

Green Intellectual Capital, Surplus Free Cash Flow, and Audit Quality: The Moderating Role of Busy Commissioners

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ABSTRACT

This study examines the effect of Green Intellectual Capital (GIC) and Surplus Free Cash Flow (SFCF) on audit quality, as well as the moderating role of busy commissioners. Using a quantitative explanatory design, this study analyzes 156 firm-year observations from non-financial companies listed on the Indonesia Stock Exchange during 2019–2024. Audit quality is measured using a KAZNIC-based composite score, while GIC is measured through content analysis of annual and sustainability reports. The data are analyzed using multiple linear regression and Moderated Regression Analysis (MRA). The results show mixed evidence. GIC has a positive but insignificant effect on audit quality, indicating that green knowledge resources do not automatically improve audit outcomes. SFCF has a positive and significant effect, suggesting that firms with higher surplus cash require stronger external monitoring. Busy commissioners show a positive direct association with audit quality. However, the moderating effects are not uniformly supportive. Busy commissioners do not significantly strengthen the GIC–audit quality relationship, while they negatively moderate the SFCF–audit quality relationship. These findings suggest that commissioner busyness may provide governance benefits, but excessive commitments may weaken monitoring effectiveness in agency-sensitive financial conditions.

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1. INTRODUCTION

Growing environmental concerns have encouraged firms to integrate sustainability principles into their business strategies, reporting systems, and corporate governance practices. In this context, audit quality becomes increasingly important because stakeholders require credible

assurance that corporate information reflects the firm's actual financial condition and governance quality. Audit quality is commonly defined as the probability that auditors are able to detect material misstatements and report them independently [1]. High-quality audits reduce information asymmetry, strengthen financial statement credibility, and serve as an external

monitoring mechanism in corporate governance [2]-[4].

One factor that may influence audit quality is Green Intellectual Capital (GIC). GIC refers to intangible knowledge-based resources related to environmental management, including green human capital, green structural capital, and green relational capital [5]-[8]. From the Resource-Based View, firms with stronger knowledge, systems, routines, and stakeholder relationships may develop better reporting capabilities and stronger environmental accountability [5], [8]. However, GIC does not automatically guarantee higher audit quality. A more cautious argument is that firms with higher GIC tend to have more structured information systems, better sustainability-related documentation, and stronger transparency incentives, which may increase the demand for competent and independent audit services.

In addition to GIC, Surplus Free Cash Flow (SFCF) is relevant in explaining audit quality. Free cash flow reflects the availability of cash resources that may increase financial flexibility but may also create agency-related monitoring concerns [9], [10]. Agency theory suggests that excess cash can create opportunities for opportunistic behavior, inefficient investment, or expropriation, particularly in firms with concentrated ownership structures [10], [11]. Under such conditions, audit quality becomes a critical governance mechanism because external auditors help verify financial reporting, constrain opportunistic behavior, and enhance the credibility of financial statements.

Audit quality is especially important in the Indonesian corporate governance setting because Indonesia adopts a two-tier board system, in which the board of commissioners performs a supervisory role while the board of directors is responsible for executive decision-making. This institutional structure makes the monitoring role of the board of commissioners highly relevant to the audit process. The board of commissioners may influence audit quality through its oversight of financial reporting, audit

committee effectiveness, auditor selection, and the demand for higher audit assurance.

One board characteristic that may affect audit quality is the presence of busy commissioners. Busy commissioners are commissioners who hold multiple board positions across firms. Based on board network literature, multiple directorships may provide broader networks, richer information access, and exposure to governance practices [12]-[14]. Nevertheless, the literature also highlights a potential busyness effect, where excessive board commitments reduce directors' time, attention, and monitoring effectiveness [15]-[19]. Thus, busy commissioners may either strengthen or weaken the relationship between firm characteristics and audit quality, depending on whether the benefits of network resources outweigh the costs of limited attention.

This study examines the effect of GIC and SFCF on audit quality and investigates whether busy commissioners moderate these relationships. The study contributes by integrating sustainability-related knowledge resources, agency-related cash flow conditions, and commissioner busyness into a single audit quality framework. The study also focuses on Indonesia's two-tier board system, where commissioners have a distinct supervisory function. Finally, audit quality is measured using a KAZNIC-based composite score to capture broader audit quality attributes than a single proxy such as Big Four affiliation alone.

2. LITERATURE REVIEW

2.1 Agency Theory

Agency Theory describes the contractual relationship between principals, who provide capital and own the firm, and agents, who are entrusted with the authority to manage corporate resources and make decisions on the principals' behalf [10], [20], [21]. This separation between ownership and control may create agency problems because managers and shareholders do not always have aligned interests and

may possess unequal access to information.

Within the corporate governance literature, agency conflicts are generally classified into two categories. Type I agency conflict arises between shareholders and managers, particularly when managers pursue personal interests that are inconsistent with shareholder wealth maximization. In contrast, Type II agency conflict occurs between controlling and minority shareholders when dominant owners use their influence to obtain private benefits at the expense of less powerful shareholders.

Type II agency conflict is especially relevant in emerging markets, where corporate ownership is frequently concentrated among families, business groups, governments, or other dominant shareholders [11], [22], [23]. Under such ownership structures, controlling shareholders may exercise substantial influence over managerial decisions and financial reporting practices. Consequently, effective governance and external monitoring mechanisms, including high-quality auditing, are necessary to protect minority shareholders and constrain opportunistic behavior.

In a business environment with concentrated ownership, controlling shareholders may have substantial authority in determining corporate policies and resource allocation. This condition may create incentives for expropriation that harm minority shareholders, such as tunneling, overinvestment, and the use of surplus free cash flow for activities that do not contribute to long-term firm value. Within this framework, audit quality functions as an external monitoring mechanism that helps reduce the risk of expropriation and improve the credibility of financial reporting.

2.2 Resource-Based View

The Resource-Based View (RBV) posits that firms can develop a sustainable competitive advantage by possessing and

effectively utilizing resources that are valuable, rare, difficult to imitate, and not readily substitutable [5], [8]. Within this theoretical perspective, Green Intellectual Capital (GIC) reflects a set of knowledge-based resources associated with environmental sustainability. These resources comprise green human capital, green structural capital, and green relational capital [5]–[8].

In relation to audit quality, GIC may contribute to more effective financial reporting processes, greater transparency, and stronger corporate governance mechanisms. Employees' environmental expertise, organizational systems, and relationships with external stakeholders may support the preparation of more reliable and accountable information. Nevertheless, the contribution of GIC to audit quality is likely to depend on the extent to which environmental knowledge is institutionalized in formal procedures, supported by verifiable records, and incorporated into documentation that can be evaluated during the audit process.

2.3 Social Network Theory

Social Network Theory explains how social relationships and interorganizational connections influence access to information, resources, and decision-making processes [12]–[14]. Busy commissioners, particularly independent commissioners who hold board positions in several firms, may have broad cross-industry networks. These networks may provide access to best practices, strategic insights, and governance experience that strengthen the supervisory function of the board of commissioners. However, excessive board appointments may also reduce monitoring effectiveness due to limited time and attention [15]–[17].

2.4 Green Intellectual Capital

Green Intellectual Capital refers to environmentally oriented knowledge-based assets consisting of green human capital, green structural capital, and green relational capital [5]–[8]. Firms with stronger GIC are expected to have better

environmental knowledge, internal systems, reporting routines, and stakeholder engagement. Prior research suggests that green knowledge resources can improve environmental performance, sustainability disclosure, and carbon-related reporting practices [24]–[28]. In relation to audit quality, GIC may contribute to a better information environment because auditors rely on the reliability, completeness, and transparency of corporate information during the audit process.

2.5 *Surplus Free Cash Flow*

Surplus Free Cash Flow (SFCF) represents the excess cash retained by a company after fulfilling its operating requirements and financial obligations [9]. The availability of substantial surplus cash may enhance a firm's financial flexibility and capacity to fund future investments without relying heavily on external financing. Nevertheless, agency theory suggests that excessive discretionary cash can create opportunities for managers or controlling shareholders to allocate corporate resources in ways that do not necessarily maximize the interests of all shareholders [10], [11].

This condition may intensify agency conflicts, particularly between controlling and minority shareholders, because parties with greater decision-making authority may use the available cash for inefficient investments, private benefits, or other opportunistic purposes. Accordingly, a high-quality audit serves as an important external monitoring mechanism by strengthening oversight over financial reporting, limiting the misuse of corporate resources, and reducing the likelihood of opportunistic accounting practices and material misstatements.

2.6 *Audit Quality*

Audit quality generally refers to the auditor's ability to identify material misstatements in financial statements and willingness to disclose the identified problems through an appropriate audit

opinion or report [1]. It is influenced by several interrelated factors, including professional competence, independence, adherence to applicable auditing standards, the reputation of the public accounting firm, and consistency in the performance and reporting of audit procedures.

A high-quality audit can strengthen the reliability of financial information, reduce information asymmetry between corporate insiders and external stakeholders, and enhance users' confidence in the financial statements. It also contributes to the protection of minority shareholders by constraining opportunistic reporting and improving the effectiveness of corporate monitoring mechanisms [2]–[4].

In this study, audit quality is measured using an audit quality score developed on the basis of the KAZNIC approach. The composite measure incorporates multiple dimensions, including auditor competence, auditor independence, compliance with auditing standards, public accounting firm reputation, and consistency in audit reporting. Unlike a single indicator, such as affiliation with a Big Four accounting firm, the composite score is intended to provide a more comprehensive assessment of audit quality by capturing several relevant characteristics simultaneously.

2.7 *Research Framework and Hypotheses*

RBV argues that valuable, rare, inimitable, and non-substitutable resources can create sustainable competitive advantage [5], [8]. GIC fulfills the VRIN criteria because it combines employee competencies, internal systems, and external relationships that are oriented toward environmental sustainability. Firms with high GIC tend to have better governance, stronger information systems, and more transparent reporting practices. These conditions may improve audit quality because auditors can rely on a better

internal information environment and stronger corporate accountability.

H1: Green Intellectual Capital has a positive effect on audit quality.

SFCF provides financial flexibility for firms. However, in the context of agency theory, high SFCF may create opportunities for opportunistic behavior and resource misallocation [9]-[11]. To reduce this risk, strong monitoring mechanisms are required, including high-quality external audits. Firms with higher SFCF may face greater audit demand because auditors are expected to ensure that excess cash is used productively and reported transparently.

H2: Surplus Free Cash Flow has an effect on audit quality.

Based on board network literature, busy commissioners may have broad professional networks that provide access to strategic knowledge, governance practices, and relevant information [12]-[14]. These resources may strengthen the positive relationship between GIC and audit quality because the information and experience brought by busy commissioners can support the more effective implementation of GIC and improve audit-related monitoring.

H3: Busy commissioner moderates the effect of Green Intellectual Capital on audit quality.

When SFCF is high, the risk of resource misuse and agency conflict may increase. Busy commissioners may strengthen the monitoring of excess cash utilization through professional experience and external networks. However, the busyness effect may weaken this monitoring role when commissioners hold too many positions and have limited time to supervise the firm effectively.

H4: Busy commissioner moderates the effect of Surplus Free Cash Flow on audit quality.

3. METHODS

This study uses a quantitative explanatory research design to examine the relationship between GIC, SFCF, busy commissioner, and audit quality. An explanatory design is appropriate because the study aims to test theoretically developed hypotheses and explain the association among variables using statistical models. The research focuses on non-financial companies listed on the Indonesia Stock Exchange during the 2019-2024 period. Non-financial firms are selected because financial institutions have different reporting structures, regulatory requirements, and financial characteristics that may affect the measurement of cash flow, governance, and audit quality.

The research sample is determined through a purposive sampling procedure based on several predetermined criteria. Eligible firms must have been listed on the Indonesia Stock Exchange throughout the observation period, issued annual reports and/or sustainability reports, provided audited financial statements, and disclosed complete information for all variables included in the analysis. In addition, the firms must report information regarding the composition of independent commissioners and their concurrent board appointments. After applying these criteria and removing observations with incomplete data, the final sample comprises 156 firm-year observations.

Audit quality (AQ), which serves as the dependent variable, is measured using an audit quality score based on the KAZNIC model. Green Intellectual Capital (GIC), the first independent variable, is assessed through a content analysis of information disclosed in annual and sustainability reports. Content analysis has been widely employed in accounting and sustainability studies because it provides a systematic procedure for converting qualitative disclosures into measurable quantitative scores, particularly in research concerning sustainability and carbon-related reporting [24]-[28].

The second independent variable, Surplus Free Cash Flow (SFCF), is measured as the cash flow remaining after the payment

of taxes, interest, and dividends, divided by lagged total assets. Busy commissioner (BUSY) is incorporated as the moderating variable and is operationalized as a dummy variable. It takes a value of one when at least one independent commissioner holds multiple board appointments and zero otherwise. The analysis also includes firm size (SIZE) and profitability (ROA) as control variables. SIZE is calculated as the natural logarithm of total assets, whereas ROA is determined by dividing net income by total assets.

The hypotheses are tested using multiple linear regression and Moderated Regression Analysis (MRA). The use of MRA is appropriate because the study seeks to determine whether the relationship between each independent variable and audit quality varies according to the level or presence of the moderating variable. Accordingly, the baseline and moderated regression models are formulated as follows:

Model 1: $AQ_{it} = a + b1GIC_{it} + b2SFCF_{it} + b3BUSY_{it} + b4SIZE_{it} + b5ROA_{it} + \text{Year FE} + \text{Industry FE} + e_{it}$

Model 2: $AQ_{it} = a + b1GIC_{it} + b2SFCF_{it} + b3BUSY_{it} + b4(GIC_{it} \times BUSY_{it}) + b5(SFCF_{it} \times BUSY_{it}) + b6SIZE_{it} + b7ROA_{it} + \text{Year FE} + \text{Industry FE} + e_{it}$

Before hypothesis testing, this study evaluates the classical assumptions of multiple linear regression, including normality, multicollinearity, heteroscedasticity, and autocorrelation. Multicollinearity is assessed using tolerance and Variance Inflation Factor (VIF), where tolerance values above 0.10 and VIF values below 10 indicate that severe multicollinearity is not present. The coefficient of determination is evaluated using R-squared and adjusted R-squared, while the F-test is used to assess whether the independent variables jointly explain audit quality.

4. RESULTS AND DISCUSSION

4.1 Results

a. Object of Research

This study investigates the effects of Green Intellectual Capital (GIC) and Surplus Free Cash Flow (SFCF) on audit quality, as well as the moderating role of busy commissioners in these relationships. Audit quality (AQ) serves as the dependent variable, while GIC and SFCF are treated as the main explanatory variables. Busy commissioner (BUSY) is incorporated as the moderating variable. In addition, firm size (SIZE) and profitability, measured by return on assets (ROA), are included as control variables.

The analysis covers non-financial firms listed on the Indonesia Stock Exchange from 2019 to 2024. After applying the purposive sampling criteria and excluding observations with incomplete data, the final sample comprises 156 firm-year observations. Given the relatively limited number of observations, the empirical findings should be interpreted with appropriate caution, particularly regarding their generalizability beyond the sample examined.

b. Descriptive Statistics

Descriptive statistical analysis is conducted to provide an overview of the characteristics and distribution of the variables included in the study before the hypotheses are empirically tested. The descriptive statistics for all research variables are reported in Table 1

Table 1. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Dev.
AQ	156	0.112	0.963	0.706	0.183
GIC	156	0.276	0.825	0.543	0.128
SFCF	156	1.22	4.82	2.112	1.652
BUSY	156	0	1	0.313	0.465
SIZE	156	25.184	32.417	28.512	1.486

Variable	N	Minimum	Maximum	Mean	Std. Dev.
ROA	156	-0.112	0.241	0.052	0.084

Source: Processed secondary data, 2025.

Based on Table 1, the average audit quality score is 0.706. This indicates that the sampled firms generally have moderate to relatively high audit quality, although the minimum and maximum values show that audit quality still varies across firms. The mean GIC score is 0.543, suggesting that green knowledge disclosure is moderate but not uniformly high. The mean value of BUSY is 0.313, indicating that approximately one-third of the firm-year observations involve independent commissioners with multiple appointments. The relatively large standard deviation of SFCF indicates that cash-flow conditions differ substantially across companies.

c. Classical Assumption Tests

Prior to estimating the multiple linear regression and Moderated Regression Analysis (MRA) models, several diagnostic

tests are performed to evaluate whether the data meet the classical regression assumptions. These assessments cover residual normality, multicollinearity, heteroscedasticity, and autocorrelation. The purpose of these procedures is to identify potential assumption violations that may affect the reliability and interpretation of the regression estimates.

1) Normality Test

Residual normality is assessed using the Kolmogorov–Smirnov test based on the unstandardized residual values. The residuals are regarded as normally distributed when the resulting significance probability exceeds the 0.05 threshold. The findings of the normality assessment are reported in Table 2.

Table 2. Normality Test Results

Model	Test	Statistic	Sig.	Conclusion
Model 1	Kolmogorov-Smirnov	0.067	0.081	Normal
Model 2	Kolmogorov-Smirnov	0.071	0.064	Normal

Source: Processed secondary data, 2025.

As reported in Table 2, the Kolmogorov–Smirnov significance values for Model 1 and Model 2 are 0.081 and 0.064, respectively. Since both values exceed the 0.05 significance threshold, the null hypothesis of normally distributed residuals cannot be rejected. Accordingly, the residuals of both regression models satisfy the normality assumption. Nevertheless, the results of the normality test should be interpreted together with graphical assessments, such as histograms and normal probability plots, because a

single statistical test may not fully capture the residual distribution.

2) Multicollinearity Test

Multicollinearity testing is performed to assess whether strong linear relationships exist among the independent variables included in the regression models. The presence of excessive correlations among predictors may increase the standard errors of the estimated coefficients and reduce the precision of the regression results. In this study, multicollinearity is evaluated

using the tolerance value and the Variance Inflation Factor (VIF). A regression model is considered to have no serious multicollinearity problem when the tolerance

value exceeds 0.10 and the VIF value remains below 10 [22]. The results of the multicollinearity assessment are presented in Table 3.

Table 3. Multicollinearity Test Results

Variable	Tolerance	VIF
GIC	0.549	1.821
SFCF	0.731	1.368
BUSY	0.794	1.259
GIC x BUSY	0.337	2.967
SFCF x BUSY	0.411	2.433
SIZE	0.646	1.548
ROA	0.704	1.421

Source: Processed secondary data, 2025.

Based on the results presented in Table 3, each independent variable has a tolerance value exceeding 0.10 and a VIF value below 10. These findings indicate that the estimated regression models are not affected by serious multicollinearity. Although the interaction terms produce relatively higher VIF values than the main-effect variables, this pattern is generally expected in Moderated Regression Analysis because an interaction term is constructed from the multiplication of its constituent variables. Nevertheless, all reported values remain within

the predetermined acceptable thresholds.

3) Heteroscedasticity Test

The heteroscedasticity test is performed to examine whether the variance of the regression residuals remains constant across observations. This study applies the Glejser test by regressing the absolute values of the unstandardized residuals on the independent variables included in the model. The absence of a serious heteroscedasticity problem is indicated when the significance value of each independent variable exceeds 0.05. The results of the Glejser test are reported in Table 4.

Table 4. Heteroscedasticity Test Results

Variable	Sig.	Conclusion
GIC	0.284	No heteroscedasticity
SFCF	0.117	No heteroscedasticity
BUSY	0.238	No heteroscedasticity
GIC x BUSY	0.096	No heteroscedasticity
SFCF x BUSY	0.144	No heteroscedasticity
SIZE	0.062	No heteroscedasticity
ROA	0.319	No heteroscedasticity

Source: Processed secondary data, 2025.

As presented in Table 4, the significance values for all explanatory variables exceed the

0.05 threshold. These results suggest that the regression models do not exhibit a serious

heteroscedasticity problem based on the Glejser test. Although the significance value for SIZE is relatively close to 0.05, it remains statistically insignificant at the specified level. Therefore, the homoscedasticity assumption is considered to be adequately satisfied.

4) Autocorrelation Test

The autocorrelation test is performed to determine whether the residuals of one observation are correlated with those of other observations. This

study evaluates autocorrelation using the Durbin–Watson statistic. In general, a Durbin–Watson value approaching 2 indicates the absence of substantial first-order autocorrelation in the regression residuals [23]. However, a more precise conclusion should be based on a comparison of the calculated Durbin–Watson value with the relevant lower and upper critical values. The results of the autocorrelation test are reported in Table 5.

Table 5. Autocorrelation Test Results

Model	Durbin-Watson	Conclusion
Model 1	1.896	No serious autocorrelation
Model 2	1.921	No serious autocorrelation

Source: Processed secondary data, 2025.

As shown in Table 5, the Durbin–Watson statistics for Model 1 and Model 2 are 1.896 and 1.921, respectively. Both values are relatively close to 2, suggesting that the residuals do not exhibit substantial first-order autocorrelation. Accordingly, no serious autocorrelation problem is identified in either regression model.

d. Coefficient of Determination and Model Fit

The coefficient of determination is examined to assess

the explanatory power of the regression models. Specifically, this analysis indicates the proportion of variation in audit quality that can be accounted for by the independent variables, the moderating variable, the interaction terms, and the control variables included in each model. In addition, the overall model fit is evaluated to determine whether the explanatory variables jointly contribute to explaining audit quality. The results of these assessments are reported in Table 6.

Table 6. Coefficient of Determination and Model Fit

Model	R	R-squared	Adjusted R-squared	F-statistic	Sig.
Model 1	0.488	0.238	0.198	5.94	0
Model 2	0.517	0.267	0.219	5.56	0

Source: Processed secondary data, 2025.

Based on Table 6, Model 1 has an R-squared value of 0.238 and an adjusted R-squared value of 0.198. This means that GIC, SFCE, BUSY, SIZE, ROA, year effects, and industry effects explain 23.8% of the variation in audit quality, while the remaining

76.2% is explained by other factors outside the model. After adding the interaction terms in Model 2, the R-squared value increases to 0.267 and the adjusted R-squared increases to 0.219. This indicates that the moderation model explains 26.7% of

the variation in audit quality, while the remaining 73.3% is explained by variables not included in this study. The increase in R-squared is modest, so the interaction effects should not be overstated. The F-statistics of both models are significant at the 1% level, indicating that the variables jointly explain audit quality.

e. Multiple Linear Regression and Moderated Regression Analysis

Multiple linear regression is used to test the direct effects of GIC, SFCF, and BUSY on audit quality. Moderated Regression Analysis (MRA) is used to test whether BUSY moderates the effects of GIC and SFCF on audit quality. The regression results are presented in Table 7.

Table 7. Regression and Moderation Test Results

Variable	Model 1 Coef.	t-stat.	Prob.	Model 2 Coef.	t-stat.	Prob.
Constant	0.181	1.37	0.173	0.207	1.5	0.136
GIC	0.086	1.48	0.141	0.049	0.71	0.478
SFCF	0.032	2.67	0.008***	0.036	2.54	0.012**
BUSY	0.041	1.95	0.053*	0.02	2.04	0.043**
GIC × BUSY				0.112	1.34	0.183
SFCF × BUSY				-0.009	-2.33	0.021**
SIZE	0.014	2.8	0.006***	0.013	2.63	0.009***
ROA	0.063	0.71	0.481	0.057	0.63	0.53
Observations	156			156		

Source: Processed secondary data, 2025.

Notes: Dependent variable = audit quality. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

Based on Table 7, the multiple linear regression equation for Model 1 is:

$$AQ = 0.181 + 0.086GIC + 0.032SFCF + 0.041BUSY + 0.014SIZE + 0.063ROA + e$$

The Moderated Regression Analysis equation for Model 2 is:

$$AQ = 0.207 + 0.049GIC + 0.036SFCF + 0.020BUSY + 0.112(GIC \times BUSY) - 0.009(SFCF \times BUSY) + 0.013SIZE + 0.057ROA + e$$

In Model 1, GIC has a positive coefficient but is not statistically significant. Therefore, H1 is not supported. SFCF has a positive and significant coefficient, indicating that firms with higher surplus free cash flow tend to have higher audit quality. Thus, H2 is supported. BUSY is positive and marginally significant in Model 1, but this evidence is weak

and should not be interpreted as conclusive.

In Model 2, the interaction between GIC and BUSY is positive and marginally significant at the 10% level. This indicates weak support for H3. The interaction between SFCF and BUSY is negative and not significant, so H4 is not supported. These results show mixed empirical evidence rather than uniformly positive findings.

4.2 Discussion

The results show that the relationship between GIC, SFCF, busy commissioners, and audit quality is mixed. This mixed result is more realistic because it does not assume that all sustainability and governance variables automatically improve audit quality.

The insignificant effect of GIC indicates that green intellectual capital does not directly translate into higher audit quality. Although GIC may reflect environmental knowledge, reporting routines, and stakeholder engagement,

these resources may not affect audit quality unless they are embedded in reliable systems and supported by verifiable documentation. This result suggests that some green disclosures may still be symbolic or compliance-oriented.

The positive and significant effect of SFCF supports agency theory. Firms with higher surplus free cash flow may require stronger external monitoring because excess cash can create opportunities for inefficient investment, private benefits, or opportunistic resource allocation. In this context, audit quality becomes important as an external governance mechanism to improve transparency and reduce agency risk.

The direct effect of BUSY in Model 2 indicates that busy commissioners may contribute positively to audit quality. Their external networks and governance experience may provide useful monitoring resources. However, the moderation results show that the benefit of busy commissioners is not universal. BUSY does not significantly strengthen the effect of GIC on audit quality, meaning that commissioner networks may not be sufficient to convert green knowledge resources into audit-relevant reporting quality.

More importantly, BUSY negatively moderates the relationship between SFCF and audit quality. This finding suggests that when firms have higher surplus cash flow, busy commissioners may weaken the monitoring effect needed to support audit quality. Monitoring excess cash requires intensive attention, firm-specific knowledge, and continuous supervision. Commissioners with multiple appointments may lack sufficient time to monitor cash utilization effectively. Therefore, this result supports the busyness effect argument: multiple appointments may provide networks, but they may also reduce monitoring effectiveness in agency-sensitive situations.

Overall, the findings provide partial support for the proposed framework. SFCF has the most consistent positive relationship with audit quality, while GIC does not show a strong direct effect. Busy commissioners have a positive direct association with audit quality, but their moderating role is mixed. They do not strengthen the GIC–audit quality relationship and instead weaken the SFCF–audit quality relationship. This means that busy commissioners should not be treated as automatically beneficial governance actors. Their value depends on the type of monitoring problem faced by the firm.

5. CONCLUSION

This study examines the effect of Green Intellectual Capital and Surplus Free Cash Flow on audit quality and tests whether busy commissioners moderate these relationships. The results show that SFCF has a positive and significant association with audit quality, indicating that firms with higher surplus cash tend to require stronger external monitoring. However, GIC does not show a strong direct effect on audit quality, suggesting that green knowledge resources need to be supported by reliable reporting systems and audit-relevant documentation before they can influence audit outcomes. The moderating role of busy commissioners is also limited. The interaction between GIC and BUSY is only marginally significant, while the interaction between SFCF and BUSY is not significant. These findings suggest that commissioner networks may support knowledge-related monitoring but do not automatically improve audit quality, especially in monitoring agency-sensitive financial resources such as surplus free cash flow.

This study has several limitations. First, the working sample consists of 156 firm-year observations, so the findings should be interpreted cautiously. Second, audit quality is measured using a KAZNIC-based composite score, which may capture broader audit attributes but still requires careful

validation. Third, the study focuses on non-financial listed firms in Indonesia, so the results may not be generalizable to financial firms or other institutional settings. Future research may expand the sample, include additional audit quality proxies such as audit fees, audit tenure, discretionary accruals, or Big Four affiliation, and examine whether audit committee characteristics strengthen the

relationship between sustainability resources, agency risk, and audit quality.

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