Do Independent Commissioners Boost the Effect of Profitability on Sustainability Disclosure? Evidence from Indonesian Palm Oil Companies

Salma Nur Azizah[1], *Putriesti* Mandasari[2*], and *Raden Kunto* Adi[3]

[1,2,3]Study Program of Agribusiness, Universitas Sebelas Maret, Surakarta, 57126, Indonesia

Abstract. Addressing sustainability risks in Indonesian palm oil companies depends on the quality of their governance. This is especially significant in light of increased scrutiny over corporate responsibility in the palm oil sector. The objective of this study is to investigate, under the Global Reporting Initiative (GRI) 2021 context, whether the presence of independent commissioners (representing corporate governance) moderates the influence of profitability on sustainability disclosure. We used moderated regression analysis on 47 observations from 13 listed palm oil companies in Indonesia, covering the period 2021 to 2024. The findings reveal that the moderating role of independent commissioners is muted. However, independent commissioners directly influence sustainability disclosure. This study provides further evidence on the direct impact of independence commissioners on the sustainability disclosure of palm oil companies. This result also confirms the agency, legitimacy, and signaling theories. The results highlight that improving corporate governance is critical to mitigating greenwashing risk and ensuring credible sustainability disclosure. Addressing sustainability issues through stronger governance practices will not only help restore public trust but also strengthen companies' global competitiveness. These insights are relevant for regulators and investors seeking accountability in the resource-based sectors.

1 Introduction

The Indonesian palm oil sector is consistently under strain due to environmental, social, and economic sustainability concerns. Palm oil and rubber expansion drove 82% of deforestation in Indonesia from 2000 to 2021 [1]. At the same time, Malaysia was experiencing a deforestation rate 3 times greater [1]. As mentioned by Rahman *et al.,* [1], palm oil plantations have replaced all primary forests and expanded secondary forests, scrubland, and cultivated land. Another related problem is land grabbing, resulting from an unequal land ownership schema [2]. This underscores the need for good governance mechanisms to avert negative reactions such as boycotting, sanctioning, and divesting.

* Corresponding author: putriesti_mandasari@staff.uns.ac.id

Market access for Indonesian palm oil is limited due to the European Union Deforestation Regulation (EUDR), which links the palm oil sector to emissions from deforestation [3]. In response, the stakeholders support companies in implementing the Global Reporting Initiative (GRI) 2021 and the Indonesian Sustainable Palm Oil (ISPO) certification. The GRI 2021 can be a crucial guideline for Indonesian palm oil companies to disclose environmental, social, and economic activities. The GRI 2021 is acknowledged as a frontrunner and applied by more than 10,000 organizations around the globe [4]. Furthermore, 67.1% of large companies have adopted the GRI [5]. Most of these companies come from the Organisation for Economic Cooperation and Development (OECD) countries, 22% from multinationals, and 3% from non-OECD countries [5]. It also means that Indonesia, which is not an OECD country, still struggles to implement GRI-based sustainability reporting disclosure practices.

Strength in profit provides companies with a greater ability to disclose quality sustainability data [6]. Hence, sustainability disclosure is closely correlated to profit. Companies with strong financial performance tend to have greater resources, which may affect the level of transparency palm oil companies can or want to provide regarding sustainability. Selective reporting of emissions and greenwashing, however, are issues.

It is evident that good financial performance is not always accompanied by transparent and comprehensive sustainability disclosure (greenwashing phenomenon) [6]. This evidence shows that companies are selective in maintaining their image and profits [6]. A global study by Carreira *et al*., [6] found that profitability has a positive and significant effect on sustainability disclosure based on cross-industry and cross-country datasets. This raises the question of whether financial performance (profitability) influences corporate sustainability disclosure in the palm oil subsector in Indonesia, given that the study used a global sample and did not focus on the palm oil subsector. The Indonesian literature is also limited to ISPO/RSPO certification and environmental compliance, with little discussion of systematic governance. Furthermore, no research has been found examining the effect of profitability on sustainability disclosure based on the GRI 2021, with the independent commissioners as a moderating factor in this relationship. Therefore, this study seeks to fill this gap by examining the effect of profitability on sustainability disclosure under the GRI 2021 in Indonesian palm oil companies and testing whether board independence amplifies this relationship.

The findings are useful for policymakers and investors considering the role of corporate governance in disclosing sustainability information more transparently. The novelty of this study is introducing governance (measured by the percentage of independent commissioners) as a moderating variable. This approach gives an understanding of how governance shapes the relationship between financial performance (profitability) and the level of sustainability disclosure under the GRI 2021 standard. This study shows that board independence does not intensify the effect of profitability on sustainability disclosure under the 2021 GRI Standards. Instead, the results indicate a direct and positive effect of board independence on sustainability disclosure across all regression models. As the scope of this study is Indonesian palm oil companies, this study also contributes to a better understanding of transparency and accountability in these resource-based companies.

2 Materials and Methods

2.1 Sample

This study employs data from 13 palm oil companies listed on the Indonesian Stock Exchange over 4 years of observation (2021–2024), for a total of 47 companies. We collected data from the annual reports, audited financial statements, and sustainability reports. The data

was accessed through the companies' official websites and the Indonesia Stock Exchange (IDX) portal. The profitability variables (RoA and RoE) and control variables (liquidity, percentage of public share ownership, and asset growth) were obtained from audited financial reports, while governance data (percentage of independent commissioners) was calculated from annual reports.

2.2 Measurements

Table 1 presents the operational definitions of variables used in the study, including their measurements and units. The profitability metrics are Return on Assets (RoA) and Return on Equity (RoE), both expressed as percentages. Governance is calculated by dividing the number of independent commissioners by the total number of commissioners. Sustainability disclosure is measured using content analysis of 126 GRI 2021 indicators for each palm oil company, with the ratio of disclosed items to the calculated total indicators (126) used.

Table 1. Operational Definition of Variables

Variable	Definition	Measurement	Unit
Return on Assets (RoA)	An indicator of how efficiently a company uses its assets to generate profits.	(Net Income ÷ Total Assets) × 100%	%
Return on Equity (RoE)	An indicator of the profitability relative to shareholders' equity.	(Net Income ÷ Total Equity) × 100%	%
Percentage of Independent Commissioners	The percentage of independent members on the Board of Commissioners	(Independent Commissioners ÷ Total Commissioners) × 100%	%
Liquidity	The company's ability to meet short-term obligations.	(Current Assets ÷ Current Liabilities) × 100%	%
Percentage of Public Share Ownership	The percentage of shares owned by public shareholders	(Public Shares ÷ Total Shares) × 100%	%
Assets Growth	Growth rate of total assets from previous year	{(Total asset $_t$ - Total asset $_{t-1}$)÷ Total asset $_{t-1}$} × 100%	%
GRI 2021 Disclosure (126 items)	Extent of sustainability disclosure based on GRI 2021 (1 = disclosed, 0 = not disclosed)	$GRIDIj = \frac{\Sigma Xij}{nj} \times 100\%$	%

2.3 Statistical Analysis

To test the moderating role of the independent commissioners on the effect of profitability on sustainability disclosure, we conducted a moderated regression analysis. Models 1A and 2A assessed the direct effect of profitability (RoA and RoE) on disclosure, while Models 1B and 2B incorporated the interaction term between profitability and the independent commissioners to evaluate the moderation effect. The β_0 is the constant, β_1 to β_5 are the variable coefficients, and ε is the error term.

$$SD = \beta_0 + \beta_1 RoA + \beta_2 KI + \beta_3 Liquidity + \beta_4 Public + \beta_5 Growth + \varepsilon \quad \text{…….(1A)}$$
$$SD = \beta_0 + \beta_1 RoA + \beta_2 KI + \beta_3 (RoA*KI) + \beta_4 Liquidity + \beta_5 Public + \beta_6 Growth + \varepsilon \quad \text{….. (1B)}$$

$$SD = \beta_0 + \beta_1 RoE + \beta_2 KI + \beta_3 Liquidity + \beta_4 Public + \beta_5 Growth + \varepsilon \quad \text{…….(2A)}$$
$$SD = \beta_0 + \beta_1 RoE + \beta_2 KI + \beta_3 (RoE*KI) + \beta_4 Liquidity + \beta_5 Public + \beta_6 Growth + \varepsilon \quad \text{…….(2B)}$$

2.1 Research Framework

The framework of this study is provided in Figure 1. It depicts the connection between sustainability disclosure and its determinants (i.e., profitability (RoA and RoE), independent commissioner, liquidity, public share ownership, and asset growth).

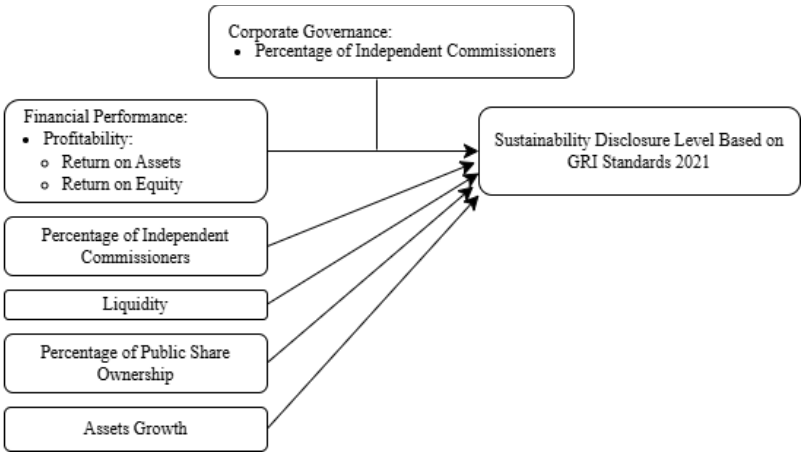

Figure 1. Conceptual framework

3 Results and Discussion

3.1 GRI 2021-Based Sustainability Disclosure

To measure sustainability disclosure, this study uses a standard interval classification of disclosure level [7]. Disclosure levels were classified according to the standard as low (0%–33%), moderate (34%–66%), or high (67%–100%). The score shows that the average disclosure of Indonesian palm oil companies for the years 2021 to 2024 under GRI 2021 is 64.41%. It indicates a moderate level of sustainability disclosure. The range of scores—from 29% to 94%—demonstrates a wide variation in the extent to which companies disclose their commitments. This wide variation is likely due to several structural differences. Companies differ in ownership structure, governance quality, profitability, and access to sustainability-related resources, all of which shape their disclosure capacity and incentives. In the palm oil companies, heterogeneity in operational scale, export orientation, and exposure to international scrutiny may also contribute to the uneven adoption of GRI reporting practices. Together, these structural characteristics help explain why sustainability disclosure varies so widely across companies.

3.2 Profitability, Sustainability Disclosure (GRI 2021), and the Moderating Role of Board Independence

Table 2 shows that the effect of profitability on sustainability disclosure varies across models, and the moderated effect of independent commissioners does not meet. RoA has an insignificant direct effect (Model 1A), whereas RoE has a significant direct effect on the level of sustainability disclosure (Model 2A). In the moderated regression models (Models 1B and 2B), however, both profitability measures (RoA and RoE) are insignificant. In addition, Table 2 also indicates that independent commissioners, as a corporate governance mechanism, do not moderate the effect of profitability (RoA and RoE) on sustainability disclosure. Instead, their influence operates primarily through a direct effect on sustainability disclosure. This direct effect of independent commissioners is robust and remains consistent across all estimated models (Models 1A, 1B, 2A, 2B). However, the levels of statistical significance vary across those models (p = 0.001, 0.032, 0.030, and 0.066, respectively).

All regression models satisfied the classical assumption tests, including normality (Kolmogorov–Smirnov), heteroscedasticity (residual scatter plots), and autocorrelation (Durbin–Watson). Multicollinearity was detected in Model 2B (RoE × %KI) due to the interaction between the original variables. However, this issue can be mitigated by mean-centering, thereby ensuring that statistical inference remains appropriate.

Table 2. Results of Moderated Regression

	Model			
	(1A)	**(1B)**	**(2A)**	**(2B)**
RoA	0.007 (0.004)	0.003 (0.006)	-	-
RoA*%KI	-	-0.087 (0.075)	-	-
RoE	-	-	0.001** (0.000)	0.000 0.002
RoE*%KI	-	-	-	-0.020 (0.027)
KI	0.400* (0.212)	0.570** (0.257)	0.447** (0.199)	0.663* (0.350)
Liquidity	-0.015** (0.007))	-0.015** (0.007)	-0.015** (0.006)	-0.016** (0.007)
% Public Ownership	-0.363** (0.168)	-0.335 (0.169)	-0.324** (0.159)	-0.315** (0.160)
Assets Growth	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)	0.000 (0.002)
Adj. R^2	0.205	0.211	0.241	0.233
F Sig.	0.012	0.015	0.005	0.009

***p < 0.01, **p < 0.05, *p < 0.10. Standard errors in parentheses.

In the context of Indonesian palm oil companies, profitability may not be viewed as a financial indicator of a company's capacity for sustainability disclosure. Companies in developing countries tend to prioritize short-term profit over a more sustainable (long-term) one and therefore do not treat sustainability reporting as aligned with profit-driven activity [8]. Therefore, these companies may selectively disclose their sustainability reporting to reduce transparency expenses. The result contrasts with Wasara and Ganda [9], who find a significant effect between financial performance and sustainability disclosure.

The results also show irregular patterns of profitability fluctuations (RoA) that are not followed by changes in the GRI 2021 disclosure score. For instance, although the RoA of Eagle High Plantation company decreased (11.76% to 0.10%) during the observation period, the disclosure level increased (0.56 to 0.77). These findings confirm that profitability is not a strategic basis for influencing the level of sustainability disclosure under GRI 2021 in palm oil subsector companies in Indonesia.

Meanwhile, the independent commissioners have a direct rather than a moderating effect on sustainable disclosure. The insignificant moderating effect suggests independent commissioners fail to encourage management to pursue sustainable disclosure. Reflecting the extractive nature of the palm oil sector in developing countries, which is largely profit-oriented, more profitable companies are under close public scrutiny. In this scenario, a greater number of independent commissioners may take a more conservative approach to the sustainability disclosure. Bhatia and Tuli [10] also discovered that organisations focus more on economic performance than on sustainability considerations.

Consistent with legitimacy theory [11], independent commissioners' impact on sustainability disclosure primarily through a direct governance role rather than as a moderating role. Good governance can provide the oversight needed, as high board independence directly impacts sustainability disclosure. Palm oil companies will compete to disclose more comprehensive sustainability information than their peers to win investor trust, in line with public sentiment. Thus, it appears that effective board independence reinforces sustainability transparency on the 2021 GRI Standards in the Indonesian palm oil industry.

Control variables show varying effects on disclosure. Liquidity and public share ownership have consistently significant negative effects in all models. It shows that sustainability disclosure is lower at higher liquidity and dispersed ownership. On the other hand, asset growth has no significant effect, probably because of the observation period from 2021 to 2024.

The negative effects of liquidity imply that companies with high liquidity retain large cash holdings for temporary operational purposes unrelated to sustainability reporting practices. Being prudent in cash distribution, liquid capital does not automatically go to sustainability disclosure efforts. Meaning, companies may tend to greenwash when liquidity is lower to draw the attention of potential investors [12]. This reflects the dual nature of the palm oil sector, which is driven by both short-term profit and sustainability considerations [13]. Furthermore, based on legitimacy theory, the company believes that high liquidity is sufficient to convey its financial performance, so it does not see a need to maintain legitimacy through sustainability disclosures [11].

Likewise, public shareholding decreases disclosure (except for Model1B). Such a result is consistent with the findings of Ahamed and Masum [14], who report that more dispersed ownership could reduce sustainability disclosure. This may be attributed to social and cultural factors common in developing countries, such as Indonesia, where environmental awareness is still low. With reference to legitimacy theory, having public shareholders does not create legitimate pressure on palm oil companies to disclose their sustainability practices. Thus, through higher public share ownership, the level of sustainability disclosure is expected to respond to lower [11].

4 Conclusion

This study examines whether independent commissioners moderate the effect of profitability (RoA and RoE) on sustainability disclosure under the GRI 2021. This analysis implements moderated regression using 47 observations from palm oil companies listed on the Indonesia Stock Exchange (IDX) for the period 2021–2024. The results reveal that independent commissioners do not moderate the impact of profitability (ROA or ROE) on sustainability

disclosures. Instead, independent commissioners directly affect the level of sustainability disclosure under the GRI 2021.

The evidence suggests that corporate governance needs to be strengthened to prevent greenwashing and that disclosures must meet a sustainability standard, such as the 2021 GRI Standards. This way, better governance practices can help companies restore public trust and improve their competitiveness in international markets. The findings are also relevant to regulators and investors seeking to enhance transparency and accountability in the resource-based sector. In addition, this study adds to the literature on the effect of board independence on sustainability disclosure, an issue that has not been addressed in prior research on the palm oil industry in Indonesia.

Future research suggestions include extending the observation period to examine the predictors of sustainability disclosure-related firm characteristics. Also, future studies may include non-financial variables to form a comprehensive model of the sustainability disclosure predictors. Similar future studies could be conducted in the mining, manufacturing, or other industrial sectors, focusing on the economic, environmental, and social dimensions under the GRI 2021. In this way, the generalizability across subsectors can be empirically tested.

Funding Source. This work was funded by Universitas Sebelas Maret [PKGR-UNS A; Contract Number: 371/UN27.22/PT.01.03/2025; Natural Resource and Environmental Economics Research Group (*RG ESDAL*)].

Acknowledgement. The authors acknowledge their gratitude to Universitas Sebelas Maret (UNS) for providing both financial and administrative support through its institutional research grant program.

Author contribution statement.
Salma Nur Azizah*:* Writing – original draft, Visualization, Validation, Methodology, Formal analysis; ***Putriesti Mandasari****:* Conceptualization, Writing – review & editing, Proofreading, Visualization, Validation, Methodology, Funding acquisition, Formal analysis, Supervision; ***Raden Kunto Adi***: Supervision.

References

1. M. H. Rahman, D. Naito, M. Moeliono, Y. Mitani, and A. I. Susaeta, Oil palm- and rubber-driven deforestation in Indonesia and Malaysia (2000–2021) and efforts toward zero deforestation commitments. Agrofor. Syst. **99**, (2025). https://doi.org/10.1007/s10457-024-01119-y
2. M. van Leeuwen, G. Mathys, L. de Vries, and G. van der Haar, From resolving land disputes to agrarian justice – dealing with the structural crisis of plantation agriculture in eastern DR Congo. J. Peasant Stud. **49**, 309 (2022). https://doi.org/10.1080/03066150.2020.1824179
3. J. Busch, O. Amarjargal, F. Taheripour, K. G. Austin, R. N. Siregar, K. Koenig, and T. W. Hertel, Effects of demand-side restrictions on high-deforestation palm oil in Europe on deforestation and emissions in Indonesia. Environ. Res. Lett. **17**, (2022). https://doi.org/10.1088/1748-9326/ac435e
4. R. L. Burritt and K. L. Christ, Modern slavery and the Global Reporting Initiative – A bridge too far? Bus. Strateg. Dev. **6**, 296 (2023). https://doi.org/10.1002/bsd2.239
5. V. L. Crisóstomo, P. De Azevedo Prudêncio, and H. C. Forte, An Analysis of the adherence to GRI for disclosing information on social action and sustainability concerns. In: A. Belal, S. Cooper, Advances in environmental accounting &

managemen. Adv. Environ. Account. Manag. **6**, 69 (2017). https://doi.org/10.1108/S1479-359820160000006002

6. F. Carreira, A. Silva, and C. Cepêda, Sustainability reporting and management control system: A structured literature review. Systems **13**, 848 (2025). https://doi.org/10.3390/jrfm15120562
7. T. Bani-Khalid, Does Profitability Support Sustainability? Examining the Influence of Financial Performance and ESG Controversies on ESG Ratings. Probl. Perspect. Manag. **17**, 141 (2019). http://dx.doi.org/10.21511/ppm.17(4).2019.12
8. A. F. Rahi, J. Johansson, M. Blomkvist, and F. Hartwig, Corporate sustainability and financial performance: A hybrid literature review. Corp. Soc. Responsib. Environ. Manag. **31**, 801 (2024). https://doi.org/10.1002/csr.2600
9. T. M. Wasara and F. Ganda, The relationship between corporate sustainability disclosure and firm financial performance in Johannesburg Stock Exchange (JSE) listed mining companies. Sustain. **11**, (2019). https://doi.org/10.3390/su11164496
10. A. Bhatia and S. Tuli, Corporate attributes affecting sustainability reporting: an Indian perspective. International Journal of Law and Management. Int. J. Law Manag. **59**, 322 (2017). https://doi.org/10.1108/IJLMA-11-2015-0057
11. J. Dowling and J. Pfeffer, Organizational legitimacy: Social values and organizational behavior. Sociol. Perspect. **18**, 122 (1975). https://doi.org/10.1016/j.tourman.2015.07.015
12. M. Pahlavan, A. A. Anvary Rostamy, and R. Darabi, Impacts of environmental sustainable performance reporting on the stock price crash risk and stock liquidity: The mediating role of predictability and comparability. J. Corp. Account. Financ. **34**, 144 (2023). https://doi.org/10.1002/jcaf.22618
13. A. F. Rahi, J. Johansson, A. Fagerström, and M. Blomkvist, Sustainability reporting and management control system: A structured literature review. J. Risk Financ. Manag. **15**, (2022). https://doi.org/10.3390/jrfm15120562
14. T. Ahamed and M. H. Masum, Effect of ownership attributes on environmental reporting in the emerging economy. J. Infrastructure, Policy Dev. **8**, 8542 (2024). https://doi.org/10.24294/jipd8542