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The Effect of Tax Accounting, Green Accounting, and Carbon Accounting on Environmental, Social, and Governance Performance: Moderated by Green Intellectual Capital

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Abstract. Researchers structured this study to obtain empirical evidence about how the effect of tax accounting (TAC), green accounting (GAC), and carbon accounting (CAC) on environmental, social, and governance (ESG) performance moderated by green intellectual capital (GIC). The financing of ESG activities according to tax accounting, green accounting, and carbon accounting. This study uses primary data obtained from respondents to questionnaire answers representing public companies (listed on the Indonesia Stock Exchange (IDX)). The researcher sent questionnaires via company email or email to officials/employees who meet the requirements as respondents. GIC does not strengthen the TAC effect on ESG and CAC effect on ESG, and GIC strengthens the GAC effect on ESG.

Keywords. ESG, Tax Accounting, Green Accounting, Carbon Accounting, Green Intellectual Capital, Indonesia.

1. Introduction

Law and regulations (investment law, limited liability company law, regulation on corporate social responsibility (CSR), POJK-51) had regulated the implementation of ESG in Indonesia. ESG is often associated with cost. Companies that grow and develop need to maintain relationships with stakeholders, including nature, environment, and society, balance and avoid environmental damage, and build good relationships with communities, usually known as ESG (environmental, social, and governance). The company applies ESG principles through rules and policies involving environmental, social, and governance responsibility.

In responding to future challenges, accounting has a role in contributing to governance and transformation towards a sustainable social and economic environment [1]. Social responsibility

activities are known as donations or social activities. Accounting information was criticized for misleading decision-making parties and not showing the conduct of business operations related to social and environmental issues [2]. Disclosure of ESG implementation for stakeholders is necessary as a form of corporate responsibility. Many companies want to invest in intangible assets, not only in fixed assets or tangible assets [3]. Brand, goodwill, the competence of workers, technology, and relationship with shareholders are assets that companies must have to increase their performance. Investing in intangible assets is one of the factors for companies to win the market [4].

There are still many companies that have not implemented ESG because they regard ESG as a cost center. The ESG program does not provide financial results in the short term. However, the company will enjoy these results in the future. The company will gain the public's trust. The implementation of ESG is closely related to the issue of providing ESG funds, especially concerning tax treatment that regulates ESG. From the point of view of income tax, companies will usually choose a strategy so that all costs incurred for ESG activities can be charged as expenses or become a deduction from gross income. Meanwhile, from the point of view of value-added tax (VAT), companies usually choose a strategy so that the goods or services provided to ESG recipients (the public) are not subject to VAT. If it still has to be taxed, the company will try to keep the amount of minimum tax.

Previous research describes the practice of tax avoidance by using ESG practices, [5] explaining that the interest of stakeholders and shareholders will meet through tax avoidance. While [6] describe a complex relationship, namely that ESG activities and corporate tax avoidance can replace each other. The practice of tax avoidance will reduce the company's cash amount and can then be used to finance the company's ESG activities. The results of other studies show that there is no effect between tax avoidance practices and company ESG activities. The company prioritizes the ethical aspects of doing business. The implementation of ESG is closely related to the realization of the company's sustainability in the future [7]. Implementation of ESG will become a topic of discussion in this research.

Previous research [1] explained that accounting contributed to addressing governance challenges to facilitate the transition to a green environment and promote a sustainable society and economy. We must develop future research to explore the role of accounting in sustainable governance. Furthermore, a company's financial performance is negatively related to carbon emissions, meaning that an increase in the company's carbon emissions will reduce the company's financial performance [8]. Previous research explained that climate change is influenced by 4 (four) factors, namely: systemic and social, climate change transition, climate vulnerability, and future carbon accounting methods [9].

This research is comprehensive and adds other independent variables that can support environmental, social, and governance performance, namely tax accounting (TAC) following applicable tax provisions in Indonesia, green accounting (GAC), and carbon accounting (CAC) under the results of the KPMG study [10]. This study adds a moderating variable, namely Green Intellectual Capital (GIC), explaining the intangible assets owned by the company, including innovation, experience, ability, knowledge, and wisdom in the field of community and environmental protection. By the model, the companies can comply with environmental regulations, fulfill environmental responsibilities, increase awareness, and create added value [3].

The researcher raised this issue because there are complex problems related to accounting treatment. The accounting information received and used by the parties for decision-making that not reflect the actual situation. In addition to causing tax avoidance practices and reducing state revenues, the costs for ESG activities are in the calculation of the selling price of products or services ultimately borne by the consumer community. Thus, consumers become the party that must bear the cost of ESG, not the company.

Based on the explanation above, composing of this study is aimed to obtain empirical evidence and find out how the effect of tax accounting (TAC), green accounting (GAC), and carbon accounting (CAC) on the performance of the environmental, social, and governance (ESG) that moderated by green intellectual capital (GIC). This study will use a sample of public companies through a survey method by sending a questionnaire via email.

2. Literature Review

Institutional theory, legitimacy theory, and stakeholder theory are the grand theory in this study. The institutional theory explains that environmental pressures will lead organizations to institutionalization. That will be adopted and accepted as an organizational way of thinking. Legitimacy theory explains that every company activity must pay attention to the values, norms, and provisions of society, and must be well received by all parties, both internal and external parties [11] [12]. Previous research explained that companies increase their legitimacy by adopting strategies that involve the environment and society [13]. Stakeholder theory explains that the company does not only pursue its interests, the company operates to provide benefits to all stakeholders [14]. Freeman introduced the concept of stakeholders and explained the behavior of companies in social performance [15] [16].

Many managers actions designed their accounting treatment to minimize taxable income through aggressive tax avoidance activities [17][18]. Tax aggressiveness is an activity to minimum taxable income through tax planning activities that can lead to tax evasion [19]. The public considers companies that carry out tax aggressiveness classified as irresponsible companies and unethical companies [17] [18]. The concept of social and environmental responsibility is one of the determining factors in supporting the success and survival of a company.

In this study, social and environmental responsibility will focus on ESG performance that supports the sustainability strategy. All businesses must be aware of the long-term interest of sustainability and contributing to the local community, also influencing the development of the surrounding community. ISO 26000 contains 7 (seven) aspects in the main issues of community involvement and development as indicators in this research, namely: community involvement in company activities; company programs in education and culture; the company's role in job creation and skills development; assisting communities in accessing and developing technology; the company's role in promoting prosperity and income generation; support public health and make social investments that build society [20].

Some literature and previous research explained the perspectives on green accounting. Green accounting is part of environmental accounting or also referred to as part of social-environmental accounting [21] [22] [23]. Then, another perspective states that green accounting is the same as sustainable accounting that integrates 3 (three) accounting sciences, namely: financial, social, and environmental, to produce accounting information for the parties in decision making

[24][25][26] [27]. Furthermore, green accounting is the process of identifying, measuring, recording, summarizing, reporting, and disclosing information regarding financial, social, and environmental-related transactions. Green accounting and other accounting processes roled to integrated to provide relevant accounting information for all parties in decision-making [2].

At the beginning of the accounting period, the company will calculate the potential for carbon sequestration. The potential carbon generated by a company will be calculated at the end of each accounting period. The mechanism of measurement, recognition, recording, and presentation related to carbon is carbon accounting[10]. The treatment of carbon accounting is related to the carbon sequestration capacity presented at the end of the period. Thus, there are two possibilities for recording, namely in a surplus or deficit condition of potential carbon sequestration [28].

Many companies have tried to invest not only in fixed assets or tangible assets but also in intangible assets [3]. Brand, goodwill, the competence of workers, technology, and relationship with shareholders are aspects that drive a lot of money. Investing in intangible assets is one of the factors for companies to win the market [4]. Investing in knowledge management will increase the intellectual capital of the company. Examples of intellectual capital are knowledge of technology, knowledge of labor management, and knowledge of the environment. Knowledge of environment management is known as green intellectual capital. The government has made regulations for companies to manage and improve the environment. Governments also have a responsibility to create awareness. It should be mandatory, but some companies still don't follow the rules and don't make reports to disclose such actions.

The research framework as presented in the figure below describes the effect of the independent variables (tax accounting (TAC), green accounting (GAC), and carbon accounting (CAC)) on the dependent variable (environmental, social, and governance performance (ESG)), with green intellectual capital (GIC) as a moderating variable.

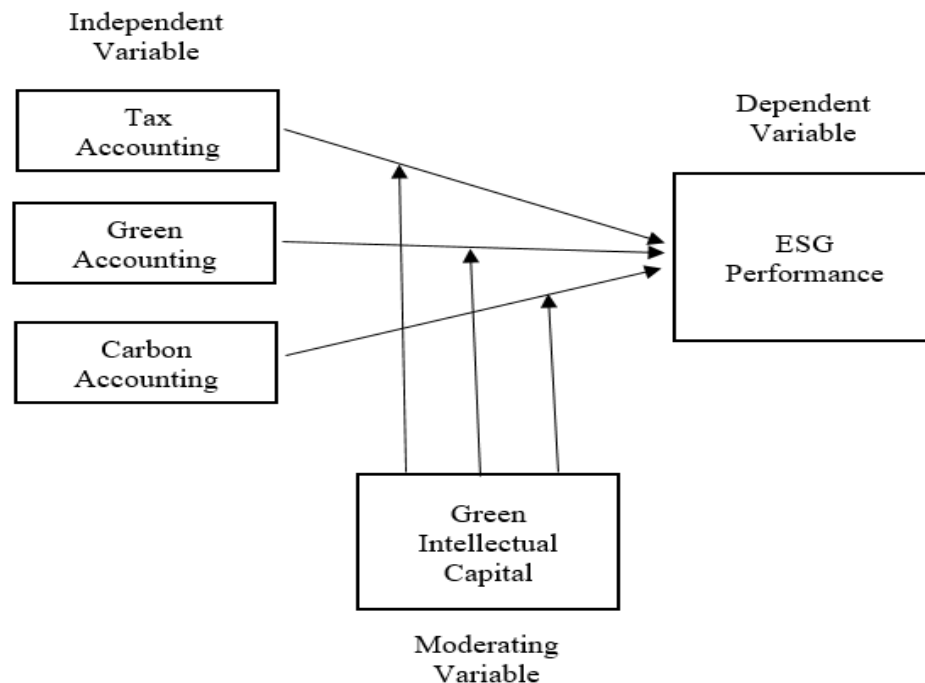


Figure 1. Research Framework

3. Research Hypothesis

Previous research on the relationship between ESG activity and taxes gave different results, among others showed a positive relationship between tax payments and ESG (CSR). The higher the ESG activity of a company, the lower the level of tax aggressiveness carried out by the company [17]. Based on this explanation, companies that carry out ESG obligations must reflect compliance in carrying out tax obligations following applicable tax provisions. If the company carries out tax avoidance practices, it will result in losses for the community, and the company is considered socially irresponsible and unethical. Previous research [29] [30] supports the statement of Lanis and Richardson [17]. Thus, the researchers developed a research hypothesis with the following formulation.

H1: Tax accounting (TAC) has a positive effect on environmental, social, and governance (ESG) performance.

Green accounting gives benefits for external parties in the assessment and decision-making process, both economic and non-economic decisions. Green accounting helps managers and employees in decision-making in operational activities to encourage companies that have good performance, have added value, and have an awareness of social and environmental responsibility [2]. Stakeholders use green accounting to fully understand accounting information, such as management quality in business management, social and environmental responsibility, and company activities in the long term to encourage sustainable business growth and corporate profits. Previous studies found that the relationship between green accounting has a positive effect on

business sustainability [31] [32]. Thus, the researchers developed a research hypothesis as formulated below.

H2: Green accounting (GAC) has a positive effect on ESG performance.

Climate change can pose risks and potentially reduce investment portfolios. Disclosure of carbon emissions has dire consequences for the increased cost of capital arising from providing information. Competitors can benefit from the company's disclosure of greenhouse gases (GHG) by pursuing marketing strategies that are nuanced back to nature [33]. Carbon accounting has been presented as the responsibility of the company for environmental damage due to the side effects of the activities carried out by the company, which can cause global warming or greenhouse gases [34]. Companies will calculate the potential for carbon sequestration at the beginning of the accounting period. Furthermore, the company will know the amount of potential carbon generated at the end of the period. The mechanism for measuring, acknowledging, recording, and presenting carbon is called Carbon Accounting [10]. Thus, the researchers developed a research hypothesis with the following formulation.

H3: Carbon accounting (CAC) has a positive effect on ESG performance.

Every company should know that carrying out social responsibility and having environmental awareness will bring many benefits to the company because it can strengthen the company's green intellectual capital. Companies that invest in green intellectual capital by having environmental awareness and carrying out social responsibility will be a good investment for companies in intangible assets [35]. Previous research explained that organizational reputation and green intellectual capital (GIC) have a positive and significant influence on the company's environmental performance [36]. If the company considers and protects the interests of shareholders and other stakeholders, considers environmental concerns, and manages its intellectual capital efficiently, then the company will gain a competitive advantage over its competitors and will ultimately result in higher profitability and higher financial growth [37]. Meanwhile, previous research found empirical data green intellectual capital has a positive effect on financial performance, and green intellectual capital has a better influence on market value than financial performance [38]. Furthermore, other studies found empirical evidence that tax avoidance has a negative effect and is significant on firm value [39]. Previous research explained that intellectual capital helps in mobilizing employees to achieve company goals [40] [41] because it can combine all knowledge in effective environmental management [41]. Green intellectual capital supports the company's sustainability through knowledge sharing related to technology, regulations, initiatives, and best practices. Green intellectual capital is a company's wealth in the form of intangible assets, such as a collection of knowledge, capabilities, environmental protection, and green innovation at the individual and organizational levels within the company [3]. In this research, green intellectual capital consists of 3 (three) components, namely green structural capital, green relational capital, and green human capital [35] [36] [38]. Thus, the research formulates the hypothesis below.

H4: Green intellectual capital (GIC) strengthens the effect of tax accounting (TAC) on ESG performance.

H5: Green intellectual capital (GIC) strengthens the effect of green accounting (TAC) on ESG performance.

H6: Green intellectual capital (GIC) strengthens the effect of carbon accounting (CAC) on ESG performance.

4. Research Methods

Research Design

The research method for processing and analyzing data or information in this research is the descriptive quantitative and causal method, which is one type of research that aims to explain the facts and characteristics of the research population. The descriptive quantitative method can explain the role of the research variables. How of TAC, GAC, and CAC affect ESG performance, and how of the moderating variable (GIC) on the effect of TAC, GAC, and CAC on ESG performance. Researchers used data collection techniques through observation and distributing questionnaires to respondents via email. Public companies (listed on the Indonesia Stock Exchange) are the unit of analysis used in this study. Analysis of this research using a multiple regression model to predict the effect of independent variables (TAC, GAC, and CAC) on the dependent variable (ESG performance) moderated by GIC.

Definition and Measurement of Operational Variables

Dependent Variable (ESG Performance)

The dependent variable is ESG Performance (performance of environmental, social, and governance) measured with ISO 26000 standard (international guideline on social and environmental responsibility) [20]. Based on the concept of ISO 26000, the implementation of ESG must integrate with all organizational activities covering 7 (seven) main issues, namely: organizational governance, human rights, labor practices, environment, fair operating practices, consumer issues, community involvement, and development.

Independent Variable (TAC, GAC, and CAC)

The independent variables in this study consisted of 3 (three) variables:

a. Tax Accounting (TAC)

Researchers use the indicators below to measure tax accounting [43][43][44][45][46][47][48][49].

- Gross income deduction (deductible expense);
- Deductible expense with requirements;
- Allocation of retained earnings or excluding gross income deduction (non deductible expense);

- Tax credit with conditions (tax credit); and

- Emissions tax (carbon tax).

b. Green Accounting (GAC)

Researchers use the indicators below to measure green accounting treatment according to the elements in the Green Accounting Report or Green Financial Report [2].

- Environmental Assets;
- Investment on Social and Environmental;
- Contingent Social and Environmental Obligations;

- Social Responsibility Donations; and
- Social and Environmental Costs.

c. Carbon Accounting (CAC)

Researchers use the indicators below to measure carbon accounting treatment [10].

- Estimation of Carbon Sequestration Potential;
- Estimation of Producer Potential of Carbon Issuers;
- Income on the Surplus Potential of Carbon Sequestration; and
- Burden of the Carbon Sequestration Potential Deficit.

The moderating variable used in this study is "Green Intellectual Capital" or GIC for short.

Researchers use the indicators below to measure GIC [3].

- a. Green Relational Capital (GRC);
- b. Green Structural Capital (GSC); and
- c. Green Human Capital (GHC).

Method of Collecting Data

Researchers used the purposive sampling method in this study, namely the selection of samples using criteria as follows:

- a. Public companies during the implementation of the questionnaire to respondents as company representatives;
- b. Respondents who filled out the questionnaire were finance director/finance manager/tax manager/1 (one) senior employee in finance/tax division;
- c. Respondents have filled in the required information and have answered all the questions listed in the questionnaire;
- d. Respondents have returned the questionnaire; and
- e. Complete data available in accordance with the variables studied.

This research uses primary data sourced from questionnaire answers from respondents who represent public companies. Researchers send questionnaires via company email or email to officials employees who meet the requirements as respondents. Questionnaire questions submitted to respondents must be clear and easily understood by the respondents. Respondents will send answers to the questionnaire by respondent to the researcher's email. The questionnaire method in this study used a closed question method, and the indicators for each variable are explained in the questions questionnaire so the researcher will get the primary data. The research data will be analyzed using relevant statistical tests to test the hypothesis. While the technique of measuring the answers to the questionnaire used a Likert scale technique (scale 1 to 7).

Data Analysis Method

Researchers used the Partial Least Square (PLS) method in analyzing research data. PLS method is a more precise Structural Equation Modeling (SEM) solution than other SEM techniques. The PLS method is a simple research data analysis because it is not affected by the normality of the data and the problem of multicollinearity between independent variables [50]. PLS can explain the relationship between latent variables (prediction) and confirm the theory.

Analysis of the data used the multiple linear regression analysis methods with the help of SMART PLS software to determine the dependence of a dependent variable on one or more

independent variables. The analysis can also predict the direction of the relationship and measure the degree of the relationship between variables. The equation model in this study explains the influence between variables with the formula below.

$$ESG = \beta_0 + \beta_1TAC + \beta_2GAC + \beta_3CAC + \beta_4TAC*GIC + \beta_5GAC*GIC + \beta_6CAC*GIC + \varepsilon$$

Description:

ESG = Environmental, social and governance performance;

TAC = Tax accounting;

GAC = Green accounting;

CAC = Carbon accounting;

GIC = Green intellectual capital;

* = Moderation effect;

ε = Error.

5. Research Result & Discussions

Description of Data

Data collection techniques to obtain research data from answers to questionnaires from the finance director/financial manager/tax manager/financial supervisor/tax supervisor/employee/senior finance or senior tax. The questionnaire was submitted through electronic media using a google form to make it easier to fill out, collect, and return the questionnaire. The number of answers to the questionnaire received by the researcher through the google form media was 160 questionnaires.

Table 1. Respondent Profile

	Respondent	%age		Respondent	%age
Gender			Work Experience		
Male	110	68.8%	5-10 years	37	23.1%
Female	50	31.2%	11-15 years	40	25.0%
Age			16-20 years	42	26.3%
30-35 years	20	12.5%	> 20 years	41	25.6%
36-40 years	17	10.6%	Current Education		
41-45 years	43	26.9%	Bachelor Degree	53	33.1%
> 45 years	80	50.0%	Master Degree	97	60.6%
Business Domicile			Doctoral Degree	10	6.3%
Java	136	85.0%	Omzet		
Outside Java	44	15.0%	Less 10 Trillion	59	28.3%
Job Title			10 to 50 T	82	42.1%
Director of Finance	21	5.0%	Above 50 Trillion	19	29.6%
Finance/Tax Manager	55	56.3%	Company Business Sector		
Finance/Tax Supervisor	37	25.6%	Finance	28	17.5%
Senior Employee	37	13.1%	Mining	24	15.0%
			Infrastructure	19	11.9%
			Basic & Chemical Industry	18	11.3%
			Agriculture	17	10.6%
			Consumer Goods Industry	15	9.4%
			Other	39	24.3%

Source: questionnaires processed by researchers

Table 1 explains that the respondents in this study were 110 male respondents (68.8%) and 50 female respondents (31.2%). The majority of respondents are: above 45 years, 80 respondents (50%); 41-45 years, 43 respondents (26.9%); and 36-40 years were 17 respondents (10.6%). The company domicile is dominated in Java by 85% and outside Java by 15%. Respondents in this study mostly came from financial managers/tax managers by 56.3%. For the most tenure between 16-20 years, 42 respondents (26.3%). The last education of respondents more from master's education (60.6%). The domination of respondents came from companies with total sales of 10-50 trillion Rupiah, namely 82 companies (42.1%). The business fields of respondent companies come from the banking sector, namely 28 companies (17.5%). Thus, the respondent profile has the following general characteristics: the dominants of respondents in this study were men over 45 years old, the majority of respondents work in companies domiciled on the island of Java, most of the respondents have a working period of 16-20 years, and most of the respondents' last education was a master's degree.

Table 2. Descriptive Statistics

Description	ESG	TAC	GAC	CAC	GIC
Mean	6.647	6.482	6.370	4.464	6.520
Median	7.000	7.000	7.000	4.000	7.000
Standard Deviation	0.670	1.051	1.074	1.250	0.927
Minimum	3.000	1.000	1.000	1.000	2.000
Maximum	7.000	7.000	7.000	7.000	7.000

Source: Output SmartPLS 3.2.9

Table 2 above explains that the descriptive data of the ESG variable has a minimum value (3), maximum value (7), mean (6.65), and standard deviation (0.67). The ESG variable has data with a small standard error because the mean value of the ESG variable is greater than the standard deviation (mean value as a representation of the research data). Furthermore, the data from the TAC variable has a minimum value (1), maximum value (7), mean (6.48), and standard deviation (1.05). The TAC variable has good data because it has a small standard error (the mean value of the TAC variable is greater than the standard deviation). The GAC variable has data with minimum value (1), maximum value (7), mean (6.37), and standard deviation (1.07). The GAC variable has data with a small error because the mean value of the GAC variable is greater than the standard deviation. The CAC variable has data with minimum value (1), maximum value (7), mean (4.46), and standard deviation (1.25). From the results of the descriptive data, the data from the CAC variable has a small standard error because the mean value is greater than the standard deviation. Furthermore, the GIC variable has a minimum value (2), maximum value (7), mean (6.52), and standard deviation (0.93). Thus, the GIC variable has a small standard error because the mean value is greater than the standard deviation.

Analysis of Research Results

A validity test is a tool to analyze good indicators in measuring each variable. a high factor loading value indicates an indicator can explain the measurement of a variable. All questions show the value of outer loadings more than 0.7 except for questions TAC5 and TAC6. An indicator

fulfills the convergent validity test if the value of outer loadings is more than 0.50 (sample data exceeds 100) [51]. Thus, the researcher deleted the TAC5 and TAC6 questions because the outer loading value was less than 0.50. Furthermore, after TAC 5 and TAC 6 were removed from the list of questions, this study finally contained 48 questions and all indicators were declared to meet convergent validity, namely the value of outer loadings had a value of more than 0.50.

Table 3. Construct Reliability and Validity

Variable	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extrated (AVE)
ESG	0.960	0.963	0.964	0.631
TAC	0.935	0.941	0.947	0.691
GAC	0.966	0.975	0.971	0.775
CAC	0.985	1.026	0.986	0.900
GIC	0.978	0.978	0.982	0.900

Source: Output SmartPLS 3.2.9

Table 3 explained that the AVE values for ESG, TAC, GAC, CAC, and GIC are 0.631, 0.691, 0.775, 0.900, and 0.900. All constructs (variables) have discriminant validity values of more than 0.50. Thus, all variables in this study have fulfilled the criteria of discriminant validity and reliability [51]. Table 3 also presents the composite reliability values for the variables ESG, TAC, GAC, CAC, and GIC of 0.964, 0.947, 0.971, 0.986, and 0.982. All variables are declared reliable because of the composite reliability value of more than 0.70 [51]. Furthermore, table 3 also presents Cronbach's alpha values for the variables ESG, TAC, GAC, CAC, and GIC of 0.960, 0.935, 0.966, 0.985, and 0.978. These data explain that all variables are reliable because the value of Cronbach's alpha is more than 0.60 [51].

Based on the result of output SmartPLS 3.2.9 shows that the coefficient of determination (R²) is 78.9% and R² Adjusted is 77.9%, meaning that the influence of the independent variables (TAC, GAC, and CAC) and the moderating variable (GIC) in explaining the dependent variable (ESG) is equal to 78.9% or 21.1% influenced by other variables outside this study.

Table 4. Hypothesis Test – GIC as Mediator

Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistic	P-Values	Remarks
TAC → ESG	0.298	0.293	0.123	2.416	0.016	Accepted
GAC → ESG	0.284	0.287	0.124	2.286	0.023	Accepted
CAC → ESG	-0.028	-0.026	0.049	0.573	0.567	Rejected
TAC → GIC ESG → GIC	-0.143	-0.125	0.136	1.054	0.292	Rejected

GAC ESG	→GIC	0.264	0.239	0.123	2.142	0.033	Accepted
CAC ESG	→GIC	0.008	0.020	0.083	0.101	0.919	Rejected

Source: Output SmartPLS 3.2.9

a. Effect of Tax Accounting (TAC) on Economic, Social, & Governance (ESG)

Based on the data in table 4, the effect of TAC on ESG shows a t-statistic of 2.416, with a probability value of 0.016 (P-value <0.05). Thus, the first hypothesis (H1) is accepted. This study proves that TAC has a significant positive effect on ESG.

b. Effect of Green Accounting (GAC) on Economic, Social, & Governance (ESG)

Based on the data in table 4, the effect of GAC on ESG shows a t-statistic of 2.286, with a probability value of 0.023 (P-value <0.05). The second hypothesis (H2) is accepted. This study proves that GAC had a significant positive effect on ESG.

c. Effect of Carbon Accounting (CAC) on Economic, Social, & Governance (ESG)

Based on the data in table 4, the effect of CAC on ESG shows a t-statistic of 0.573, with a probability value of 0.567 (P-value >0.05), or the significance level is greater than 5%. The third hypothesis (H3) is rejected (H0 accepted).

d. Effect of Tax Accounting (TAC) on Economic, Social, & Governance (ESG) moderated by Green Intellectual Capital (GIC)

Table 4 explained that GIC as moderating variable shows a t-statistic of 1.054 and a P-value is 0.292 (P-value >0.05). Thus, the fourth hypothesis (H4) is rejected (H0 accepted). This study failed to prove that GIC strengthens the effect of TAC on ESG or GIC is not a mediator variable between TAC and ESG.

e. Effect of Green Accounting (GAC) on Economic, Social, & Governance (ESG) moderated by Green Intellectual Capital (GIC)

Table 4 shows that GIC has a t-statistic of 2.142 and a P-value is 0.033 (P-value <0.05). Thus, the fifth hypothesis (H5) is accepted (H0 rejected). This study can prove that GIC strengthens the effect of GAC on ESG or GIC is a mediator variable between GAC and ESG.

f. Effect of Carbon Accounting (CAC) on Economic, Social, & Governance (ESG) moderated by Green Intellectual Capital (GIC)

Table 4 shows that GIC variable has a t-statistic of 0.101 and P-value is 0.919 (P-value >0.05). Thus, the sixth hypothesis (H6) is rejected (H0 accepted). This study failed to prove that GIC strengthens the effect of CAC on ESG or GIC is not a mediator variable between CAC and ESG.

Discussion

Effect of Tax Accounting (TAC) on Economic, Social, & Governance (ESG)

Based on a test of the hypothesis found that TAC had a significant positive effect on ESG. This result proves that good tax accounting will improve ESG performance. It explains that the implementation of tax obligations will support ESG performance. The higher the level of implementation of ESG activities will support sustainability. The results of this study follow the previous studies [17] [18]. Tax obligations have a positive effect on CSR activities. Companies that

carry out ESG obligations should also pay taxes according to the applicable tax provisions. If the company carries out tax avoidance practices, it will result in losses for the community and is considered a socially irresponsible activity. This study is also in accordance with previous studies [29] [30].

Effect of Green Accounting (GAC) on Economic, Social, & Governance (ESG)

The results of hypothesis testing explain that GAC has a significant positive effect on ESG. The findings show that GAC will improve ESG performance and support previous research. Green accounting will provide information for external parties in decision-making and encourage companies to increase value and performance. Green accounting can support increased management awareness and related parties' concern for social and environmental responsibility [2]. Thus, green accounting will affect sustainable business [31] [32]. Stakeholders utilize green accounting information to determine the quality of management in managing that supports ESG for sustainable business growth and achieving long-term corporate profits.

Effect of Carbon Accounting (CAC) on Economic, Social, & Governance (ESG)

The results of hypothesis testing explain that CAC does not affect ESG. These results prove that companies in Indonesia that carry out carbon measurement, recognition, recording, and handling mechanisms do not affect the company's ESG performance. This finding contradicts previous research [10] [33] [52] because most companies in Indonesia have not implemented carbon accounting, have no obligation to disclose carbon emission production, and have no imposition of sanctions or taxes on carbon emissions. Thus, CAC does not affect ESG performance.

Effect of Tax Accounting (TAC) on Economic, Social, & Governance (ESG) moderated by Green Intellectual Capital (GIC)

The results showed that GIC did not strengthen the effect of TAC on ESG or that GIC was not a mediator variable between TAC and ESG. The result of this research is different from previous studies (intellectual capital has a positive effect on the company's financial performance, including taxes, and intellectual capital has a direct influence on market value) [38][39]. The current tax regulations in Indonesia do not support the company's ESG performance.

Effect of Green Accounting (GAC) on Economic, Social, & Governance (ESG) moderated by Green Intellectual Capital (GIC)

The results showed that GIC strengthens the effect of GAC on ESG or that GIC is a mediator variable between GAC and ESG. The results of this study support previous research. GIC will support environmental awareness and corporate social responsibility. Thus, GIC will support investment in intangible assets: knowledge, capabilities, environment protection, and green innovation [35].

Effect of Carbon Accounting (CAC) on Economic, Social, & Governance (ESG) moderated by Green Intellectual Capital (GIC)

The results showed that GIC did not strengthen the effect of CAC on ESG or that GIC was not a mediator variable between CAC and ESG. The results of this study do not support previous

studies [40]. The findings of this study provide evidence that the relationship between CAC and ESG is not affected by GIC but by other variables, such as regulations, law enforcement, or incentives for business actors who have implemented CAC well.

6. Conclusion

This study presents empirical evidence regarding the effect of independent variables, namely tax accounting (TAC), green accounting (GAC), and carbon accounting (CAC), on environmental, social, and governance (ESG) performance moderated by green intellectual capital (GIC). This study explains that TAC and GAC have a significant positive effect on ESG; CAC does not affect ESG; GIC does not strengthen the relationship between CAC on ESG and TAC on ESG; GIC strengthens the relationship between GAC on ESG. The application of CAC in Indonesia needs to be applied in general to all companies in Indonesia through tax regulations and other regulations governing carbon emission incentives or sanctions. These regulations can support ESG performance and create a sustainable company. Thus, GIC is a moderating variable in this study only strengthens the influence between GAC and ESG. The government needs to take the initiative through regulation so that GIC can influence the relationship between TAC and CAC with ESG.

This research implies that companies are encouraged to adjust their bookkeeping activities so that ESG activities carried out by the company or which are the company's obligations can be presented in the financial statements. Companies that are economically, socially, and environmentally responsible or implement ESG will be more sustainable because they are friendly with nature and the surrounding community.

Another implication for the government is to provide input to rearrange regulations that can support the creation of good ESG performance through carbon emission limits, incentives to companies that help protect the environment and synergize all parties in maintaining business continuity and living a more comfortable life.

The research sample comes from the answers of the respondents who represent public companies in Indonesia. Directors/managers/senior employees are respondents who represent the company. This research encourages further research to explore information from several experts or authorities, such as collecting data for company value creation. This study considers economic, social, and environmental values sourced from primary data (questionnaire answers). Future research can use secondary data sourced from annual reports and sustainability reports to confirm the results of this research and for development research.

References

- [1] Rinaldi, L. (2019). Accounting for sustainability governance: The enabling role of social and environmental accountability research.
- [2] Lako, A. (2018). *Akuntansi Hijau, Isu, Teori, dan Aplikasi*. Jakarta: Salemba Empat.
- [3] Chen, Y. S. (2008). The positive effect of green intellectual capital on competitive advantages of firms. *Journal of business ethics*, 77(3), 271-286.
- [4] Chang, C. H., & Chen, Y. S. (2012). The determinants of green intellectual capital. *Management decision*.
- [5] Dowling, G. R. (2014). The curious case of corporate tax avoidance: Is it socially irresponsible? *Journal of Business Ethics*, 124(1), 173-184.

- [6] Davis, A. K., Guenther, D. A., Krull, L. K., & Williams, B. M. (2016). Do socially responsible firms pay more taxes?. *The accounting review*, 91(1), 47-68.
- [7] Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The accounting review*, 87(3), 761-796.
- [8] Ababneh, A. The Impact of Carbon Accounting on Corporate Financial Performance: Evidence from the Energy Sector in Jordan.
- [9] Gibassier, D., Michelon, G., & Cartel, M. (2020). The future of carbon accounting research: “we’ve pissed mother nature off, big time”. *Sustainability Accounting, Management and Policy Journal*
- [10] KPMG, L. (2008). Accounting for carbon—The impact of carbon trading on financial statements. RRD-106477.
- [11] Powell, W. W., & DiMaggio, P. J. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 48(2), 147-160.
- [12] Deegan, C. (2009). *Financial accounting theory* McGraw Hill. North Ryde, NSW, Australia.
- [13] Guthrie, J., & Parker, L. D. (1989). Corporate social reporting: a rebuttal of legitimacy theory. *Accounting and business research*, 19(76), 343-352.
- [14] Chariri, A., & Ghozali, I. (2007). *Teori akuntansi*. Semarang: Badan Penerbit Universitas Diponegoro.
- [15] Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. B. The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, 4(4), 409-421.
- [16] Leung, Z. B. G., & Philomena, L. (2013). An empirical analysis of the determinants of greenhouse gas voluntary disclosure in Australia. *Account. Financ. Res*, 2.
- [17] Lanis, R., & Richardson, G. (2011). The effect of board of director composition on corporate tax aggressiveness. *Journal of Accounting and Public Policy*, 30(1), 50-70.
- [18] Lanis, R., & Richardson, G. (2012). Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy*, 31(1), 86-108.
- [19] Chen, S., Chen, X., Cheng, Q dan Shevlin, T. (2010). “Are Family Firms More Tax Aggressive than Non-Family Firms?”. *Journal of Financial Economics*. Vol. 95, Hal. 41-61.
- [20] Chakroun, S., Salhi, B., Amar, A. B., & Jarboui, A. (2019). The impact of ISO 26000 social responsibility standard adoption on firm financial performance. *Management Research Review*.
- [21] Shapiro, K., Stoughton, M., Graff, R., & Feng, L. (2000). *Healthy hospitals: environmental improvements through environmental accounting*. Boston, MA: Tellus Institute.
- [22] Ferreira, C. (2004). Environmental accounting: the Portuguese case. *Management of Environmental Quality: An International Journal*.
- [23] Gray, R., & Laughlin, R. (2012). It was 20 years ago today: Sgt Pepper, accounting, auditing & accountability journal, green accounting and the blue meanies. *Accounting, Auditing & Accountability Journal*, 25(2), 228-255.
- [24] Schaltegger, S., Bennett, M., & Burritt, R. (2006). Sustainability accounting and reporting: development, linkages and reflection. An introduction. In *Sustainability accounting and reporting* (pp. 1-33). Springer, Dordrecht.
- [25] McHugh, J. (2008). Accountants have key role in sustainability. *Public Finance*.

- [26]Lako, A. (2011). Dekonstruksi CSR dan Reformasi Paradigma Bisnis dan Akuntansi. *Jakarta: Erlangga.*
- [27]Bebbington, J. (2014). *Sustainability accounting and accountability.* Routledge.
- [28]Razak, A. (2008). Kajian yuridis carbon trade dalam penyelesaian efek rumah kaca. Program Studi Manajemen Konservasi Sumber Daya Alam dan Lingkungan, UGM Yogyakarta. Available at <http://heterometrus.files.wordpress.com>.
- [29]Liu, H., & Lee, H. A. (2019). The effect of corporate social responsibility on earnings management and tax avoidance in Chinese listed companies. *International Journal of Accounting & Information Management.*
- [30]Mohanadas, N. D., Salim, A. S. A., & Pheng, L. K. (2019). CSR and tax aggressiveness of Malaysian listed companies: evidence from an emerging economy. *Social Responsibility Journal.*
- [31]Rounaghi, M. M. (2019). Economic analysis of using green accounting and environmental accounting to identify environmental costs and sustainability indicators. *International Journal of Ethics and Systems.*
- [32]Ahmed, E. M. (2020). Modelling green productivity spillover effects on sustainability. *World Journal of Science, Technology and Sustainable Development.*
- [33]Matsumura et al., 2014
- [34]Taurisianti, M. M., & Kurniawati, E. P. (2014). Perlakuan Akuntansi Karbon di Indonesia. *Jurnal Ekonomi dan Bisnis, 17(2), 81-105.*
- [35]Sudibyi, Y., & Sutanto, K.(2020). Environmental consciousness and corporate social responsibility as drivers of green intellectual capital. *International Journal of Innovation, Creativity and Change, 13(4), 716-726.*
- [36]Yadiati, W. (2019). The role of green intellectual capital and organizational reputation in influencing environmental performance. *670216917.*
- [37]Chaudhry, N. I., Bilal, A., Awan, M. U., & Bashir, A. (2016). The role of environmental consciousness, green intellectual capital management and competitive advantage on financial performance of the firms: an evidence from manufacturing sector of Pakistan. *Journal of Quality and Technology Management, 13(II), 51-70.*
- [38]Sudibya, D. C. N. A., & Restuti, M. M. D. (2014). Pengaruh modal intelektual terhadap nilai perusahaan dengan kinerja keuangan sebagai variabel intervening. *Benefit: Jurnal Manajemen dan Bisnis, 18(1), 14-29.*
- [39]Safitri, I. L. K. (2016). Pengaruh Rasio Keuangan Terhadap Pertumbuhan Laba Pada Perusahaan Manufaktur Sektor Industri Konsumsi Yang Terdaftar Di Bursa Efek Indonesia (Studi Kasus Pada Perusahaan Kalbe Farma Tbk Periode 2007-2014). *Jurnal Akuntansi dan Bisnis: Jurnal Program Studi Akuntansi, 2(2).*
- [40]Hull, C. E., & Rothenberg, S. (2008). Firm performance: The interactions of corporate social performance with innovation and industry differentiation. *Strategic management journal, 29(7), 781-789.*
- [41]Boiral, O. (2002). Tacit knowledge and environmental management. *Long range planning, 35(3), 291-317.*

- [42]The Republic of Indonesia. (2008). Law Number 36 of 2008 concerning the Fourth Amendment to Law Number 7 of 1983 concerning Income Tax. State Gazette of the Republic of Indonesia Number 133. State Secretariat. Jakarta.
- [43]The Republic of Indonesia. (2010). Government Regulation Number 93 of 2010 concerning National Disaster Countermeasures Donation, Research and Development Donations, Donations of Educational Facilities, Sports Coaching Donations, and Development Costs The Subtractable Social Infrastructure of Gross Income. State Gazette of the Republic of Indonesia Number 160. State Secretariat. Jakarta.
- [44]The Republic of Indonesia. (2011). Regulation of the Minister of Finance Number 76/PMK.03/2011 concerning Procedures for Recording and Reporting National Disaster Response Donation, Research and Development Donation, Educational Facility Donation, Sports Fostering Donation, and Social Infrastructure Construction Costs Deductible from Gross Income. State Gazette of the Republic of Indonesia Number 205. State Secretariat. Jakarta.
- [45]The Republic of Indonesia. (2020). Regulation of the Minister of State-Owned Enterprises of the Republic of Indonesia Number PER-02/MBU/04/2020 of 2020 concerning the Third Amendment to the Regulation of the Minister of State-Owned Enterprises Number PER-09/MBU/07/2015 concerning Partnership Program and Community Development Program of the State Owned Enterprises. State Gazette of the Republic of Indonesia Number 341. State Secretariat. Jakarta.
- [46]The Republic of Indonesia. (2006). Law Number 11 of 2006 concerning the Governing of Aceh. State Gazette of the Republic of Indonesia Number 62. State Secretariat. Jakarta.
- [47]The Republic of Indonesia. (2019). Presidential Regulation Number 55 of 2019 concerning the Acceleration of the Battery-based Electric Vehicle Program for Road Transportation. State Gazette of the Republic of Indonesia Number 146. State Secretariat. Jakarta.
- [48]The Republic of Indonesia. (2019). Government Regulation Number 73 of 2019 concerning Taxable Goods Classified as Luxurious in the Form of Motor Vehicles that are Object to Sales Tax on Luxury Goods. State Gazette of the Republic of Indonesia Number 189. State Secretariat. Jakarta.
- [49]The Republic of Indonesia. (2020). Regulation of the Minister of Home Affairs Number 8 of 2020 concerning the Basic Calculation of the Imposition of Motor Vehicle Taxes and Transfer Fees for Motor Vehicles in 2020. State Gazette of the Republic of Indonesia Number 74. State Secretariat. Jakarta.
- [50]Ghozali, I. & Latan, H. (2015). *Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0*. Semarang: Badan Penerbit Universitas Diponegoro.
- [51]Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. saGe publications.
- [52]Ganesan, A. L., Schwietzke, S., Poulter, B., Arnold, T., Lan, X., Rigby, M., ... & Manning, M. R. (2019). Advancing scientific understanding of the global methane budget in support of the Paris Agreement. *Global Biogeochemical Cycles*, 33(12), 1475-1512.