

Financial Performance Environmental Disclosure and Firm Value in Indonesian Palm Oil

1st Wampanena Matruty¹, 2nd Irfona Agatha², 3rd Dewi Puspitasari³, 4th Muhammad Yudhika Elrif⁴.
dewi@janabadra.ac.id³

Faculty of Economics and Business, Universitas Janabadra, Yogyakarta, Indonesia

Abstract. This study examines the association of financial performance and environmental disclosure with firm value in Indonesian listed palm oil companies. Purposive sampling yielded 21 firms and 63 firm-year observations for 2022–2024. Firm value is measured using Tobin's Q, financial performance using return on assets (ROA), and environmental disclosure using an Environmental Disclosure Index (EDI), with firm size as a control. Multiple linear regression shows positive but statistically insignificant coefficients for ROA ($B = 2.128$; $p = 0.054$) and EDI ($B = 0.543$; $p = 0.513$) at the 5% level. Firm size is negatively associated with firm value ($B = -0.298$; $p < 0.001$). The model is jointly significant, with an adjusted R^2 of 0.223. The findings require caution because disclosure scores are highly concentrated and the pooled specification does not account for unobserved firm and year effects.

Keywords: Firm value; return on assets; environmental disclosure; firm size; palm oil.

1 Introduction

Firm value reflects market assessments of a company's current position and future prospects. In the palm oil industry, these assessments involve both financial performance and the environmental implications of business operations. Examining profitability alongside environmental disclosure is therefore relevant to understanding how financial and nonfinancial information relate to the valuation of listed palm oil companies.

Financial performance can convey information about a company's ability to generate returns from its resources. Signaling theory provides a basis for expecting profitability to reduce information asymmetry between management and external investors [1]. Environmental disclosure, meanwhile, communicates corporate responsibility to stakeholders and may help sustain organizational legitimacy [2, 3]. These mechanisms imply that both profitability and environmental transparency may be positively associated with market valuation, although their empirical relationships need not be equally strong.

Previous Indonesian research presents mixed evidence. Setiadi and Agustina [4] report a positive relationship between environmental disclosure and firm value, whereas Saputri et al. [5] find no significant relationship. Kawi and Natalylova [6] also report that environmental disclosure is not significantly related to firm value. Differences in industry characteristics, disclosure measures, and observation periods motivate further investigation within a clearly defined sector.

This study examines whether return on assets (ROA) and environmental disclosure are positively associated with Tobin's Q among palm oil companies listed on the Indonesia Stock Exchange during 2022–2024, controlling for firm size. Its contribution is sector-specific evidence on the relative valuation relevance of profitability, disclosure breadth, and asset scale. The analysis also highlights how concentrated disclosure scores limit the interpretation of an insignificant disclosure coefficient.

2 Theoretical Background and Hypotheses

2.1 Financial performance and firm value

Signaling theory explains how observable information can convey otherwise imperfectly observed attributes [1]. In a corporate reporting setting, profitability can inform investors about the effectiveness with which management uses company assets. Higher ROA may indicate stronger earnings capacity and support favorable assessments of future returns. Stakeholder

theory further suggests that an organization's relationships with stakeholders matter for its continued operation [2]; financial performance can help sustain these relationships by supporting obligations and investment capacity.

This reasoning generates an expected positive relationship between ROA and firm value. However, contemporaneous accounting returns do not fully represent future cash flows, risk, or growth opportunities. The hypothesis therefore concerns an empirical association rather than a guaranteed market response.

H1: Financial performance, measured by ROA, is positively associated with firm value.

2.2 Environmental disclosure and firm value

Stakeholder theory emphasizes the interests of groups affected by corporate activity [2]. Legitimacy theory considers the perceived alignment of organizational conduct with socially accepted norms and values [3]. Environmental disclosure can support these relationships by explaining environmental responsibilities and management practices. For palm oil companies, such information may be relevant to assessments of operational continuity, reputation, and environmental exposure.

Disclosure can nevertheless vary in substance. Reporting an environmental topic does not necessarily demonstrate improved environmental outcomes or provide information that differentiates one company from another. While a positive valuation relationship is theoretically plausible and supported by some prior evidence [4], other studies find an insignificant association [5, 6]. Accordingly, the study tests the following hypothesis.

H2: Environmental disclosure is positively associated with firm value.

3 Research Method

3.1 Research design and sample

The study employs a quantitative observational design using secondary data from financial statements, annual reports, and sustainability reports obtained through the Indonesia Stock Exchange and company websites. The observation period covers 2022–2024. Purposive sampling requires palm oil companies to be listed during the study period, publish complete financial statements and annual reports, and provide the information needed to measure all study variables. Financial amounts were standardized to full Indonesian rupiah before calculating the variables.

As summarized in Table 1, the initial population contains 26 companies. Five were excluded because the required variable data were incomplete. The final balanced sample comprises 21 companies observed over three years, producing 63 firm-year observations.

Table 1. Sample selection.

Selection criterion	Number
Listed palm oil companies in the initial population	26
Excluded for incomplete financial statements or annual reports	0
Excluded for incomplete research-variable data	5
Final company sample	21
Observation years	3
Firm-year observations	63

Source: Research data estimated in the study (2026).

3.2 Variable measurement

Firm value is represented by a Tobin's Q proxy combining the market value of equity and total liabilities relative to total assets. The study refers to Chung and Pruitt [7] for the use of a Q-based valuation measure; the operational definition actually used in the study is specified in Table 2. ROA is net income after tax divided by total assets and is entered as a decimal ratio.

Environmental disclosure is measured by an Environmental Disclosure Index (EDI). Each assessed environmental item receives one point if disclosed and zero otherwise; the total disclosed items are divided by the total assessed items. EDI measures disclosure coverage rather than verified environmental performance. The available research documentation does not supply the complete item checklist or its denominator, which limits replication of the coding procedure. Firm size is measured as the natural logarithm of total assets in rupiah.

Table 2. Operational definitions of the variables.

Variable	Role	Measurement
Tobin's Q	Dependent	(Share price × shares outstanding + total liabilities) / total assets
ROA	Independent	Net income after tax / total assets
EDI	Independent	Number of disclosed environmental items / total assessed items
SIZE	Control	Natural logarithm of total assets in rupiah

Source: Research data estimated in the study (2026).

3.3 Estimation and hypothesis testing

The study estimates multiple linear regression using IBM SPSS Statistics 27. The firm-year observations are pooled, without reported firm or year effects. The specification is presented in equation (1), where i denotes the company, t the year, and ε the disturbance term.

$$Q_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 EDI_{it} + \beta_3 SIZE_{it} + \varepsilon_{it} \quad (1)$$

The reported procedure includes descriptive statistics, residual normality, multicollinearity, heteroskedasticity, and autocorrelation diagnostics, followed by coefficient and joint-significance tests [8]. Decisions use the reported two-sided p-values and a 5% significance threshold. R^2 and adjusted R^2 describe model fit. Because companies contribute repeated observations, conventional pooled-regression inference should be interpreted cautiously when within-company dependence and unobserved heterogeneity are not explicitly modeled.

4 Results and Discussion

4.1 Descriptive statistics

Table 3 presents the descriptive statistics. Mean Tobin's Q is 1.288376, with values ranging from 0.194598 to 2.785942, indicating substantial variation in the valuation proxy. ROA averages 0.057333, or approximately 5.73%, and ranges from −14.80% to 22.65%. The sample therefore includes both profitable and loss-making firm-year observations.

Table 3. Descriptive statistics for 63 firm-year observations.

Variable	Minimum	Maximum	Mean	Std. dev.
Tobin's Q	0.194598	2.785942	1.288376	0.651077
ROA	−0.147987	0.226500	0.057333	0.070924
EDI	0.500000	1.000000	0.984000	0.088400
SIZE	26.581658	31.445059	29.553470	1.156310

Source: Research data estimated in the study (2026).

EDI averages 0.984, close to the maximum possible score. Inspection of the observation-level dataset shows that 61 of 63 observations have EDI equal to 1.0; only two have EDI equal to 0.5. Both lower scores belong to the same company in 2022 and 2023. This concentration provides little variation for identifying a disclosure–valuation relationship. SIZE averages 29.553470, with a standard deviation of 1.156310.

4.2 Regression diagnostics

The reported diagnostic results are summarized in Table 4. The Kolmogorov–Smirnov test does not reject residual normality at the 5% level. VIF values are close to one, indicating little linear dependence among the regressors. The Glejser tests do not reject constant residual variance. These findings describe the reported diagnostic evidence; they do not establish that every relevant model assumption holds.

Table 4. Reported regression diagnostics.

Diagnostic	Result
Kolmogorov–Smirnov residual test	Statistic = 0.098; reported $p = 0.200$
Variance inflation factors	ROA = 1.111; EDI = 1.001; SIZE = 1.111
Glejser test p-values	ROA = 0.528; EDI = 0.108; SIZE = 0.104
Durbin–Watson statistic	1.971

Source: Research data estimated in the study (2026).

The Durbin–Watson statistic is close to two. However, proximity to two alone is not sufficient to establish residual independence in a pooled firm-year dataset. The analysis does not include panel-specific dependence tests or standard errors clustered by company. This qualification is retained when interpreting the coefficient tests.

4.3 Regression estimates and hypothesis decisions

Table 5 reports the estimated coefficients and significance levels. The model has $F(3, 59) = 6.945$ with $p < 0.001$, $R^2 = 0.261$, and adjusted $R^2 = 0.223$. Joint significance indicates that at least one slope coefficient differs from zero under the reported testing assumptions; it does not imply that ROA and EDI are individually significant.

Table 5. Multiple linear regression results.

Variable	B	p-value	Decision at 5%
Constant	9.441	< 0.001	Not applicable
ROA	2.128	0.054	H1 not supported
EDI	0.543	0.513	H2 not supported
SIZE	-0.298	< 0.001	Negative association

Source: Research data estimated in the study (2026).

Equation (2) expresses the fitted relationship using the rounded coefficients estimated in the study.

$$\hat{Q} = 9.441 + 2.128ROA + 0.543EDI - 0.298SIZE \quad (2)$$

ROA has a positive coefficient of 2.128, but its p-value of 0.054 exceeds the stated 5% threshold. H1 is therefore not supported at that threshold. Because ROA is expressed as a decimal, a one-percentage-point increase corresponds to a fitted increase of approximately 0.02128 in Tobin's Q, holding the other variables constant. This is a model estimate rather than evidence of a statistically established or causal increase.

EDI has a positive coefficient of 0.543 and $p = 0.513$, so H2 is not supported. SIZE has a negative coefficient of -0.298 and $p < 0.001$. Conditional on ROA and EDI, larger asset scale is associated with a lower Tobin's Q in the sample. Adjusted R^2 of 0.223 indicates modest explanatory fit after accounting for the number of regressors; it does not identify the causes of the remaining unexplained variation.

4.4 Interpretation of the findings

The positive ROA coefficient is consistent with the direction anticipated from signaling theory [1], but the evidence falls just short of the prespecified significance threshold. The result should not be interpreted as proof that profitability is irrelevant to investors. Instead, the sample and specification provide insufficient evidence of an association at the 5% level. A short observation period and omitted determinants of valuation may affect the estimate, but their specific contributions are not tested in this study.

The insignificant EDI coefficient is consistent with the findings summarized in Saputri et al. [5] and Kawi and Natalylova [6]. A particularly important explanation to consider is the near-ceiling distribution of EDI. With only two observations below the maximum, the estimated coefficient relies on a very limited disclosure contrast. Consequently, the result cannot establish that environmental transparency has no economic value or that investors disregard environmental information.

Stakeholder and legitimacy perspectives remain useful for interpreting why companies disclose environmental information [2, 3], even when disclosure breadth is not significantly related to market valuation. Binary presence-or-absence scoring may not capture credibility, comparability, assurance, or the substance of reported environmental outcomes. The study measures the extent of disclosure and cannot directly test whether stronger environmental performance receives a valuation premium.

The negative SIZE coefficient suggests that a larger asset base is not necessarily accompanied by a proportionately higher market valuation. However, the analysis does not measure asset efficiency, investment quality, or organizational complexity as separate explanatory mechanisms. Since total assets also enter the denominator of Tobin's Q and ROA, the interpretation of SIZE should consider the construction of these ratios. The finding supports a conditional association within the estimated model rather than a recommendation to reduce company assets.

5 Conclusion

Using 63 firm-year observations from 21 Indonesian listed palm oil companies during 2022–2024, the study finds positive but statistically insignificant associations of ROA and EDI with Tobin's Q at the 5% level. Firm size is negatively and significantly associated with the valuation

proxy. The regression is jointly significant and has an adjusted R^2 of 0.223. These conclusions apply to the reported pooled specification and the observed sample.

For corporate reporting, the findings suggest that maximizing the number of disclosed environmental items may provide limited differentiation when nearly all companies already obtain the maximum score. More informative reporting would distinguish disclosure coverage from measurable environmental outcomes. The results also suggest that valuation analysis should consider asset scale together with profitability and nonfinancial information, while avoiding causal conclusions from these observational estimates.

The main limitations are the three-year window, the single-industry sample, the concentrated EDI distribution, and the absence of a complete environmental coding checklist. The pooled model also does not explicitly address firm effects, year effects, or within-company dependence. Future research should document item-level coding, assess disclosure quality, extend the observation period, and evaluate panel specifications with appropriate inference. These extensions would help distinguish weak underlying relationships from limitations in measurement and estimation.

Acknowledgments

The author thanks Yavida Nurim for academic supervision and guidance during the preparation of the underlying undergraduate thesis at Universitas Janabadra.

References

- [1] Spence, M.: Job market signaling. *The Quarterly Journal of Economics*. 87(3), 355–374 (1973). <https://doi.org/10.2307/1882010>
- [2] Freeman, R.E.: *Strategic Management: A Stakeholder Approach*. Pitman, Boston (1984)
- [3] Suchman, M.C.: Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*. 20(3), 571–610 (1995)
- [4] Setiadi, I., Agustina, Y.: Pengungkapan lingkungan, profitabilitas dan nilai perusahaan. *Jurnal Ilmiah Akuntansi*. XVII (2), 198–207 (2019)
- [5] Saputri, S.A., Maharani, B., Prasetya, W.A.: Pengaruh kinerja lingkungan, pengungkapan lingkungan, dan biaya lingkungan terhadap nilai perusahaan. *Jurnal Riset Akuntansi*. 13(1), 94–111 (2023)
- [6] Kawi, Y.A.S., Natalylova, K.: Pengaruh environmental disclosure, social disclosure, profitabilitas, dan faktor lain terhadap nilai perusahaan. *Akuntansi TSM*. 2(3), 381–392 (2022)
- [7] Chung, K.H., Pruitt, S.W.: A simple approximation of Tobin's q . *Financial Management*. 23(3), 70–74 (1994)
- [8] Ghozali, I.: *Aplikasi Analisis Multivariate dengan Program IBM SPSS 26*. Badan Penerbit Universitas Diponegoro (2021)