organization's goals for environmental sustainability, can be done through a focus on training needs and ongoing employee appraisals that create their ability to work in a pro-environmental way and, finally, compensate them based on their environmental performance (Yong et al., 2020). Companies do not own human capital, but it can be acquired from employees and can be lost when they leave the organization (Chang and Chen, 2012). This is in accordance with the RBV theory which explains that resources become a value when a company develops and implements strategies that can improve the quality of its efficiency and effectiveness Barney (1991). Then, human capital has intelligence, skills, and also unique views for the company so that it can create competitive advantages, and realize various company goals (Bontis et al., 2000).

### **The Effect of Green Structural Capital on Business Sustainability**

The results of Table 4. Show the influence of green structural capital on business sustainability. This study has a t-statistic value  $(-4.33) < t\text{-table}$   $(1.975189163)$  with  $P > |z|$   $(0.000) < (0.005)$ . Which means that partially green structural capital has a negative and significant effect on business sustainability. The results of this study are in accordance with previous studies, such as Yusoff et al., (2019), Malik et al., (2020), and Jermsittiparsert, (2021) that green structural capital can affect business sustainability. Structural capital can achieve sustainability through environmental improvements in organizations and new technologies (López Rodríguez & García Rodríguez, 2005). However, GSC also requires support from top management in order to realize sustainability (Setyawan et al., 2022). In addition to replacing conventional working techniques, technology has made it feasible to provide new services that were previously unattainable and unoffered (Yusoff et al., 2019). This is also supported by the research theory used, namely RBV. The theory explains that structural capital in a company is able to regulate system documentation, strategies, and realize various procedures to be implemented (Bontis et al., 2000).

### **The Effect of Green Relational Capital on Business Sustainability**

It can be seen from table 2.1 that the t-statistic value  $(36.72) > t\text{-table}$   $(1.975189163)$  with Prob.  $(0.00) < (0.05)$ . So, it can be concluded that there is a positive significant influence of green relational capital on business sustainability. This study is in accordance with previous research by researchers, namely Yusoff et al., (2019), Omar et al., (2019), and Jermsittiparsert, (2021). Through a stable

relationship, the company can more easily access market information and business situation as well as making them more knowledgeable and concerned about the impact of their current activities on sustainability (Omar et al., 2019). GRC that continues to grow needs collaborative support to realize motivation towards profitable practices from corporate sustainability so that it can create cooperative dialogue with external parties and stakeholders to reduce the environmental impact of producing more environmentally friendly products (Yusoff et al., 2019). This study is also supported by the theory that relational capital relations provide a reference to the value obtained from a company's ties with customers, suppliers, distributors, partners, and local communities (Bontis et al., 2000).

### **The Effect of Financial Performance as Mediating of Green Intellectual Capital on Business Sustainability**

Based on the results of the online Sobel test calculator, it can be seen that the P-Value (0.9179058) > (0.05) shows that the green human capital variable has no effect and is not significant on business sustainability through financial performance. Or in other words, financial performance cannot be a mediator between green human capital and business sustainability. Then, based on the results of the online Sobel test calculator, it can be seen that the P-Value (0.60742903) > (0.05) shows that the green structural capital variable does not have a significant effect on business sustainability through financial performance. Or in other words, financial performance cannot be a mediator between green structural capital and business sustainability. Furthermore, based on the results of the online Sobel test calculator for the green structural capital variable, it can be seen that the P-Value (0.75217571) > (0.05) shows that the green structural capital variable does not have a significant effect on business sustainability through financial performance. The three Sobel test results show that financial performance is not able to mediate between green intellectual capital and business sustainability. This means that this study shows that there are other indicators that can be determinants of sustainability. These results are in accordance with the research of Hidayati & Febrianto (2022) and Lo & Liao (2021) that financial performance cannot be a mediator and has no influence between financial performance and business sustainability, which means that companies only focus on short-term profitability which can endanger the long-term survival of the company. In addition, research by Majidah & Aryanty (2022) found that the intellectual capital owned by the company was unable to manage capital efficiency and obtain optimal profits.

### **CONCLUSION AND RECOMMENDATION**

This study shows the conclusion that the implementation of green intellectual capital has an impact on business sustainability in the energy sector in a country. The results of statistical data processing show that there is an influence between green human capitals has a significant effect on business sustainability. This is because human resources have an important role in carrying out various company goals towards the concept of sustainability and being environmentally friendly. Then, green structural capital also has a significant effect on business sustainability. This attention is because the company is able to have various strategies and procedures that can be implemented in order to realize

sustainability. Green relational capital also has positive and significant effect on business sustainability. With external party relations, it can have good value for the company. However, based on research, financial performance is not able to mediate between green intellectual capital and business sustainability. Recommendations for further research are to use other sectors that have an impact on the economy, society, and environment. In addition, it can use other measurements and choose other variables to mediate between the independent and dependent variables.

### **FURTHER STUDY**

This study certainly still has limitations, such as only focusing on one sector in a country. This study can be a reference to improve further research by increasing samples in various sectors, choosing other mediating variables, and changing the form of data to primary in order to find out the real situation.

### **ACKNOWLEDGMENT**

I would like to express my gratitude and thanks to Sultan Ageng Tirtayasa University for providing the opportunity to study and support this research. Not to forget for my lecturer who has provided support, guidance, and also helped during the process of this research. Then, I would like to thank my colleagues during the study and research who have always accompanied and supported me so far. And most importantly to myself who has struggled and succeeded in completing this research very well and on time. Hopefully this research can be a reference for future research and can be useful for all parties.

### **REFERENCES**

- Agostini, L., Nosella, A., & Filippini, R. (2017). Does intellectual capital allow improving innovation performance? A quantitative analysis in the SME context. *Journal of Intellectual Capital*, 18(2), 400–418. <https://doi.org/10.1108/JIC-05-2016-0056>.
- Agustina, S., Ruhayat, E., & Sugiyanto, S. (2024). Green Intellectual Capital, Asset Growth on Stock Return: Role Financial Performance as Intervening. *Asean International Journal of Business*, 3(1), 36–49. <https://doi.org/10.54099/aijb.v3i1.839>.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1). <https://doi.org/https://doi.org/10.1177/014920639101700108>.
- Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27(6), 625–641. <https://doi.org/10.1177/014920630102700601>.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical

- considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Birhane, M., Amentie, C., Borji, B., & Kant, S. (2023). Human Capital and Financial Management Practices Effect on Coffee Cooperatives Performance in Ethiopia. *International Journal of Applied Economics, Accounting and Management (IJAEAM)*, 1(3), 169-182. <https://doi.org/10.59890/ijaeam.v1i3.445>.
- Bontis, N., William Chua Chong, K., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85-100. <https://doi.org/10.1108/14691930010324188>.
- Bose, M., & Mahajan, R. (2018). Business Sustainability: Exploring the Meaning and Significance Business Sustainability: Exploring the Meaning and Significance-declines-in-global-poverty-but-major-challenges-remain 2 (Vol. 7, Issue 2). <http://www.worldbank.org/en/news/press-release/2013/04/17/remarkable>  
<http://www.teebweb.org3http://report.businesscommission.org/8>.
- Brockhaus, S., Fawcett, S. E., Knemeyer, A. M., & Fawcett, A. M. (2017). Motivations for environmental and social consciousness: Reevaluating the sustainability-based view. *Journal of Cleaner Production*, 143, 933-947. <https://doi.org/10.1016/j.jclepro.2016.12.027>.
- Chang, C. H., & Chen, Y. S. (2012). The determinants of green intellectual capital. *Management Decision*, 50(1), 74-94. <https://doi.org/10.1108/00251741211194886>.
- Chen, Y. S. (2008). The positive effect of green intellectual capital on competitive advantages of firms. *Journal of Business Ethics*, 77(3), 271-286. <https://doi.org/10.1007/s10551-006-9349-1>
- Chow, W. S., & Chen, Y. (2012). Corporate Sustainable Development: Testing a New Scale Based on the Mainland Chinese Context. *Journal of Business Ethics*, 105(4), 519-533. <https://doi.org/10.1007/s10551-011-0983-x>
- Dyllick, T., & Muff, K. (2016). Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability. *Organization and Environment*, 29(2), 156-174. <https://doi.org/10.1177/1086026615575176>
- Guthrie, J., & Petty, R. (2000). Intellectual Capital: Australian Annual Reporting Practices. *Journal of Intellectual Capital*, 1, 241-251. <https://doi.org/10.1108/14691930010350800>.

- Hidayati, C., & Febrianto, G. N. (2022). INFLUENCE OF ISLAMIC CORPORATE GOVERNANCE AND INTELLECTUAL CAPITAL ON BUSINESS SUSTAINABILITY THROUGH FINANCIAL PERFORMANCE AS MEDIATION VARIABLES IN SHARIA BANKING FOR THE 2016-2020 PERIOD. *Jurnal Ekonomi*, 11(02). <http://ejournal.seaninstitute.or.id/index.php/Ekonomi>.
- Huang, C. L., & Kung, F. H. (2011). Environmental consciousness and intellectual capital management: Evidence from Taiwan's manufacturing industry. *Management Decision*, 49(9), 1405–1425. <https://doi.org/10.1108/00251741111173916>.
- Jermittiparsert, K. (2021). Green Intellectual Capital Factors Leading to Business Sustainability. *E3S Web of Conferences*, 277. <https://doi.org/10.1051/e3sconf/202127706009>.
- Kocmanová, A., & Dočekalová, M. (2011). CORPORATE SUSTAINABILITY: ENVIRONMENTAL, SOCIAL, ECONOMIC AND CORPORATE PERFORMANCE (Issue 7). <http://www.globalreporting.org>.
- Kurniawan, A. (2021). ANALYSIS OF THE EFFECT OF RETURN ON ASSET, DEBT TO EQUITY RATIO, AND TOTAL ASSET TURNOVER ON SHARE RETURN. *JOURNAL OF INDUSTRIAL ENGINEERING & MANAGEMENT RESEARCH*, 2(1), 2722–8878. <https://doi.org/10.7777/jiemar>.
- Kurniawati, K., & Widiyana, W. (2024). DAMPAK GREEN INTELLECTUAL CAPITAL TERHADAP GREEN INNOVATION DALAM MENINGKATKAN NILAI PERUSAHAAN MELALUI KINERJA KEUANGAN. *Jurnal Aplikasi Akuntansi*, 8(2), 520–536. <https://doi.org/10.29303/jaa.v8i2.409>
- Li, W., Bhutto, M. Y., Waris, I., & Hu, T. (2023). The Nexus between Environmental Corporate Social Responsibility, Green Intellectual Capital and Green Innovation towards Business Sustainability: An Empirical Analysis of Chinese Automobile Manufacturing Firms. *International Journal of Environmental Research and Public Health*, 20(3). <https://doi.org/10.3390/ijerph20031851>.
- Lo, F. Y., & Liao, P. C. (2021). Rethinking financial performance and corporate sustainability: Perspectives on resources and strategies. *Technological Forecasting and Social Change*, 162. <https://doi.org/10.1016/j.techfore.2020.120346>.

- López Rodríguez, J., & García Rodríguez, R. M. (2005). Technology and export behaviour: A resource-based view approach. *International Business Review*, 14(5), 539–557. <https://doi.org/10.1016/j.ibusrev.2005.07.002>.
- Majidah, & Aryanty, N. (2022). Financial Performance: Environmental Performance, Green Accounting, Green Intellectual Capital, Green Product, & Risk Management. *International Conference on Industrial Engineering and Operations Management*.
- Malik, S. Y., Cao, Y., Mughal, Y. H., Kundi, G. M., Mughal, M. H., & Ramayah, T. (2020). Pathways towards sustainability in organizations: Empirical evidence on the role of green human resource management practices and green intellectual capital. *Sustainability (Switzerland)*, 12(8). <https://doi.org/10.3390/SU12083228>.
- Menne, F., Surya, B., Yusuf, M., Suriani, S., Ruslan, M., & Iskandar, I. (2022). Optimizing the Financial Performance of SMEs Based on Sharia Economy: Perspective of Economic Business Sustainability and Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1). <https://doi.org/10.3390/joitmc8010018>.
- Mulyasari, W., & Murwaningsari, E. (2019). Intellectual Capital, Competitive Advantage, Financial Performance And Company Value among Banking Industries In Indonesia. *Advances in Social Sciences Research Journal*, 6(4), 78–89. <https://doi.org/10.14738/assrj.6419>.
- Ngurah, I. B., Widnyana, W., & Sujana, W. (2024). THE EFFECT OF STRUCTURAL CAPITAL, SOCIAL CAPITAL, AND REPUTATIONAL CAPITAL ON FINANCIAL PERFORMANCE AND BUSINESS SUSTAINABILITY (Study on Village Credit Institutions in Badung Regency). *Global Research Review in Business and Economics [GRRBE]*, 09(05), 19–34. <https://doi.org/10.56805/grrbe>.
- Omar, M. K., Yusoff, Y. M., & Zaman, M. D. K. (2019). The Effect of Organizational Learning Capability as a Mediating Variable in the Relationship between Green Intellectual Capital and Business Sustainability: Evidence from the Manufacturing Sector. *International Journal of Academic Research in Business and Social Sciences*, 9(6). <https://doi.org/10.6007/ijarbss/v9-i6/5974>.
- Proud, L. M., & Suhendra, E. S. (2023). Financial Performance and Company Values: A Study in the Banking Sector. *Indatu Journal of Management and Accounting*, 1(2), 60–68. <https://doi.org/10.60084/ijma.v1i2.96>.
- Renaldo, N., & Augustine, Y. (2022). The Effect of Green Supply Chain Management, Green Intellectual Capital, and Green Information System

on Environmental Performance and Financial Performance. Archives of Business Research, 10(10), 53-77.  
<https://doi.org/10.14738/abr.1010.13254>.

Santis, P., Albuquerque, A., & Lizarelli, F. (2016). Do sustainable companies have a better financial performance? A study on Brazilian public companies. Journal of Cleaner Production, 133, 735-745.  
<https://doi.org/10.1016/j.jclepro.2016.05.180>

Setyawan, S., Juanda, A., & Inata, L. C. (2022). Role of green intellectual capital on business sustainability. Journal of Innovation in Business and Economics, 06(01). <https://doi.org/10.22219/10.22219/jibe.v6i01.17864>

Siswanti, I., Sofriana Imaningsih, E., Yusoff, Y. M., & Prowanta, E. (2022). THE ROLE OF ISLAMIC INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE ON SUSTAINABILITY BUSINESS ISLAMIC BANKS IN INDONESIA. The Seybold Report, 1.  
<https://doi.org/10.5281/zenodo.6938193>.

Stubbs, W., & Cocklin, C. (2008). Conceptualizing a “sustainability business model.” Organization and Environment, 21(2), 103-127.  
<https://doi.org/10.1177/1086026608318042>

Sukirman, A. S., & Dianawati, W. (2023). Green intellectual capital and financial performance: The moderate of family ownership. Cogent Business and Management, 10(1). <https://doi.org/10.1080/23311975.2023.2200498>.

Unm, I., Supatminingsih, T., Ihsan Said, M., & Subur, H. (2024). Human Capital and Growth Mindset Influence the Performance of MSMES through Psychological Capital as a Moderator Variable. International Journal of Applied Economics, Accounting and Management (IJAEAM), 2(5), 397-408. <https://doi.org/10.59890/ijaeam.v2i5.2506>.

Varadarajan, R. (2020). Customer information resources advantage, marketing strategy and business performance: A market resources based view. In Industrial Marketing Management (Vol. 89, pp. 89-97). Elsevier Inc.  
<https://doi.org/10.1016/j.indmarman.2020.03.003>.

Wati, Y., Irman, M., & Renaldo, N. (2024). Green Intellectual Capital, Financial Performance, and Good Corporate Governance. Jurnal Akuntansi Keuangan Dan Bisnis, 17(1), 28-37. <https://doi.org/10.35143/jakb.v>

Wernerfelt, B. (1984). A Resource-Based View of the Firm. In Strategic Management Journal (Vol. 5, Issue 2).

- Yong, J. Y., Yusliza, M. Y., & Fawehinmi, O. O. (2020). Green human resource management: A systematic literature review from 2007 to 2019. In *Benchmarking* (Vol. 27, Issue 7, pp. 2005–2027). Emerald Group Holdings Ltd. <https://doi.org/10.1108/BIJ-12-2018-0438>
- Yusoff, Y. M., Omar, M. K., Kamarul Zaman, M. D., & Samad, S. (2019). Do all elements of green intellectual capital contribute toward business sustainability? Evidence from the Malaysian context using the Partial Least Squares method. *Journal of Cleaner Production*, 234, 626–637. <https://doi.org/10.1016/j.jclepro.2019.06.153>.