GREEN INNOVATION, RISK MANAGEMENT, CSR, AND GCiG IMPACT ON FIRM VALUE

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Abstract *: This study examines the effect of green innovation, risk management, and corporate social responsibility (CSR) on firm value, with good corporate governance (GCG) as a moderating variable in manufacturing companies within the consumer non-cyclicals sub-sector listed on the Indonesia Stock Exchange from 2021 to 2023. Using purposive sampling, 31 companies (93 observations) were analyzed through multiple linear regression and Moderated Regression Analysis (MRA). The results reveal that green innovation significantly and positively affects firm value (β = 0.141, p = 0.022), while risk management (β = -1.127, p < 0.001) and CSR (β = -0.270, p = 0.017) demonstrate significant negative effects. The moderation analysis indicates that institutional ownership successfully moderates the green innovation-firm value relationship (β = 0.210, p = 0.038), while independent commissioners fail to moderate any relationships (p > 0.05). Audit committee effectively moderates all three relationships: strengthening green innovation (β = 0.012, p = 0.005) and risk management effects (β = 2.034, p < 0.001), while amplifying CSR's negative impact (β = -2.699, p < 0.001). The model demonstrates strong fitness (F = 66.465, p < 0.001; R^2 = 0.811), explaining 81.1% of firm value variation. These findings reveal that sustainability practices require effective governance validation—audit committees with financial expertise prove most critical, while structural board independence alone proves insufficient in emerging market contexts where governance implementation remains weak.*

Keywords: Green Innovation; Risk Management; Corporate Social Responsibility; Good Corporate Governance; Firm Value

Code JEL : Q56, G34, M14, G31

INTRODUCTION

Firm value represents a primary indicator reflecting an entity's ability to create economic benefits for its stakeholders. In an increasingly competitive global era, firm value is influenced not only by financial performance but also by non-financial factors crucial for long-term sustainability. Based on Indonesia Stock Exchange (IDX) data for 2021-2023, the consumer non-cyclicals sub-sector recorded an average Price to Book Value (PBV) of 1.76—higher than several other sectors—yet showed a concerning decline from 3.31 in 2021 to 1.56 in 2023, indicating pressure from both external and internal factors. The manufacturing sector holds strategic importance in Indonesia's economy, contributing significantly to GDP with investment reaching IDR 167.1

trillion in H1 2021, up 29.94% year-over-year (Ministry of Industry, 2021). The consumer non-cyclicals sub-sector is particularly relevant due to its stable characteristics even during economic uncertainty, producing essential daily goods with relatively inelastic demand. However, this stability paradoxically masks fundamental challenges in value creation during the post-COVID-19 recovery period (2021-2023), where inflationary pressures and sustainability demands intensified.

Despite growing emphasis on sustainability practices—green innovation, risk management, and Corporate Social Responsibility (CSR)—their effects on firm value remain inconsistent and theoretically puzzling. Empirical studies show contradictory findings: green innovation demonstrates both positive and null effects; risk management exhibits negative, positive, or insignificant impacts; while CSR predominantly shows negative or non-significant results. These inconsistencies suggest that the relationship between sustainability practices and firm value is not straightforward but contingent on governance quality. Good Corporate Governance (GCG) theoretically should strengthen sustainability practices' positive effects through enhanced transparency and accountability. However, Indonesia's ASEAN Corporate Governance Scorecard (ACGS) performance remains below neighboring countries like Thailand and Philippines, particularly in disclosure and accountability aspects. This weak governance implementation raises critical questions about whether GCG can effectively validate sustainability signals in emerging market contexts.

Critical research gaps persist: (1) no comprehensive analysis examines GCG's moderating effects on green innovation, risk management, and CSR simultaneously in Indonesian manufacturing context; (2) the consumer non-cyclicals sub-sector with unique demand stability remains understudied; (3) which specific GCG mechanisms (institutional ownership, independent commissioners, or audit committee) prove most effective remains unclear; (4) post-pandemic recovery dynamics (2021-2023) creating new sustainability-value relationships are unexplored. Therefore, this study investigates: How do green innovation, risk management, and CSR affect firm value in Indonesian manufacturing companies (consumer non-cyclicals sub-sector, 2021-2023), and which GCG mechanisms effectively moderate these relationships? This research contributes by providing integrated empirical evidence examining three sustainability dimensions with three governance proxies in a single model within a specific sector and critical period, advancing understanding of sustainability-governance-value nexus in emerging markets.

THE LITERATURE REVIEW

The relationship between sustainability practices and firm value can be understood through the integration of signaling theory [1] and stakeholder theory [2]. Signaling theory posits that information asymmetry between management and external parties creates a need for credible signals about firm quality. In sustainability contexts, green innovation, risk management disclosure, and CSR serve as signals communicating commitment to long-term value creation. However, signaling theory alone cannot explain why some sustainability practices negatively affect firm value, necessitating stakeholder theory's insight that firm success depends on balancing multiple stakeholder interests. The critical theoretical insight is that sustainability signals enhance firm value only when perceived as genuine commitments rather than symbolic gestures, and when

validated by credible governance mechanisms. This integration provides the foundation for understanding GCG's moderating role—strong governance enhances signal credibility while weak governance may generate market skepticism.

Empirical evidence on green innovation's effect presents a fundamental paradox. One stream of research demonstrates positive effects: [3] found that green innovation enhances firm value through operational efficiency and waste transformation into valuable resources; [4] confirmed that environmental innovations signal strong sustainability prospects to investors; while [5] showed that green innovation positions companies advantageously against environmental challenges while strengthening competitive positioning. Conversely, another stream reports null effects: [6] found that markets may not immediately value green innovation due to uncertain long-term payoffs; while [7] suggested that investors cannot distinguish genuine innovation from superficial environmental claims. This contradiction reveals a critical gap: the market's response to green innovation depends on validation mechanisms that authenticate innovation substance. From stakeholder theory perspective, green innovation should satisfy multiple constituencies—consumers seeking eco-friendly products, investors considering environmental risks, and communities expecting corporate responsibility. Yet empirical inconsistency suggests that stakeholder perception of authenticity varies based on observable governance quality. Previous studies have not systematically examined which specific GCG mechanisms effectively validate green innovation signals, particularly in emerging markets where governance standards remain underdeveloped and greenwashing practices proliferate.

The risk management-firm value relationship presents an information paradox that existing theories struggle to explain. Theoretically, Enterprise Risk Management (ERM) disclosure should reduce information asymmetry and demonstrate proactive risk management capabilities [8]. However, empirical evidence is sharply divided. Studies by [9], [10], and [11] found negative effects—comprehensive risk disclosure signals heightened threat exposure rather than managerial competence, particularly when unaccompanied by credible mitigation strategies. Companies disclosing extensive risk information may inadvertently communicate vulnerability, triggering investor concern rather than confidence. In contrast, [8] found positive effects, arguing that transparent risk reporting demonstrates management quality and enhances predictability. This contradiction reveals a signaling dilemma: the same disclosure practice generates opposite market reactions depending on contextual interpretation. From stakeholder theory, effective risk management should balance various stakeholder concerns—shareholders seeking stability, creditors assessing default probability, and regulators ensuring systemic safety. The critical unresolved question is why the same practice generates opposite market reactions. This suggests that governance mechanisms' role in shaping market interpretation of risk signals remains poorly understood. [12] found GCG failed to moderate this relationship in mining companies, but whether this generalizes to manufacturing sectors with different risk profiles and stakeholder configurations remains unexplored. Specifically, whether different GCG components—institutional monitoring, board independence, or audit oversight—differentially influence how markets interpret risk disclosure credibility has not been systematically investigated.

The CSR-firm value relationship shows the most puzzling empirical pattern, with studies reporting predominantly negative or non-significant effects that challenge fundamental theoretical

predictions. Multiple studies document negative effects: [12] and [13] found that CSR reduces firm value as markets perceive social expenditures as cost burdens rather than strategic investments; while [14], [15] report non-significant effects, suggesting CSR activities neither enhance nor diminish shareholder value. This predominance of negative or null findings systematically contradicts stakeholder theory's core prediction that balancing stakeholder interests enhances long-term value creation. The persistent negative findings suggest three alternative explanations inadequately addressed by existing theory. First, CSR may function as a cost signal when perceived as regulatory compliance rather than genuine strategic commitment—investors view social expenditures as mandatory obligations reducing distributable profits rather than value-creating investments. Second, CSR may indicate agency problems where managers pursue personal social objectives at shareholders' expense, particularly when governance oversight proves weak. Third, CSR may serve as greenwashing indicator when disclosure substantially exceeds substantive impact—sophisticated investors recognize symbolic activities, responding negatively to perceived corporate hypocrisy. From stakeholder theory perspective, the assumption that "doing good leads to doing well" appears empirically questionable in emerging market contexts. The theory presumes that satisfying multiple stakeholder groups creates win-win outcomes, yet evidence suggests inherent trade-offs where satisfying social stakeholders may directly conflict with shareholder wealth maximization. The critical gap is absence of contingency thinking: under what conditions does CSR enhance versus destroy value? Existing research has not examined how governance quality determines whether CSR is perceived as strategic investment creating shared value or wasteful expenditure satisfying managerial preferences. Particularly unclear is whether different governance mechanisms—institutional monitoring focused on financial returns, board oversight ensuring strategic alignment, or audit scrutiny detecting opportunistic behavior—lead to differential CSR effectiveness in value creation.

The theoretical rationale for GCG as moderator appears compelling: strong governance should enhance sustainability signal credibility and ensure stakeholder balance, thereby strengthening positive effects of green innovation, risk management, and CSR on firm value. However, empirical evidence proves contradictory and reveals fundamental theoretical ambiguity. [7] found that GCG measured through institutional ownership and audit committee strengthens green innovation and environmental disclosure effects on firm value, suggesting that governance mechanisms validate sustainability signals by ensuring authentic implementation and transparent reporting. Conversely, [12] found that GCG fails to moderate relationships between risk management, CSR, and firm value in mining companies, indicating that governance quality alone cannot overcome fundamental market skepticism toward these practices. This contradiction exposes a critical theoretical problem: existing theory treats GCG as monolithic construct, assuming all governance mechanisms function similarly. Yet empirical evidence suggests differential effectiveness—some mechanisms moderate certain relationships but not others. The specificity problem manifests in three dimensions. First, mechanism heterogeneity: institutional ownership provides financial monitoring and resource access; independent commissioners offer strategic oversight and external perspectives; audit committees ensure reporting accuracy and detect opportunistic behavior. These mechanisms operate through distinct channels with varying relevance for different sustainability practices. Second, practice heterogeneity: green innovation requires long-term investment validation and technical expertise assessment; risk management demands financial sophistication and systemic thinking; CSR necessitates stakeholder balance

judgment and authenticity verification. Different practices may require different governance capabilities for effective validation. Third, context heterogeneity: emerging markets like Indonesia exhibit weak governance institutions, concentrated ownership structures, and limited board independence—characteristics fundamentally different from developed market contexts where most theories originated. Whether governance mechanisms function similarly across institutional contexts remains questionable.

Collectively, existing literature reveals a fundamental unresolved question: under what contingencies do sustainability practices enhance firm value, and which specific governance mechanisms effectively validate these practices in emerging market contexts? The literature demonstrates that direct relationships between sustainability practices and firm value prove inconsistent—sometimes positive, often negative or null—suggesting that theoretical predictions oversimplify complex realities. The assumption that sustainability inherently creates value appears empirically questionable, particularly in markets where short-term profitability pressures dominate and stakeholder sophistication varies widely. Moreover, the moderating role of governance remains poorly specified—existing research treats GCG as undifferentiated construct without examining which specific mechanisms (institutional ownership, board independence, audit oversight) prove effective for which specific practices (innovation validation, risk interpretation, CSR authenticity). This study addresses these gaps by simultaneously examining three sustainability dimensions (green innovation, risk management, CSR) with three governance mechanisms (institutional ownership, independent commissioners, audit committee) in an integrated model within Indonesian manufacturing sector during post-pandemic recovery period (2021-2023). This approach enables systematic comparison of mechanism-specific moderating effectiveness across different sustainability practices in emerging market context characterized by weak governance institutions and concentrated ownership structures.

Based on theoretical integration and critical literature synthesis, we propose the following hypotheses:

H_1: Green Innovation has a positive effect on Firm Value

H_2: Risk Management has a negative effect on Firm Value

H_3: Corporate Social Responsibility has a negative effect on Firm Value

H_4: Good Corporate Governance moderates the effect of Green Innovation on Firm Value

H_5: Good Corporate Governance moderates the effect of Risk Management on Firm Value

H_6: Good Corporate Governance moderates the effect of Corporate Social Responsibility on Firm Value

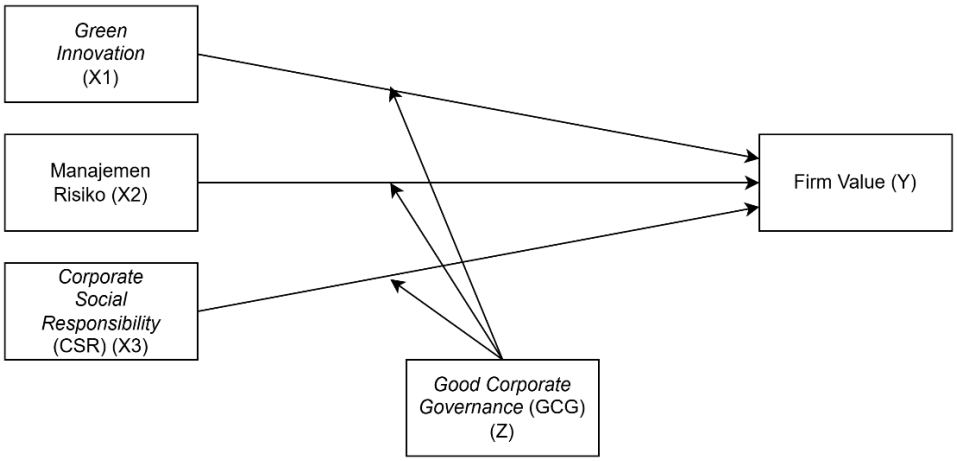

Figure 1. Frame of Mind
Resource : Authors' compilation (2025).

METHODS

This research adopts a quantitative approach rooted in the positivism paradigm. The object of this research is manufacturing companies in the consumer non-cyclicals sub-sector listed on the Indonesia Stock Exchange (IDX) during the period 2021-2023. Data were obtained from annual reports and sustainability reports accessed through the IDX website and official company websites. The study population consisted of 96 companies, with a sample of 31 companies (93 observations) selected through purposive sampling based on the following criteria: (1) companies listed on IDX during 2021-2023, (2) companies publishing annual and sustainability reports consecutively, (3) companies using GRI index in sustainability reports, and (4) companies reporting profits during 2021-2023.

Table 1. *Sample Selection Criteria*

No.	Research Criteria	Not Eligible	Eligible
1.	Manufacturing companies in the consumer non-cyclicals sub-sector listed on the Indonesia Stock Exchange (IDX) for the 2021–2023 period.	0	96
2.	Manufacturing companies in the consumer non-cyclicals sub-sector that published annual reports and sustainability reports consecutively for the 2021–2023 period.	(40)	59
3.	Manufacturing companies in the consumer non-cyclicals sub-sector that used the GRI index in their sustainability reports consecutively for the 2021–2023 period.	(28)	31
4.	Annual reports of manufacturing companies in the consumer non-cyclicals sub-sector that stated nominal values in rupiah.	0	31

Total data processed (3 years x 31 companies)	93

Resource : IDX Website (2025)

Table 2. *Operationalization Variability*

Variable (Symbol)	Operational Definition	Indicators / Measurement Formula	Scale
Firm Value (FV)	Market assessment of the firm based on future prospects and risk.	Tobin's Q = (Market Value of Equity + Total Debt) / Total Assets	Ratio
Green Innovation (GI)	Firm initiatives in developing eco-friendly innovations.	GI Index = disclosed items / total indicators	Index (0–1), Interval
Risk Management (RM)	Level of implementation and disclosure of risk management.	Risk Management Disclosure Index = disclosed items / total indicators	Index (0–1), Interval
Corporate Social Responsibility (CSR)	Extent of CSR activities and disclosures.	CSR Index (GRI-based) = disclosed items / total indicators	Index (0–1), Interval
Institutional Ownership (KI)	Proportion of shares owned by institutional investors.	KI = institutional shares / total outstanding shares	Ratio
Independent Commissioners (DKI)	Proportion of independent commissioners.	DKI = number of independent commissioners / total board members	Ratio
Audit Committee (KA)	Effectiveness of the audit committee.	Number of audit committee members or audit committee index	Ratio

Resource : Authors' compilation (2025)

Table 2 presents the operationalization of research variables and their measurement methods. Firm value as the dependent variable is measured using Tobin's Q ratio, which compares market value with asset replacement costs. Green innovation is measured through four main indicators related to environmentally friendly production practices, using a dummy approach where value 1 indicates criterion fulfillment. Risk management is assessed through ERM disclosure index based on COSO 2017 framework encompassing five main components. CSR is measured using disclosure index based on GRI Standards with 117 disclosure items. Meanwhile, GCG as a moderating variable is proxied through three dimensions: institutional ownership measured by percentage of institutional share ownership, independent commissioners measured by proportion to total board members, and audit committee measured by number of members. This operationalization ensures that all research variables can be measured objectively and consistently.

All statistical analyses were performed using IBM SPSS Statistics 30 with a 0.05 two-tailed significance level, following a structured sequence to ensure data quality and model validity.

Classical assumption tests were first conducted, including the Kolmogorov–Smirnov normality test ($p > 0.05$) to confirm residual normality, multicollinearity assessment using VIF (< 10) and Tolerance (> 0.1) to detect excessive inter-variable correlations, and the Glejser heteroscedasticity test ($p > 0.05$) to verify constant error variance. Multiple Linear Regression was then applied to estimate the direct effects of the independent variables on firm value using the standard OLS equation, followed by Moderated Regression Analysis (MRA) incorporating interaction terms to determine whether moderator variables significantly strengthened or weakened these relationships, as indicated by the significance of the interaction coefficient. The t-test was used to evaluate the significance of individual regression coefficients, while the F-test assessed the overall explanatory power of the model. Finally, the coefficient of determination (R^2) and Adjusted R^2 were used to measure how much variation in the dependent variable was explained by the model while accounting for the number of predictors included.

RESULT AND DISCUSSION

Table 3 . *Desccriptive Statistics Resuls*

Variable	N	Min	Max	Mean	Std. Dev
Green Innovation	93	.500	1.000	.88441	.135730
Risk Management	93	.600	1.000	.83871	.094158
CSR	93	.222	.923	.57090	.168118
Firm Value	93	.144	10.570	1.89065	1.664280
Institutional Ownership	93	.000	.953	.64369	.269808
Independent Commissioners	93	.167	.833	.41146	.123165
Audit Committee	93	2	4	2.99	.180

Resource : SPSS Output (2025)

Table 3 shows that green innovation has a mean of 0.88441, risk management 0.83871, and CSR 0.57090. Firm value ranges from 0.144 to 10.570 with mean of 1.89065 and standard deviation of 1.664280. Institutional ownership averages 64.37%, independent commissioners 41.15%, and audit committees approximately 3 members.

Table 4. *Classical Assumption Test Results*

Test	Indicator	Criterion	Result	Conclusion
Normality	Asymp. Sig	>0.05	.200	Normal Distribution

Multicollinearity	VIF > 10 and tolerance < 0.10	<10 and >0.1	1.119-2.624 and 0.381-0.893	No Multicollinearity
Heteroscedasticity	Sig. (Glejser)	.0.05	0.061-0.865	No heteroscedasticity

Resource : SPSS Output (2025)

All classical assumption tests were satisfied: normality test (Asymp. Sig. = 0.200 > 0.05), multicollinearity test (all VIF < 10), and heteroscedasticity test (all Sig. > 0.05), indicating the regression model meets the requirements for further analysis.

Table 5. *Multiple Linear Regression Results*

Coefficients[a]					
Model	Unstd. Coefficients		Std. Coefficients	t	Sig.
	B	Std. Error	Beta		
(*Constant*)	-.245	.284		-.864	.393
Green Innovation	.141	.060	.141	2.333	.022
Risk Management	-1.127	.141	-.665	-7.994	<,001
CSR	-.270	.111	-.204	-2.428	.017

Resource : SPSS Output (2025)

The regression equation: FV = 1.307 + 0.141GI - 1.127RM - 0.270CSR + ε

Green innovation shows positive coefficient of 0.141 (p = 0.022), risk management demonstrates negative coefficient of -1.127 (p < 0.001), and CSR exhibits negative coefficient of -0.270 (p = 0.017).

Table 6. *MRA Results with Institutional Ownership*

Coefficients[a]					
Model	Unstd. Coefficients		Std. Coefficients	t	Sig.
	B	Std. Error	Beta		
(*Constant*)	1.277	.214		5.958	<,001
GI x KI	.210	.100	.164	2.103	.038
RM x KI	.727	.511	.563	1.424	.158
CSR x KI	-.229	.529	-.167	-.433	.666

Resource : SPSS Output (2025)

Table 6 shows Institutional ownership moderates the green innovation-firm value relationship (coefficient = 0.210, p = 0.038) but does not significantly moderate risk management (p = 0.158) or CSR relationships (p = 0.666).

Table 7. *MRA Results with Independent Commissioners*

Coefficients[a]						
Model		Unstd. Coefficients		Std. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(*Constant*)	.512	.247		2.071	.041
	GI x DKI	.252	.496	.108	.508	.613
	RM x DKI	-1.441	1.136	-.506	-1.268	.208
	CSR x DKI	-.316	1.091	-.105	-.289	.773

Resource : SPSS Output (2025)

Table 7 show Independent commissioners do not significantly moderate any relationships: GI x DKI (p = 0.613), RM x DKI (p = 0.208), and CSR x DKI (p = 0.773).

Table 8. *MRA Results with Audit Committee*

Coefficients[a]						
Model		Unstd. Coefficients		Std. Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.751	.141		12.414	<,001
	GI x KA	.012	.004	.035	2.858	.005
	RM x KA	2.034	.095	3.178	21.319	<,001
	CSR x KA	-2.699	.096	-5.973	-28.251	<,001

Resource : SPSS Output (2025)

Table 8 shows Audit committee significantly moderates all three relationships: GI x KA (coefficient = 0.012, p = 0.005), RM x KA (coefficient = 2.034, p < 0.001), and CSR x KA (coefficient = -2.699, p < 0.001).

Table 9. *Model Fit Test Results (F-Test)*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	*5.654*	*3*	*1.885*	*66.465*	*<,001[b]*
	Residual	*2.524*	*89*	*.028*		
	Total	*8.178*	*92*			

Resource : SPSS Output (2025)

Table 9 show The F-test shows F-value of 66.465 with significance <0.001, indicating the model is statistically significant.

Table 10. *Summary of Hypothesis Tes ting*

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
Green Innovation	*.141*	*.060*	*.141*	*2.333*	*.022*
Risk Management	*-1.127*	*.141*	*-.665*	*-7.994*	*<,001*
Corporate Social Responsibility	*-.270*	*.111*	*-.204*	*-2.428*	*.017*
GI x KI	*.210*	*.100*	*.164*	*2.103*	*.038*
RM x KI	*.727*	*.511*	*.563*	*1.424*	*.158*
CSR x KI	*-.229*	*.529*	*-.167*	*-.433*	*.666*
GI x DKI	*.252*	*.496*	*.108*	*.508*	*.613*
RM x DKI	*-1.441*	*1.136*	*-.506*	*-1.268*	*.208*
CSR x DKI	*-.316*	*1.091*	*-.105*	*-.289*	*.773*
GI x KA	*.012*	*.004*	*.035*	*2.858*	*.005*
RM x KA	*2.034*	*.095*	*3.178*	*21.319*	*<,001*
CSR x KA	*-2.699*	*.096*	*-5.973*	*-28.251*	*<,001*

Resource : SPSS Output (2025)

Hypotheses H_1, H_2, and H_3 are accepted. For moderation hypotheses (H_4, H_5, H_6), institutional ownership and audit committee show significant moderation effects, while independent commissioners do not.

Table 11. *Coefficient of Determination Test Results*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	*.900[a]*	*.811*	*.779*	*.14001*

Resource : SPSS Output (2025)

Table 10 shows The model demonstrates R^2 of 0.811, indicating that 81.1% of firm value variation is explained by the independent and moderating variables.

The research results show that green innovation positively affects firm value (β = 0.141, Sig. = 0.022). This finding supports signaling theory, where green innovation activities serve as positive signals to investors regarding the company's commitment to sustainability. Companies implementing green innovation can enhance operational efficiency, reduce long-term costs, and strengthen competitiveness, ultimately increasing firm value. Green innovation encourages companies to use environmentally friendly technology, reduce waste, and minimize energy and raw material usage. These innovations improve operational efficiency and lower long-term costs, strengthening firm value. In modern era, companies are not only required to create profits for shareholders but also provide benefits to all stakeholders. Investor focus is no longer limited to profitability but also assesses company environmental performance. This result aligns with research by [3], [4], [5], and [16], confirming that green innovation implementation positively impacts firm value. Application of green innovation in business processes encourages companies to manage production waste into something valuable, thereby increasing firm value. Integration of green innovation into business strategy also provides confidence to investors that companies have strong and consistent sustainability prospects.

Risk management negatively affects firm value (β = -1.127, Sig. <0.001). This finding indicates that risk management implementation requires substantial additional costs for building internal control systems, using risk mitigation technology, and financing training and compliance audits, which can reduce short-term profitability and suppress market perceptions of firm value. Declining firm value can occur when published information about potential risks is perceived negatively by investors. Such information makes investors aware of possible risks within company, considered detrimental. This situation is worsened when risk disclosure is not balanced with adequate explanation regarding handling measures company will take. On other hand, presenting information related to Enterprise Risk Management (ERM) requires substantial costs, potentially reducing company income or profit levels. This result is consistent with research by [9], [10], and [17], which found that risk management negatively affects firm value. Negative effects of risk management implementation emerge because companies generally only disclose information limitedly and do not provide in-depth explanations in annual reports regarding risk management practices.

CSR negatively affects firm value (β = -0.270, Sig. = 0.017). This finding indicates that CSR implementation is often still symbolic or merely regulatory compliance, not an integrated strategy with business objectives. Consequently, CSR is perceived only as formality and cost burden, not as real efforts to create competitive advantage. Investors have not yet made CSR disclosure main basis for their investment decisions. This condition shows that broader CSR

information disclosed, lower value of concerned company. CSR disclosure that has not been allocated effectively also adversely impacts market assessment. Most funds allocated for retained earnings make budget portion allocated for CSR activities relatively small. This result aligns with research by [12] and [13], which stated that CSR negatively affects firm value because allocated costs are not proportional to initial gains. Investment in CSR activities can cause additional costs impacting operational performance decline and weakening company competitiveness.

GCG measured through institutional ownership and audit committee successfully moderates the relationship between green innovation and firm value, as well as between risk management, CSR, and firm value. Institutional ownership and audit committee are effective as moderation mechanisms because both have concrete monitoring and control functions over company decision-making. Institutional ownership strengthens effect of green innovation on firm value because large investment institutions typically have monitoring capacity and access to financial resources helping overcome green project financing constraints. Audit committee that is effective enhances credibility of financial and non-financial reporting related to green innovation projects, ensures costs, results, and project risks are accurately recorded and reported, thereby reducing investor uncertainty.

CONCLUSION

This study examines how green innovation, risk management, and CSR influence firm value in Indonesian consumer non-cyclical manufacturing firms (2021–2023) and evaluates the moderating role of GCG mechanisms. Using 93 firm-year observations, the results show that green innovation increases firm value, whereas risk management and CSR reduce it; institutional ownership strengthens only the effect of green innovation, independent commissioners show no moderating power, and audit committees consistently act as the most effective moderator—enhancing the positive impact of green innovation, reversing the negative effect of risk management, and intensifying CSR's negative influence. The model accounts for 81.1% of the variation in firm value. Practically, firms should prioritize the competence and monitoring quality of audit committees, investors should assess sustainability initiatives in conjunction with governance strength, and regulators should emphasize audit committee expertise over formal structural compliance. However, the study faces limitations related to sample selection, endogeneity, disclosure-based measurement, short time horizon, and potential unobserved heterogeneity. Future research should apply methods addressing endogeneity, use longer and broader samples, validate real practices beyond disclosures, explore non-linear and mediating mechanisms, and incorporate additional governance dimensions.

Author contribution
Conceptualisation: M.R.A. and T.H.
Methodology: M.R.A. and T.H.
Investigation: M.R.A. and T.H.

Analysis: M.R.A. and T.H.
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Visualization: M.R.A. and T.H.
Supervision: M.R.A. and T.H.

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Conflicts of interest
The two authors declare no conflict of interest.

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