

The Influence of Board of Commissioners' Compensation, Human Capital, and Green Innovation on Sustainability Reporting Ratings: Evidence from Indonesia

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KEYWORD

ASRRAT; Corporate Governance;
Environmental Innovation;
Organizational Capabilities;
Sustainability Reporting Quality.

Article history:

Received

March 8, 2026

Revised

Jul 17, 2026

Accepted

Sept 9, 2026

Edition

Vol.6 No.1 (2026)

Journal of Islamic Economics and
Business

ABSTRACT

Sustainability reporting has become an important mechanism for demonstrating corporate accountability and transparency. However, maintaining high sustainability reporting ratings requires more than formal compliance and may depend on governance incentives, organizational capabilities, and substantive environmental initiatives. This study examines the influence of board compensation, human capital, and green innovation on sustainability reporting ratings among companies participating in the Asia Sustainability Reporting Rating (ASRRAT) in Indonesia. Using a quantitative approach, this study analyzes 69 firm-year observations from 23 companies that consistently participated in ASRRAT during 2021–2023. Data were obtained from annual reports and sustainability reports and analyzed using ordinal logistic regression. The results show that board compensation has a positive and significant effect on ASRRAT ratings. Human capital also has a positive and significant effect, while green innovation demonstrates a positive and significant effect. These findings indicate that stronger governance incentives, greater investment in human capital, and substantive green innovation are associated with a higher likelihood of achieving superior sustainability reporting ratings. The study contributes to the sustainability reporting literature by integrating governance incentives, organizational capabilities, and green innovation within a single empirical framework. The findings suggest that companies can strengthen sustainability reporting performance by aligning board incentives with responsible oversight, developing human capital capabilities, and implementing measurable environmental innovations.

1. INTRODUCTION

Sustainability reporting has increasingly become an important mechanism for demonstrating corporate transparency and accountability. Corporate performance is no longer evaluated solely on the basis of financial outcomes, but also on how effectively companies address environmental and social responsibilities and communicate their sustainability practices to stakeholders. In Indonesia, this expectation is reinforced by regulatory developments such as OJK Regulation No. 51/POJK.03/2017 and increasing stakeholder attention to environmental, social, and governance (ESG) issues (Migliorelli, 2021; Ozili & Iorember, 2024). Accordingly, sustainability reporting is not merely a disclosure requirement but also an important means of demonstrating the quality and credibility of corporate sustainability practices.

A critical issue emerges when ASRRAT outcomes are read across time rather than in a single year. Empirical observation of several listed firms during 2021 to 2023 indicates that rating positions are not always stable. Movement between tiers occurs in a way that resembles rating volatility. The dynamic matters because it challenges the assumption that regulatory compliance automatically develops into consistent reporting quality. The volatility suggests that some organizations may meet formal requirements yet struggle to sustain the internal conditions needed to reproduce high-quality disclosure year after year. The challenge is therefore not the presence of sustainability reporting but the persistence of reporting quality under repeated external assessment.

Table 1. ASRRAT Rating Fluctuation 2021-2023

No	Company Name	Year		
		2021	2022	2023
1	PT. United Tractor, Tbk	Gold	Gold	Silver
2	PT. Bank Negara Indonesia, Tbk	Gold	Gold	Gold
3	PT. BPD Jawa Timur, Tbk	Gold	Silver	Gold

Source: ASRRAT Report (Processed)

Sustaining superior ratings requires strategic resources that anchor ESG practice into verifiable outcomes. Green Innovation is frequently treated as the most visible proof of commitment because it produces operational changes that can be inspected, such as efficiency gains, process redesign, and performance improvements that support environmental responsibility (Kraus et al., 2020; Siagian & Siagian, 2025). Yet innovation rarely emerges without organizational capability. It depends on a workforce that can identify material ESG issues, maintain reliable internal data, and convert sustainability activities into disclosure that can

withstand scrutiny. It appears that Human Capital functions as a decisive pivot in this stage because employees carry the knowledge and competencies required for consistent measurement and credible reporting (Barney, 1991; Pratiwi et al., 2025).

Governance determines whether these resources are activated or remain symbolic. Commissioner Compensation represents an incentive instrument that can influence how seriously oversight is exercised. Agency Theory views compensation as a bonding mechanism that aligns monitoring effort with owners' interests (Jensen & Meckling, 1976). When incentives are designed appropriately, monitoring can shift from symbolic approval to rigorous supervision of sustainability performance, which is repeatedly associated with stronger disclosure outcomes (Itan et al., 2025; Zhu et al., 2024). From the Resource-Based View, green human capital and green innovation are firm-specific capabilities that can become difficult to replicate and therefore relevant to sustained superior ratings (Barney, 1991; Wang & Juo, 2021). Legitimacy Theory complements this logic by emphasizing that innovation-based evidence can operate as a credible signal that shapes stakeholder judgment about whether disclosure reflects substance rather than impression management (Dowling & Pfeffer, 1975; Putu Rosayanti et al., 2025).

Despite an expanding body of research, evidence on sustainability rating determinants remains mixed. Some studies report positive links between governance mechanisms and ESG-related outcomes, as well as between innovation and sustainability performance (Lestari, 2025; Liu et al., 2024). Other work suggests that incentives alone do not guarantee reporting quality when internal capability is limited, meaning higher compensation may not translate into better disclosure without adequate human capital. In addition, empirical work that places commissioner compensation, human capital, and green innovation into a joint framework for ASRRAT outcomes among firms listed on the Indonesia Stock Exchange remains limited. This gap is consequential because rating performance is plausibly shaped by the interaction between incentives, capability, and tangible outcomes rather than by isolated variables.

Therefore, this study addresses two related gaps in the sustainability reporting literature. First, prior research has predominantly examined sustainability disclosure through self-constructed disclosure indices or ESG measures, while evidence based on externally assessed sustainability reporting ratings remains limited, particularly in the Indonesian context. Second, existing studies tend to examine governance incentives, organizational capabilities, and environmental innovation separately, providing limited evidence on how these internal

organizational factors are associated with externally assessed sustainability reporting outcomes. To address these gaps, this study uses ASRRAT as an external sustainability reporting assessment and examines the roles of board compensation, human capital, and green innovation simultaneously. The study contributes to the literature by linking three complementary organizational mechanisms governance incentives, internal capabilities, and substantive environmental action to the likelihood of achieving higher sustainability reporting ratings. The findings are expected to provide a more integrated explanation of why some firms are able to sustain higher levels of externally assessed sustainability reporting performance.

2. LITERATURE REVIEW

Commissioner Compensation

Commissioner compensation refers to the remuneration package provided to board members in exchange for their supervisory functions and strategic advice. In the corporate governance structure, appropriate compensation is considered a crucial mechanism for aligning the interests of supervisors with the company's long-term goals. According to Agency Theory (Jensen & Meckling, 1976), compensation serves as a bonding mechanism to minimize agency costs and monitoring failures. Zhu et al. (2024) explain that adequate incentives encourage the board to prioritize ESG performance over short-term financial gains. In emerging markets, Itan et al. (2025) found that board remuneration is a vital determinant of ESG disclosure quality, as it motivates directors to allocate cognitive resources to verify the validity of sustainability reports.

Human Capital

Human Capital represents the aggregate knowledge, skills, and creativity embedded in an organization's employees. Based on the Resource-Based View (RBV) (Barney, 1991), human capital is a strategic intangible asset that is valuable, rare, and difficult to imitate. In the context of sustainability, Wang & Juo (2021) emphasize that general competence is insufficient; companies require Green Human Capital to translate sustainability visions into operational reality. Pratiwi et al. (2025) further argue that employees with specific environmental awareness act as enablers who ensure the accuracy and depth of sustainability reporting, thereby distinguishing high-performing companies from their competitors.

Green Innovation

Green Innovation involves the development of new products, processes, or technologies aimed at reducing environmental impact (Jing, 2023). From the perspective of Legitimacy Theory (Dowling & Pfeffer, 1975), companies utilize green innovation to secure social acceptance by providing tangible evidence of their environmental commitment. Tomashuk et al. (2023) describe green innovation as a tool to control harmful effects and promote ecological products. Consequently, the adoption of green innovation not only supports environmental targets but also strengthens the substantive quality of sustainability reports, reducing the risk of greenwashing accusations.

Asia Sustainability Reporting Rating (ASRRAT)

The Asia Sustainability Reporting Rating (ASRRAT), introduced by the National Center for Corporate Reporting (NCCR), is a rating system used to assess the transparency and compliance of corporate sustainability reports with global sustainability frameworks, including the Global Reporting Initiative (GRI) and Sustainable Development Goals (SDGs). Unlike self-reported sustainability performance, ASRRAT provides an external third-party assessment through rating categories ranging from Platinum, Gold, Silver, and Bronze. A higher ASRRAT rating reflects a more comprehensive disclosure of a company's economic, social, and environmental impacts.

The achievement of a higher ASRRAT rating can be understood through the interaction of governance incentives and organizational capabilities. From the perspective of Agency Theory, commissioner compensation represents an incentive mechanism that can align the interests of the board with the company's long-term objectives. Appropriate compensation may encourage stronger monitoring and greater attention to sustainability-related issues, thereby reducing the risk of inadequate oversight. Zhu et al. (2024) and Itan et al. (2025) indicate that higher board remuneration is associated with stronger oversight and ESG disclosure quality. In this context, compensation may encourage the board to pay greater attention to the reliability and substance of sustainability disclosures rather than treating reporting as a purely formal requirement.

Organizational capability provides a complementary explanation through the Resource-Based View (RBV). Human capital represents an intangible organizational resource embodied in employees' knowledge, skills, and competencies and can contribute to the development of capabilities that are difficult to replicate. In sustainability reporting, these capabilities are

important because employees are involved in identifying sustainability-related information, managing environmental data, and translating organizational activities into reliable reporting. Yuzliza et al. (2020) and Pratiwi et al. (2025) emphasize the importance of environmental knowledge and employee capabilities in supporting sustainable practices and sustainability reporting. Thus, stronger human capital may enhance a firm's capacity to generate the information and evidence required to achieve higher ASRRAT ratings.

Green innovation provides another dimension for understanding sustainability reporting outcomes through Legitimacy Theory. Firms may adopt environmentally oriented innovations to demonstrate that their sustainability commitments are reflected in substantive organizational practices. Green innovation can include the development of environmentally friendly products, improvements in production processes, energy efficiency, and waste reduction. Such practices provide tangible evidence of environmental commitment that can strengthen the credibility of sustainability disclosures. In the context of ASRRAT, the presence of substantive green innovation may therefore reinforce the consistency between what firms report and what they actually implement, reducing the risk of sustainability claims being perceived as merely symbolic and strengthening the company's legitimacy among external assessors.

Research Hypothesis

Based on the literature review above, the hypotheses proposed in this study are as follows:

- H1 : Commissioner Compensation has a positive effect on ASRRAT.
- H2 : Human Capital has a positive effect on ASRRAT.
- H3 : Green Innovation has a positive effect on ASRRAT.
- H4 : Commissioner Compensation, Human Capital, and Green Innovation simultaneously have a significant effect on ASRRAT.

3. METHODOLOGY

Research Approach and Data

This study adopts a quantitative verification approach to empirically examine the influence of governance and resource-based variables on sustainability reporting rating outcomes. The observation period covers 2021 to 2023, capturing the sustainability reporting performance of

companies participating in the Asia Sustainability Reporting Rating (ASRRAT) during the post-pandemic period.

The target population consists of companies listed on the Indonesia Stock Exchange (IDX) that participated in ASRRAT. A purposive sampling method was employed based on the criteria of continuous participation in ASRRAT during the observation period and the availability of the required financial and sustainability-related data. Based on these criteria, 23 companies were selected, resulting in 69 firm-year observations. The study uses secondary data obtained from annual reports and sustainability reports available through the IDX and the respective company websites.

Variable Measurement

The variables in this study consist of Commissioner Compensation, Human Capital, Green Innovation, and ASRRAT. The monetary measures of Commissioner Compensation and Human Capital were transformed using the natural logarithm (Ln) to reduce differences in scale across firms and the influence of extreme values.

Commissioner Compensation represents the governance incentive provided to the board of commissioners. It is measured by the total annual remuneration received by the board, including salary and bonuses, and is transformed into its natural logarithm (Ln) value.

Human Capital represents the firm's investment in its employees as an organizational resource. It is measured by the total expenditure on employee salaries, training, and development and is subsequently transformed into its natural logarithm (Ln) value.

Green Innovation represents tangible environmental commitment and is measured using a disclosure index. The measurement considers four key areas of green innovation: green technology, energy reduction, waste control, and eco-products. The scoring is based on the disclosure of the implementation of these areas.

ASRRAT is the dependent variable and is measured as an ordinal variable based on the rating category achieved by each company. The rating categories are coded as follows: Platinum = 5, Gold = 4, Silver = 3, Bronze = 2, and White = 1.

Data Analysis

The data were analyzed using Ordinal Logistic Regression with the assistance of SPSS software. Ordinal Logistic Regression was selected because the dependent variable, ASRRAT, has an ordinal structure in which the rating categories represent an ordered level of sustainability reporting performance. This method enables the analysis to estimate the relationship between the independent variables and the probability of achieving a higher ASRRAT rating category.

Before interpreting the regression results, several diagnostic and model-fit assessments were conducted. Multicollinearity was assessed using Variance Inflation Factor (VIF) and Tolerance values to identify potential correlations among the independent variables. The Test of Parallel Lines was conducted to assess the proportional odds assumption required in ordinal logistic regression. In addition, the Goodness-of-Fit test was used to evaluate the compatibility between the model and the observed data, while the Model Fitting Information was used to determine whether the model containing the independent variables significantly improved the fit compared with the intercept-only model. Finally, the Nagelkerke Pseudo R-Square was reported as an indicator of the model's explanatory strength.

The ordinal logistic regression model is specified as follows:

$$\text{ASRRAT} = f(\text{Commissioner Compensation, Human Capital, Green Innovation})$$

where ASRRAT represents the sustainability reporting rating, Commissioner Compensation represents the remuneration received by the board of commissioners, Human Capital represents expenditure related to employees, and Green Innovation represents the firm's disclosure of green innovation practices.

4. RESULT AND DISCUSSIONS

Based on Table 2, the descriptive statistics provide an overview of the 69 firm-year observations from companies participating in ASRRAT during 2021–2023. The analysis presents the minimum, maximum, mean, and standard deviation of ASRRAT, Commissioner Compensation, Human Capital, and Green Innovation.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ASRRAT	69	3.00	5.00	4.1594	0.55897
Commissioner Compensation	69	21.68	27.40	23.7983	1.33159

	N	Minimum	Maximum	Mean	Std. Deviation
Human Capital	69	21.99	31.56	27.6461	2.08880
Green Innovation	69	0.30	1.00	0.6449	0.25584

Source: Processed Data for 2025

The ASRRAT variable has a mean of 4.1594, with values ranging from 3.00 to 5.00 and a standard deviation of 0.55897. The minimum score of 3.00 indicates that the lowest rating observed in the sample was Silver, while the maximum score of 5.00 represents the Platinum category. The mean value of 4.1594 indicates that the sampled observations were predominantly concentrated around the Gold rating category.

Commissioner Compensation has a mean of 23.7983, with a minimum value of 21.68 and a maximum value of 27.40. The standard deviation is 1.33159, indicating variation in the level of commissioner compensation across the sampled firms. Since the variable is measured using the natural logarithm of total annual remuneration, the reported values represent the transformed compensation data.

Human Capital has a mean value of 27.6461, with a minimum of 21.99 and a maximum of 31.56. The standard deviation of 2.08880 indicates variation in the level of expenditure associated with employee salaries, training, and development across the sampled firms. The relatively broad range between the minimum and maximum values indicates differences in the level of human capital investment among the observed companies.

Green Innovation has a mean value of 0.6449, with values ranging from 0.30 to 1.00 and a standard deviation of 0.25584. The mean indicates that the sampled firms disclosed, on average, a relatively substantial proportion of the green innovation indicators assessed in this study. The variation between the minimum and maximum values also indicates differences in the extent of green innovation disclosure across the sampled firms.

The categorical distribution of the dependent variable, ASRRAT, is presented in Table 3. The distribution provides an overview of the sustainability reporting rating categories observed among the sampled firms during the 2021–2023 observation period.

Table 3. Frequency of ASRRAT Rating

Rating Category	Score	Frequency (N)	Percentage (%)
Silver	3	5	7.3
Gold	4	47	68.1
Platinum	5	17	24.6

Rating Category	Score	Frequency (N)	Percentage (%)
Total		69	100

Source: Processed Data for 2025

The results show that the Gold category represents the largest proportion of observations, accounting for 47 observations (68.1%). The Platinum category accounts for 17 observations (24.6%), while the Silver category represents 5 observations (7.3%). No observations were recorded in the Bronze or White categories during the observation period.

The concentration of observations in the Gold category indicates that most sampled firm-year observations achieved a relatively high ASRRAT rating. At the same time, the presence of observations in the Silver and Platinum categories indicates variation in sustainability reporting performance across the sampled firms. This distribution confirms the ordinal structure of the ASRRAT variable and supports the use of ordinal logistic regression in the subsequent analysis.

The distribution also indicates that the sampled firms were not concentrated in a single rating category. Therefore, differences in ASRRAT ratings provide sufficient variation to examine whether Commissioner Compensation, Human Capital, and Green Innovation are associated with the likelihood of achieving a higher sustainability reporting rating. As noted by Kustinah (2022), sustainable performance is influenced by how effectively firms manage their internal mechanisms in responding to external demands.

Prior to conducting the ordinal logistic regression analysis, a multicollinearity assessment was performed to examine whether substantial correlations existed among the independent variables. The results are presented in Table 4.

Table 4. Multicollinearity Test Results

	Coefficients ^a					Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.		
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7.561	1.386		5.455	0.000		
Commissioner Compensation	-0.175	0.054	-0.417	-3.220	0.002	0.316	3.161
Human Cap	-0.033	0.025	-0.123	-1.298	0.199	0.589	1.697
Green Innovation	2.606	0.326	1.193	8.005	0.000	0.239	4.177

Source: Processed Data for 2025

The results show that the Variance Inflation Factor (VIF) values for Commissioner Compensation, Human Capital, and Green Innovation are 3.161, 1.697, and 4.177, respectively. All VIF values are below the commonly used threshold of 10. The corresponding Tolerance values are 0.316, 0.589, and 0.239, respectively, which are above the minimum threshold of 0.10.

These results indicate that there is no indication of problematic multicollinearity among the independent variables. Therefore, the three predictors can be included simultaneously in the subsequent analysis without evidence that their relationships create excessive redundancy among the explanatory variables. This diagnostic result supports the continuation of the ordinal logistic regression analysis to examine the influence of Commissioner Compensation, Human Capital, and Green Innovation on ASRRAT ratings.

The feasibility and fit of the ordinal logistic regression model were assessed using the Model Fitting Information, Goodness-of-Fit tests, Test of Parallel Lines, and Pseudo R-Square measures. The results are presented in Table 5.

Table 5. Model Feasibility and Fit Tests

Test	Statistic	Value	df	Sig.	Conclusion
Test of Parallel Lines	Chi-Square	4.339	3	0.227	Assumption Met
Goodness-of-Fit	Pearson Chi-Square	43.919	133	0.084	No evidence of lack of fit
	Deviance Chi-Square	39.987	133	1.000	No evidence of lack of fit
Model Fitting Information	-2 Log Likelihood (Intercept)	114.241			
	-2 Log Likelihood (Final)	74.255			
	Chi-Square	39.986	3	<0.001	Significant Model
Pseudo R-Square	Cox & Snell	0.659			
	Nagelkerke	0.815			
	McFadden	0.650			

Source: Processed Data for 2025

The Model Fitting Information indicates that the ordinal logistic regression model provides a significantly better fit than the intercept-only model. The model produces a Chi-Square value of 39.986 with a significance level of less than 0.001. Since the significance value is below 0.05, the model containing Commissioner Compensation, Human Capital, and Green Innovation significantly improves the model fit compared with the intercept-only model. This indicates that

the three independent variables collectively contribute to explaining differences in ASRRAT rating categories.

The Goodness-of-Fit results further indicate that there is no evidence of a significant lack of fit between the model and the observed data. The Pearson Chi-Square test produces a value of 43.919 with 133 degrees of freedom and a significance value of 0.084, which is above 0.05. Similarly, the Deviance Chi-Square produces a value of 39.987 with 133 degrees of freedom and a significance value of 1.000. These results indicate that the model does not show a statistically significant discrepancy with the observed data and is therefore adequate for the subsequent interpretation of the regression coefficients.

The Test of Parallel Lines produces a Chi-Square value of 4.339 with a significance value of 0.227. Since the significance value exceeds 0.05, there is no evidence of a violation of the proportional odds assumption. Thus, the ordinal logistic regression model satisfies the parallel-lines assumption, allowing the estimated coefficients to be interpreted under the proportional odds framework.

The Pseudo R-Square measures provide additional information regarding the explanatory strength of the model. The Cox and Snell Pseudo R-Square is 0.659, the Nagelkerke Pseudo R-Square is 0.815, and the McFadden Pseudo R-Square is 0.650. The Nagelkerke value of 0.815 indicates relatively strong explanatory performance of the model. However, these values are pseudo R-square measures and should not be interpreted as the percentage of variance in ASRRAT ratings explained by the independent variables.

The empirical relationships between governance incentives, internal capabilities, and ASRRAT outcomes are examined using the Parameter Estimates presented in Table 6.

Table 6. Hypothesis Testing Results

Variable	Estimate (β)	Std. Error	Wald	Sig.	Odds Ratio (e^{β})	Decision
Commissioner Compensation (X1)	1.986	0.768	6.685	0.010	7.286	Supported
Human Capital (X2)	0.785	0.301	6.800	0.009	2.192	Supported
Green Innovation (X3)	0.338	0.099	11.693	0.001	1.402	Supported

Source: Processed Data for 2025

The results in Table 6 show that Commissioner Compensation (X1) has a positive and significant association with ASRRAT ratings. The estimated coefficient is 1.986 with a significance value of 0.010, which is below the 0.05 threshold. Therefore, H1 is supported. The positive

coefficient indicates that higher commissioner compensation is associated with a greater likelihood of achieving a higher ASRRAT rating, holding the other variables constant.

The odds ratio of 7.286 indicates that a one-unit increase in the natural logarithm of commissioner compensation is associated with approximately 7.29 times higher odds of being in a higher ASRRAT category, holding Human Capital and Green Innovation constant. This finding suggests that stronger governance incentives are positively associated with sustainability reporting performance as reflected in the ASRRAT rating.

H1: Commissioner Compensation has an effect on Asia Sustainability Reporting Rating

The results in Table 6 indicate that Commissioner Compensation has a positive and significant effect on ASRRAT ratings. The estimated coefficient is 1.986 with a significance value of 0.010, which is below the 0.05 significance level. Therefore, H1 is supported. The positive coefficient indicates that higher commissioner compensation is associated with a greater likelihood of achieving a higher ASRRAT rating, holding Human Capital and Green Innovation constant.

The odds ratio of 7.286 indicates that a one-unit increase in the natural logarithm of commissioner compensation is associated with approximately 7.29 times higher odds of being in a higher ASRRAT category, *ceteris paribus*. This finding indicates that commissioner compensation is not merely a financial arrangement within the corporate governance structure but may also function as an incentive mechanism associated with stronger sustainability reporting outcomes.

The finding is consistent with Agency Theory, which views compensation as a mechanism for aligning the interests of managers and corporate governance actors with organizational objectives. Jensen and Meckling (1976) explain that agency relationships may generate monitoring problems and agency costs because the interests of organizational actors are not always perfectly aligned. In this context, appropriate compensation can provide incentives for the board to devote greater attention to monitoring managerial activities and organizational performance. When sustainability reporting becomes part of corporate accountability, stronger monitoring may also extend to the quality, completeness, and credibility of sustainability-related information.

The result is also consistent with Al-Shaer and Zaman (2019), who link executive compensation with sustainability reporting assurance. Their findings suggest that compensation arrangements can be associated with stronger attention to the credibility and assurance of sustainability reporting. In the context of this study, the positive association between commissioner compensation and ASRRAT suggests that governance incentives may encourage more intensive oversight of sustainability reporting processes. Such oversight is particularly relevant when sustainability reporting is assessed externally through ASRRAT rather than relying solely on internally constructed disclosure measures.

The finding also provides a complementary perspective to Kustinah (2022), who examined corporate performance and the implementation of the Triple Bottom Line among Indonesian industrial companies. While the broader sustainability performance of firms may be influenced by different governance and organizational characteristics, the present result indicates that compensation directed toward the board of commissioners is positively associated with sustainability reporting ratings. Thus, governance incentives may represent one organizational mechanism through which sustainability objectives receive greater supervisory attention.

Overall, the H1 finding suggests that stronger compensation incentives are associated with a greater likelihood of achieving higher ASRRAT ratings. However, this result should be interpreted as an association rather than evidence that compensation alone determines reporting quality. The effectiveness of governance incentives may depend on whether the organization possesses the internal capabilities and substantive sustainability practices necessary to support credible reporting.

H2: Human Capital has an effect on Asia Sustainability Reporting Rating

The results show that Human Capital has a positive and significant effect on ASRRAT ratings, with an estimated coefficient of 0.785 and a significance value of 0.009. Because the significance value is below 0.05, H2 is supported. The positive coefficient indicates that firms with higher levels of human capital expenditure are associated with a greater likelihood of achieving higher ASRRAT ratings, holding Commissioner Compensation and Green Innovation constant.

The odds ratio of 2.192 indicates that a one-unit increase in the natural logarithm of Human Capital expenditure is associated with approximately 2.19 times higher odds of being in a higher ASRRAT category, *ceteris paribus*. This result indicates that differences in investment in

employee salaries, training, and development are associated with differences in sustainability reporting performance.

This finding can be explained through the Resource-Based View (RBV), which considers human resources as strategic assets that can contribute to organizational capabilities and sustained performance. Barney (1991) argues that valuable and difficult-to-imitate resources can become important sources of organizational advantage. In the context of sustainability reporting, human capital is relevant because the production of credible sustainability information requires employees who are capable of collecting, processing, interpreting, and communicating non-financial information.

The relationship becomes particularly important because sustainability reporting involves more than the publication of information. Firms need internal personnel who can identify relevant sustainability indicators, maintain supporting documentation, coordinate information across organizational units, and translate operational activities into information that can be communicated to external stakeholders. Consequently, greater investment in employees and their development may strengthen the organizational capacity required to prepare more comprehensive and consistent sustainability reports.

This interpretation is supported by Yusliza et al. (2020), who emphasize the importance of green human capital in supporting organizational environmental practices. Similarly, Pratiwi et al. (2025) demonstrate the importance of green human capital, employee environmental awareness, and sustainable innovation in organizational sustainability. These studies provide a basis for understanding why employee capabilities can become an important internal resource for sustainability-related organizational outcomes.

Nevertheless, the Human Capital variable in this study should not be interpreted as a direct measure of Green Human Capital. The empirical measurement captures expenditure related to employee salaries, training, and development. Therefore, the present finding should be understood more broadly as evidence that investment in human resources is associated with higher sustainability reporting performance. The green human capital literature provides a theoretical explanation for why employee capabilities may become relevant to sustainability activities, but the empirical construct examined here remains Human Capital.

The result also complements the broader argument that governance mechanisms alone may not be sufficient to produce high-quality sustainability reporting. Compensation may create

incentives for stronger oversight, but employees provide the operational capacity required to implement reporting processes. In this sense, governance incentives and human capital represent complementary organizational mechanisms: the former provides motivation and oversight, while the latter provides the knowledge and capabilities needed to execute sustainability-related activities and reporting.

Therefore, H2 is supported, indicating that stronger investment in human capital is positively associated with the likelihood of achieving a higher ASRRAT rating. The finding reinforces the RBV perspective that organizational capabilities embedded in employees can contribute to sustainability-related performance and reporting quality (Barney, 1991).

H3: Green Innovation has an effect on Asia Sustainability Reporting Rating

Green Innovation also has a positive and significant effect on ASRRAT ratings. The estimated coefficient is 0.338 with a significance value of 0.001, which is below the 0.05 threshold. Therefore, H3 is supported. The positive coefficient indicates that firms with greater disclosure of green innovation practices are associated with a greater likelihood of achieving higher ASRRAT ratings, holding Commissioner Compensation and Human Capital constant.

The odds ratio of 1.402 indicates that a one-unit increase in the Green Innovation measure is associated with approximately 1.40 times higher odds of being in a higher ASRRAT category, *ceteris paribus*. Because Green Innovation is measured using a disclosure index, this result should not be interpreted as each individual innovation automatically increasing the rating by 1.40 times. Rather, the coefficient indicates a positive association between the level of green innovation captured by the study's measurement and the likelihood of achieving a higher ASRRAT category.

The finding is consistent with Legitimacy Theory. Dowling and Pfeffer (1975) explain that organizations seek legitimacy by maintaining congruence between organizational activities and the values and expectations of the broader social environment. From this perspective, green innovation can provide substantive evidence that environmental commitments are reflected in actual organizational practices. Compared with sustainability statements that primarily communicate intentions, environmentally oriented innovations may provide more concrete evidence of how a company responds to environmental concerns.

Kraus et al. (2020) emphasize the relationship between environmental strategy, green innovation, and environmental performance. Their work supports the view that green innovation

can function as an important component of corporate environmental strategy rather than merely as a communication activity. In addition, Yusliza et al. (2020) highlight the relevance of green human capital in supporting environmental practices, suggesting that organizational capabilities and environmentally oriented innovation can be interconnected within sustainability strategies.

The positive association found in this study is particularly relevant to ASRRAT because the dependent variable represents a sustainability reporting rating rather than a conventional financial performance indicator. Firms that implement and disclose environmental initiatives have greater opportunity to demonstrate consistency between sustainability claims and organizational practices. Green technology, energy reduction, waste control, and eco-products can therefore provide substantive information that strengthens the environmental dimension of sustainability reporting.

This finding is also consistent with Liu et al. (2024), who examine the relationship between green innovation and corporate ESG performance. The relationship suggests that green innovation is not only an operational response to environmental challenges but can also be associated with broader sustainability outcomes. In the present study, this relationship is reflected specifically in the likelihood of obtaining a higher ASRRAT rating.

The result should nevertheless be interpreted carefully. A higher level of green innovation disclosure does not necessarily establish that all reported environmental initiatives generate measurable environmental improvements. The present analysis demonstrates a statistical association between the Green Innovation measure and ASRRAT ratings. Therefore, the finding provides empirical support for the relevance of substantive environmental initiatives in sustainability reporting performance, but it should not be interpreted as proof that green innovation alone guarantees superior environmental outcomes.

Overall, H3 is supported. The finding indicates that green innovation is an important organizational factor associated with higher ASRRAT ratings. This result strengthens the legitimacy-based argument that firms can enhance the credibility of sustainability reporting when environmental commitments are accompanied by observable organizational practices (Dowling & Pfeffer, 1975).

H4: Commissioner Compensation, Human Capital, and Green Innovation jointly have an effect on Asia Sustainability Reporting Rating

The joint contribution of Commissioner Compensation, Human Capital, and Green Innovation is assessed through the Model Fitting Information presented in Table 5. The ordinal logistic regression model produces a Chi-Square value of 39.986 with a significance value of less than 0.001. Because the significance value is below 0.05, the model containing the three independent variables provides a significantly better fit than the intercept-only model. Therefore, H4 is supported.

This result indicates that Commissioner Compensation, Human Capital, and Green Innovation collectively contribute to differences in ASRRAT rating categories. The finding is important because it suggests that sustainability reporting performance cannot be understood solely from a governance, resource, or environmental perspective. Rather, higher reporting ratings are associated with a combination of governance incentives, organizational capabilities, and substantive environmental practices.

The joint result strengthens the theoretical framework developed in this study. Agency Theory explains the role of governance incentives through commissioner compensation, while the Resource-Based View explains the contribution of human capital as an organizational resource (Jensen & Meckling, 1976; Barney, 1991). Legitimacy Theory provides an additional explanation for the role of green innovation by emphasizing the importance of substantive organizational actions in maintaining legitimacy with external stakeholders (Dowling & Pfeffer, 1975).

The three mechanisms can therefore be viewed as complementary rather than isolated. Commissioner compensation provides an incentive for stronger oversight; human capital provides the organizational capacity to implement and document sustainability practices; and green innovation provides tangible environmental activities that can support the credibility of sustainability disclosures. The combination of these mechanisms offers a more integrated explanation of why firms differ in their ASRRAT performance.

This integrated perspective also provides a distinction from studies that examine sustainability through a single organizational dimension. Kustinah (2022), for example, discusses sustainability performance in relation to the implementation of the Triple Bottom Line, while the present study combines governance incentives, internal resources, and green innovation in explaining an externally assessed sustainability reporting outcome. The contribution of the present study therefore lies not simply in examining three independent variables simultaneously,

but in demonstrating that sustainability reporting performance can be associated with interconnected organizational mechanisms.

Taken together, the findings indicate that achieving a higher ASRRAT rating is associated with the alignment of governance incentives, internal human resources, and environmental innovation. The result does not imply that these factors are the only determinants of sustainability reporting performance. Rather, the significant joint model indicates that these three organizational dimensions collectively provide meaningful explanatory information for differences in ASRRAT rating categories.

Taken together, the empirical findings provide support for all four hypotheses. Commissioner Compensation, Human Capital, and Green Innovation each show positive and statistically significant associations with ASRRAT ratings, while the joint model is also statistically significant. The findings therefore support the proposed argument that sustainability reporting performance is associated with the interaction of governance incentives, organizational capabilities, and substantive environmental practices.

The findings also provide an important distinction between the production of sustainability information and the organizational conditions that support that information. Sustainability reporting requires not only a formal reporting mechanism but also governance attention, human resources, and organizational activities that generate relevant sustainability information. In this context, commissioner compensation may strengthen oversight incentives, human capital may provide the capabilities needed to produce reliable information, and green innovation may provide substantive environmental evidence that can be communicated through sustainability reporting.

The use of ASRRAT as the dependent variable further strengthens the contribution of these findings. Rather than relying solely on a self-constructed sustainability disclosure index, the study examines an externally assessed sustainability reporting rating. Consequently, the results provide evidence that internal governance incentives, organizational resources, and green innovation are associated with differences in firms' externally assessed sustainability reporting outcomes. This supports the central argument of the study that higher-quality sustainability reporting is more likely to emerge when organizational incentives, capabilities, and substantive sustainability practices are aligned.

5. CONCLUSION

This study finds that Commissioner Compensation, Human Capital, and Green Innovation are positively and significantly associated with ASRRAT ratings among companies participating in ASRRAT during 2021–2023. The findings indicate that higher sustainability reporting performance is associated with stronger governance incentives, greater investment in human capital, and more substantive green innovation practices. These factors jointly contribute to explaining differences in sustainability reporting ratings.

The study contributes to the sustainability reporting literature by examining these three organizational dimensions using ASRRAT as an externally assessed sustainability reporting rating. The findings suggest that companies seeking to strengthen their sustainability reporting performance should align board incentives with effective oversight, develop employee capabilities, and implement measurable environmental innovations. However, the study is limited to 23 ASRRAT-participating companies during 2021–2023. Future research may extend the observation period and incorporate additional governance, organizational, and industry-related factors.

ACKNOWLEDGEMENT

We wish to extend our sincere appreciation to the Institute for Research and Community Service (LPPM) at Jenderal Achmad Yani University for the vital financial sponsorship provided through the Internal Research Grant scheme 2025. This support was instrumental. We also acknowledge the Faculty of Economics and Business for the administrative resources and the conducive academic environment that facilitated the completion of this research.

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