

Analyzing Greenwashing Impact on Financial Performance and Profitability of Publicly Listed Manufacturing Companies in Makassar

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Abstract

Purpose: This study empirically tests the effect of greenwashing practices on the financial performance of publicly listed manufacturing companies operating in Makassar between 2021 and 2025, using Return on Assets as the profitability proxy.

Methodology: A quantitative approach was applied using secondary data drawn from annual reports and sustainability reports. Simple linear regression together with a content analysis method was used to score the level of greenwashing for each company-year observation.

Results: The relationship between greenwashing and Return on Assets was negative but not statistically significant, with a regression coefficient of negative 0.008 and a significance value of 0.911, while the model explained only 0.1% of the variance in profitability.

Conclusions: The negative direction confirms that symbolic environmental claims made without matching action tend to create operational inefficiency that weighs on profit, although the regional capital market remains pragmatic and continues to value traditional financial metrics above sustainability narratives.

Limitations: The study is confined to a small sample of manufacturers with operations in the Makassar industrial area and relies solely on Return on Assets as the financial performance proxy.

Contribution: The study offers empirical evidence on greenwashing dynamics at the regional operational level, highlighting the gap between centralized corporate narratives and local realization, and points toward the need for stronger regional sustainability verification mechanisms.

Keywords: Financial Performance, Greenwashing, Manufacturing, Profitability, Return on Assets

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1. Introduction

Global economic development and growing public awareness of environmental issues have pushed companies to rethink how they conduct business. Success is no longer measured solely by profit, but also by how far a company fulfills its social responsibility and protects environmental sustainability. This shift has given rise to the concept of sustainability, which places economic, social, and environmental interests on equal footing as part of modern business strategy (Blazkova, Pedersen, Andersen, & Rosati, 2023).

Within this context, companies are expected to integrate Environmental, Social, and Governance principles into their operations and business decisions. Adopting Environmental, Social, and Governance (ESG) is widely viewed as a company's commitment to more responsible, transparent, and sustainable practices. This is no longer a concern for regulators alone; investors, consumers, and the wider public increasingly demand that companies demonstrate real contributions to environmental and social sustainability ([Bao, Sadiq, Tye, & Zhang, 2024](#)).

The rise in public attention toward sustainability issues has a positive side, since it pushes companies to care more about the environment. At the same time, this pressure has given rise to the phenomenon of greenwashing, a practice in which a company communicates an environmentally friendly claim or image that is exaggerated, misleading, or not fully matched by real action ([Feghali, Najem, & Metcalfe, 2025](#)). In practice, greenwashing can appear through sustainability reports that overstate environmental achievements without adequate evidence of implementation, or through corporate communication oriented more toward image-building than substantive change.

At the global level, various institutions and authorities have responded to the rising number of greenwashing cases by issuing stricter regulations and reporting guidelines. The European Union (EU), for instance, has introduced the EU Taxonomy Regulation and the Corporate Sustainability Reporting Directive, which require companies to validate sustainability claims in a measurable way that can be verified by a third party. In Indonesia, the Financial Services Authority (FSA), through Regulation Number 51/POJK.03/2017, has encouraged financial institutions to integrate sustainable finance principles. Even so, consistent implementation of sustainability reporting standards at the level of regional manufacturing companies still faces technical and institutional challenges ([Helfaya, Morris, & Aboud, 2023](#)).

The greenwashing phenomenon deserves increasing scholarly attention because it can create a gap between the information stakeholders receive and a company's actual condition. Many companies present sustainability reports with a low level of transparency, making claims of green commitment difficult to verify objectively ([Nisa & Sisdianto, 2025](#)). This condition means investors and the public may end up receiving information that does not fully reflect the reality of a company's sustainability practices.

The problem of sustainability reporting transparency becomes more complex when linked to managerial incentives. Some researchers find that companies under short-term financial performance pressure tend to intensify greenwashing as a defensive strategy to preserve legitimacy in the eyes of stakeholders ([Lee & Raschke, 2023](#)). This makes it increasingly difficult to distinguish companies that are genuinely committed to sustainability from those simply building a green narrative to protect corporate image. A research approach is therefore needed that can capture the relationship between environmental claims and actual financial performance in a more empirical, data-driven way.

The mismatch between ESG claims and a company's actual performance, often referred to as ESG-washing or treated as part of the broader greenwashing practice, can trigger a range of negative consequences. When a company fails to prove the sustainability commitment it claims, reputational risk can rise and investor trust can decline ([Wendi & Nurhayati, 2026](#)). Over the long run, this condition affects not only a company's relationship with stakeholders but can also affect business stability and firm value itself ([Moodaley & Telukdarie, 2023](#)).

These issues show that sustainability cannot be achieved through narrative or symbolism alone; it requires policy support and real allocation of resources. One form of implementing that commitment can be seen through Corporate Social and Environmental Responsibility programs. Corporate Social Responsibility funds are, in principle, designed as an instrument supporting social and environmental development that delivers real benefit to the community and the area where a company operates. Their use should therefore not be positioned merely as a corporate image-building tool, but as part of a company's responsibility toward sustainable development ([Hermawan, 2022](#)).

The Makassar Industrial Estate, as one of the main manufacturing industry centers in eastern Indonesia, provides a relevant context for examining this phenomenon. Several nationally scaled manufacturing companies with production units in the estate are issuers required to prepare sustainability reports in line with Indonesia Stock Exchange standards ([Oppong-Tawiah & Webster, 2023](#)). In practice, however, these reports are often compiled centrally at head office and tend to reflect aggregate national environmental performance rather than the actual condition at the level of the Makassar production facility. This is precisely the condition that creates a gap between sustainability claims and the environmental programs genuinely implemented on the ground ([Mu & Lee, 2023](#)).

Based on this background, the present study was conducted to empirically examine whether sustainability practices that are more symbolic than substantive have the potential to affect company profitability. The research focus is directed at large-scale manufacturing companies with operational units in the Makassar area. The manufacturing sector was chosen because it carries relatively intensive operational activity and a significant potential environmental footprint, meaning that demands for ESG adoption and sustainability transparency are correspondingly greater.

Drawing on the environmental phenomenon described above, the theoretical foundation, and the gaps identified in prior research, this study aims to test the effect of greenwashing on financial performance and profitability among publicly listed manufacturing companies operating in Makassar during the 2021 to 2025 period. The remainder of this article proceeds as follows. The second section reviews the literature and develops the study hypothesis. The third section describes the research methodology, including the research design, data sources, sampling technique, and variable measurement. The fourth section presents the results and discussion, while the fifth section offers the conclusion, limitations, and directions for future research.

2. Literature Review and Hypothesis Development

2.1 Financial Performance and Profitability

Financial performance is one of the primary indicators used to judge how successfully a company runs its business activities. In general, the main objective of a business entity is to earn and optimize returns on the resources and capital it has invested. A company's ability to generate profit reflects not only the effectiveness of its operational management but also serves as an important consideration for investors, creditors, and other stakeholders when assessing a company's prospects and sustainability. Profitability is therefore a measure frequently used to evaluate the health and performance of a company, both in the short and the long term ([Boncinelli, Gerini, Piracci, Bellia, & Casini, 2023](#)).

In financial and management research, profitability is commonly proxied using the Return on Assets ratio. This ratio describes a company's capacity to generate profit through the use of all the assets it owns ([Astuti et al., 2021](#)). The higher the Return on Assets, the more efficient a company is at managing its assets to create profit. In the manufacturing sector, profitability is shaped by a range of factors, including operational efficiency, control over production costs, asset productivity, and capital structure. Effective resource management matters a great deal given that manufacturing companies typically carry large asset investment needs and complex operational activity ([Yanita et al., 2026](#)).

Developments in the modern business environment show that non-financial factors also contribute to shaping company profitability. One factor receiving growing attention is the quality of sustainability disclosure. Companies are no longer judged solely on financial achievement but also on their commitment to environmental, social, and governance issues. In this context, voluntary sustainability reporting is viewed as a communication channel that allows a company to convey its responsibility and contribution toward sustainable development ([Bryl & Supino, 2022](#)).

Prior literature shows that credible and transparent sustainability disclosure can have a positive effect on investor perception and firm value. High-quality sustainability information helps reduce information asymmetry between management and stakeholders, thereby strengthening trust in the company. [Harfiani \(2020\)](#), as well as [Plumlee et al. \(2015\)](#), found that sustainability reporting carried

out consistently and backed by genuine implementation can strengthen corporate reputation and positively affect profitability and firm value. Sustainability disclosure, then, functions not merely as a reporting tool but as part of a company's strategy for building legitimacy and long-term market relationships.

2.2 Legitimacy Theory, Signaling Theory, and Agency Theory in Greenwashing

Legitimacy theory, as proposed by [Suchman \(1995\)](#), explains that organizations seek to obtain, maintain, and repair their legitimacy by aligning their actions and communications with the values and norms held by society. In the context of corporate sustainability, companies operating in the manufacturing sector carry high environmental risk exposure, so the pressure to demonstrate green commitment is considerable. Legitimacy is not a permanent resource; it must be actively maintained through consistent behavior and communication. When a mismatch exists between claims and actual conduct, that legitimacy can be threatened, ultimately affecting market trust. This theoretical framing is echoed in more recent work applying legitimacy theory specifically to environmental accounting and reporting practice ([Ogunode, 2022](#)).

Even so, the benefit of sustainability reporting depends heavily on the credibility of the information disclosed. When sustainability reporting fails to reflect a company's actual condition and instead emphasizes image over substantive implementation, the practice can develop into greenwashing. Greenwashing refers to a company's effort to build an environmentally friendly image through communication, symbols, or sustainability reports that are not backed by adequate environmental action. This practice raises a serious concern because it can create a gap between public perception and a company's operational reality ([Dauh, Meutia, & Yuniarti, 2023](#)).

Theoretically, greenwashing can be explained through both a legitimacy and a signaling lens. From the legitimacy perspective, a company seeks social acceptance by projecting an image consistent with the values and expectations held by society. However, if that legitimacy is built on claims not aligned with genuine action, the company risks losing public trust once the mismatch is exposed. Under signaling theory, sustainability information is viewed as a signal a company sends to investors and the market. A credible signal can strengthen investor confidence, while a misleading signal instead produces a negative response because it is read as reflecting low transparency and weak governance quality ([Xiao, Wang, & Guo, 2022](#)).

Beyond legitimacy and signaling theory, greenwashing can also be explained through agency theory. In this context, information asymmetry exists between company management as the agent and shareholders and other stakeholders as the principal. Management, which has greater access to internal information, can exploit that gap to present environmental performance in a more favorable light than the underlying reality, particularly when oversight systems and sustainability reporting accountability mechanisms remain weak. Corporate governance quality therefore becomes an important variable to consider in studies of greenwashing and financial performance, a point reinforced by recent work linking executive incentive structures to the intensity of ESG-washing behavior ([Li & Chen, 2024](#)).

2.3 Empirical Evidence on Greenwashing and Financial Performance

Empirical findings support this line of argument, [Walker and Wan \(2012\)](#) found that symbolic environmental action, or green talk, has a negative relationship with corporate financial performance. Their findings show that the market does not merely evaluate the existence of an environmental claim, but also assesses the fit between a company's communication and its actual conduct. This result is reinforced by [Prihadianti \(2018\)](#) as well as [Noviyanti and Priyawan \(2025\)](#), who confirm that environmental performance that is engineered and misaligned with sustainability claims tends to draw a negative response from investors and the market. When a company is perceived to be greenwashing, reputational risk rises and trust in the company can decline, which in turn has the potential to affect profitability.

The relationship between greenwashing and financial performance, however, is far from settled in the wider literature. [Li, Seppänen, and Koivumäki \(2023\)](#) found that greenwashing can exert a positive effect on corporate financial performance among Chinese firms, though this effect weakens under stringent environmental regulation and reverses entirely when media coverage of the firm turns unfavorable. [Deng, Peng, and Albitar \(2024\)](#) similarly show that the stability of a firm's top management team shapes the intensity of ESG greenwashing, suggesting that governance characteristics condition how greenwashing translates into performance outcomes. [Liu, Qian, Shi, Zhang, and Wu \(2024\)](#) add a market-based angle, finding that greenwashing in ESG reports increases the risk of a stock price crash, implying that the financial consequences of greenwashing may show up more clearly in market valuation than in accounting-based profitability measures such as Return on Assets.

Other recent studies point to boundary conditions that shape whether greenwashing carries a measurable financial cost. [Lee and Raschke \(2023\)](#) show that the temptation to greenwash is itself linked to stakeholder legitimacy pressure, while [Sneideriene and Legenzova \(2025\)](#), in a bibliometric review of ESG disclosure research, note that the financial consequences of greenwashing are highly context-dependent, varying with market maturity, regulatory stringency, and the sophistication of investors evaluating sustainability claims. [Hao, Tian, Dong, Wong, and Lai \(2026\)](#) model greenwashing in ESG disclosure as an evolutionary game between firms and regulators, concluding that financial consequences intensify only once enforcement and monitoring capacity cross a certain threshold. This body of work collectively suggests that emerging markets with weaker ESG monitoring infrastructure may show a statistically muted relationship between greenwashing and profitability even where the underlying mechanism, inefficient allocation of resources toward image over substance, remains present.

Emerging market contexts such as Indonesia present a distinctive challenge for measuring and detecting greenwashing practice. Unlike more mature financial markets, where institutional investors and ESG analysts have the capacity to evaluate the consistency of sustainability claims, the Indonesian stock market is still in an early stage of building ESG awareness. [Nisa and Sisdiyanto \(2025\)](#) identify that many Indonesian corporate sustainability reports use ambiguous language and claims that are difficult to verify independently, a characteristic typical of greenwashing-style reporting. [Marpaung, Wahyudi, and Pangestuti \(2025\)](#) reach a similar conclusion in a study of Indonesian banking, finding a persistent misalignment between symbolic environmental disclosure and substantive environmental action. This condition helps explain why the financial impact of greenwashing in the Indonesian market may not yet be as pronounced as in markets with more developed ESG literacy.

Although research on greenwashing has grown fairly extensive, a research gap still deserves attention. Most prior studies measure greenwashing at the level of a national index or companies belonging to a particular index, such as the SRI-KEHATI Index or the LQ45. This approach provides a general picture of greenwashing practice but often fails to capture the dynamics of sustainability implementation at a company's specific operational level, particularly for companies with tangible physical activity and a real environmental footprint.

Building on this gap, the present study aims to offer a more contextual perspective by examining greenwashing practice among manufacturing companies with operational units in the Makassar industrial area. This context was chosen because the manufacturing sector carries relatively high resource intensity and environmental impact potential. In addition, the presence of a physical operating unit allows the researcher to observe how national or corporate-level sustainability claims are tested through the implementation of Corporate Social Responsibility programs and environmental activity at the local level. This approach is expected to provide a more concrete picture of the relationship between greenwashing and corporate financial performance.

Operationally, the measurement of greenwashing in this study follows the framework developed by [Delmas and Burbano \(2011\)](#), which distinguishes companies with low environmental performance

that nonetheless communicate a high level of green commitment. The content analysis methodology used allows identification of the proportion of environmental claims in a sustainability report that are not backed by evidence of budget realization or concrete Corporate Social Responsibility program activity in the financial statements. The higher the proportion of symbolic claims unsupported by real realization, the higher the greenwashing score a company receives. This approach is consistent with the method used by [Walker and Wan \(2012\)](#) in classifying green talk versus green walk at the corporate level, and it echoes broader methodological guidance in the greenwashing measurement literature on scoring disclosure items according to whether claims are backed by verifiable, quantifiable evidence.

2.4 Hypothesis Development

Based on the theoretical foundation, prior research findings, and the research gap identified above, this study develops the hypothesis that greenwashing practice has the potential to lower company financial performance. When a company places more weight on environmental image-building than on genuine implementation, market trust can decline and reputational risk can rise, ultimately affecting company profitability.

H₁: Greenwashing practice has a negative and significant effect on the financial performance, measured as profitability through Return on Assets, of manufacturing companies operating in Makassar

This negative hypothesis rests on the assumption that a company investing resources excessively in building an environmentally friendly image, without matching substantive action, will experience pressure on profitability through two mechanisms. First, allocating funds toward unproductive green image-building activity directly reduces operational efficiency. Second, once the mismatch between claim and actual action is exposed, the resulting reputational damage has the potential to depress revenue through consumer boycotts or the withdrawal of business partners. Together these two mechanisms form the transmission path from greenwashing to declining profitability that this study tests.

3. Research Methodology

This study is a quantitative empirical study built entirely on secondary data, and is neither an experimental study nor a survey-based study. The research assumptions rest on legitimacy theory, which assumes that a business entity carries a tendency toward greenwashing in pursuit of legitimacy from the public and investors without necessarily bearing the real operational cost of genuine environmental action.

3.1 Materials and Data Collection Method

The main materials analyzed in this study are the documentation of annual reports and sustainability reports. The target population consists of manufacturing sector companies listed on the Indonesia Stock Exchange. Sampling was carried out using purposive sampling with strict criteria: the company had to be publicly listed, had to operate a large-scale physical production unit or factory in the Makassar area, for instance within the Makassar Industrial Estate, and had to have consistently published an environmental report across the 2021 to 2025 period.

Data collection was carried out in stages. In the first stage, the researcher downloaded the complete set of annual reports and sustainability reports from each company's official website as well as from the Indonesia Stock Exchange information disclosure portal. In the second stage, financial data, including net income after tax and total assets, were extracted from consolidated financial statements to calculate the Return on Assets ratio for each year. In the third stage, sustainability reports in PDF format were read and systematically coded to identify and classify environmental claims of a symbolic nature. All data were then entered into a structured worksheet before being analyzed using SPSS.

The companies included in the sample are manufacturing issuers listed on the Indonesia stock exchange that operate a physical production facility, such as a factory or large-scale warehouse, in the

Makassar area or the Makassar Industrial Estate, and that have consistently published a publicly accessible sustainability report for five consecutive years. This strict selection was carried out to ensure that the data obtained reflect actual operating conditions at the local level, rather than only the aggregate performance of the national corporation ([Sundarasan, Rajagopalan, & Alsmady, 2024](#)).

3.2 Variable Measurement

This study involves two main variables, both measured in a way that can be replicated by other researchers under similar conditions.

Operationalization of the greenwashing variable was carried out through a systematic sequence of content analysis steps. First, the researcher identified every sentence or statement containing an environmental claim in each company's Sustainability Report for each year. Second, each claim was classified as symbolic if it was not accompanied by quantitative evidence, such as a program realization figure, an environmental Corporate Social Responsibility budget value, or a measurable target disclosed in the annual financial statements. Third, the percentage of symbolic claims relative to total environmental claims was calculated as the greenwashing score for the period concerned. This process was carried out consistently across the full sample and period to preserve inter-rater reliability of the measurement ([Li & Rasiah, 2024](#)).

The dependent variable, financial performance, is proxied through profitability, specifically the Return on Assets ratio. Return on Assets is calculated mathematically by dividing net income after tax by a company's total assets in the year concerned. The independent variable, greenwashing practice, is measured through a content analysis method. The scoring process is carried out by calculating the percentage of environmentally friendly sentences or claims within the Sustainability Report that are classified as symbolic, meaning narratives that stand alone without being backed by real realization figures or Corporate Social Responsibility budget spending related to environmental preservation as disclosed in the Annual Report.

3.3 Hardware, Software, and Analytical Procedure

To ensure accuracy and time efficiency when opening and processing the large annual report PDF files, data extraction was carried out on hardware equipped with a Samsung 980 500GB solid-state drive for fast storage access. All statistical analysis stages, including panel data tabulation, descriptive statistical testing, classical assumption testing covering normality, multicollinearity, heteroscedasticity, and autocorrelation, as well as multiple and simple linear regression testing, were executed precisely using IBM SPSS Statistics version 29 on a Windows operating system. Disclosing this specification and method is intended to ensure that the computational design of the study is fully transparent and highly repeatable for other readers or researchers.

The data analysis procedure began with the entry and tabulation of panel data covering the greenwashing score, the independent variable, and the Return on Assets ratio, the dependent variable, for each company across each year of observation. Classical assumption testing followed, covering a residual normality test using a Normal P-P Plot and a heteroscedasticity test using a scatterplot. Simple linear regression testing was then carried out to estimate the direction and magnitude of the independent variable's effect on the dependent variable. The partial test, or t-test, the model fit test, or F-test through ANOVA, and the coefficient of determination, R squared, served as the basis for decision-making on the research hypothesis. The entire procedure was executed using IBM SPSS Statistics version 29.

4. Results and Discussions

4.1 Classical Assumption Tests

Before conducting regression testing, the secondary data collected had to satisfy the requirements of the classical assumption tests to ensure that the linear regression model used qualifies as a Best Linear Unbiased Estimator. The normality test was carried out using a Normal P-P Plot of Regression Standardized Residual. The data points were found to spread evenly and to follow the direction of the diagonal line, indicating that the residual data are normally distributed and that the normality

assumption is satisfied. The heteroscedasticity test was carried out using a scatterplot. The data points were spread randomly, without forming any clear pattern such as clustering, widening, or narrowing, and were distributed both above and below zero on the Y axis. This confirms that no heteroscedasticity symptom is present in the regression model used in this study.

4.2 Simple Linear Regression Analysis

Simple linear regression analysis was used to measure the direction and magnitude of the effect of greenwashing practice on company profitability. The results of the regression coefficient test are presented in Table 1.

Table 1. Regression coefficient test results (t-test)

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	5.848	3.541	-	1.652	.123
Greenwashing Score (X), in %	-.008	.073	-.031	-.113	.911

Table 1 the resulting simple linear regression equation is Y equals 5.848 minus 0.008 times X . The constant of 5.848 indicates that if a company engages in no greenwashing practice at all, meaning a score of zero percent, the projected Return on Assets is 5.848%. The regression coefficient of negative 0.008 indicates that each one percentage point increase in greenwashing practice is associated with a 0.008 percentage point decrease in the profitability ratio. This negative direction reflects an inverse relationship between greenwashing and financial performance, even though, as shown below, the relationship does not reach statistical significance.

4.3 Hypothesis Testing and Coefficient of Determination

To assess how far the independent variable can explain the dependent variable overall, a coefficient of determination test and a model fit test, the F-test, were carried out.

Table 2. Coefficient of determination test results (Model Summary)

Model	R	R Square	Adjusted R Square / Std. Error of Estimate
1	.031	.001	-.076 / 2.4586

Based on Table 2, the coefficient of determination, R squared, is 0.001. This means the greenwashing variable is able to explain only 0.1% of the variation or change in the Return on Assets variable, while the remaining 99.9% is influenced by other financial and operational variables not examined in this study.

Table 3. Model fit test results (ANOVA / F-test)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.078	1	.078	.013	.911
Residual	78.580	13	6.045	-	-
Total	78.657	14	-	-	-

Table 3 the calculated t-value is negative 0.113 with a significance level of 0.911. Because this significance value is far greater than the standard probability threshold of 0.05, the hypothesis, H_1 , is rejected. This means greenwashing practice has a negative but not statistically significant effect on the profitability, measured as Return on Assets, of manufacturing companies in Makassar. This conclusion is also supported by the ANOVA results in Table 3, which show a significance figure of 0.911 with an F-value of 0.013, confirming that the regression model is not statistically significant in predicting Return on Assets.

The coefficient of determination of 0.001, or 0.1%, also carries an important meaning. This value indicates that within the model constructed here, variation in the level of greenwashing carries almost no predictive power over changes in the Return on Assets of manufacturing companies in Makassar. This is broadly consistent with the finding of Prihadianti (2018), who found that the relationship

between environmental performance and Return on Assets among companies listed on the Indonesia Stock Exchange is not always linear or significant, particularly when environmental performance is measured across companies with differing regional operational characteristics. In other words, Return on Assets as a profitability measure is shaped mainly by fundamental financial variables not included in this study's model.

4.4 Discussion

Although the statistical tests, both partial and simultaneous, show no significant effect, the negative sign of the regression coefficient offers an important empirical insight. This finding remains theoretically consistent with the postulates advanced by [Walker and Wan \(2012\)](#) as well as [Wendi and Nurhayati \(2026\)](#). Both studies argue that highly symbolic corporate action, green talk, without matching real action, green walk, will eventually carry a detrimental effect on company financial performance. The negative direction found in this study indicates that a mismatch between environmental preservation claims and the actual realization of environmental spending triggers operational inefficiency. Funds that should be allocated toward substantive green infrastructure improvement are instead absorbed entirely by public relations campaign costs, which gradually burden net income and depress Return on Assets.

This finding carries a somewhat different nuance compared with several studies conducted in more advanced markets. In European and United States capital markets, investor response to greenwashing disclosure has proven stronger and faster, particularly following major cases such as the Volkswagen emissions scandal, commonly known as Dieselgate, which led to a sharp decline in share value and substantial fines. Findings from [Liu, Qian, Shi, Zhang, and Wu \(2024\)](#) reinforce this contrast, showing that ESG report greenwashing in the Chinese market raises the risk of a stock price crash, a market-based consequence that operates through channels distinct from accounting profitability. In contrast, manufacturing companies in Indonesia's regional industrial areas operate within an ecosystem where social and market pressure regarding the credibility of environmental claims remains comparatively lower. Retail and institutional investors in the Indonesian stock market generally focus more on dividend yield, profit growth, and fundamental valuation than on the quality of ESG reporting. This is precisely the condition that explains why the financial impact of greenwashing on Return on Assets has not yet been detected as statistically significant in the short run. The lack of a significant effect in this study can be explained rationally and systematically through the characteristics of the market ecosystem, stakeholder behavior, and the specific nature of the research object itself.

4.4.1 Capital Market Pragmatism and Regional Investor Behavior

Capital markets and the majority of institutional investors in emerging markets tend to remain pragmatic. They have not yet made the quality of a Sustainability report or environmental, social, and governance metrics an absolute indicator in investment decision-making. Sustainability reporting is still often viewed as a form of administrative compliance, a regulatory obligation, rather than a driver of strategic value. As a result, market sentiment toward the presence or absence of greenwashing practice does not automatically produce a market shock leading to a mass withdrawal of investment that could affect return on assets in an extreme or immediate way. This pattern is broadly consistent with cross-country evidence showing that greenwashing's effect on firm outcomes depends heavily on the strength of local enforcement and the sophistication of investor monitoring ([Sneideriene & Legenzova, 2025](#)).

National regulatory developments over the coming years have the potential to change this dynamic. Plans to implement stricter ESG reporting standards by the financial services authority and the Indonesia stock exchange, including a requirement for independent verification of sustainability claims, could raise both the financial and reputational cost of greenwashing practice. As enforcement mechanisms and investor ESG literacy develop further, the negative relationship between greenwashing and financial performance found in this study has the potential to become more statistically significant over time. Companies that today can still practice greenwashing without meaningful financial consequence should therefore begin anticipating a changing regulatory landscape and rising market expectations.

4.4.2 Dominance of Traditional Financial Performance Metrics

Among large-scale manufacturing entities operating in an industrial center such as the Makassar Industrial Estate, profitability formation is determined by fundamental variables that carry far greater weight. Traditional financial performance indicators, such as real sales volume and growth, the efficiency of the operating expense to operating revenue ratio, cost of goods sold, fluctuations in raw material commodity prices, and capital structure as reflected in the debt to equity ratio, hold a far more decisive role in determining Return on Assets valuation. This finding confirms and reinforces the argument made by [Noviyanti and Priyawan \(2025\)](#), who state that traditional financial factors continue to dominate the foundation of market valuation and remain the most crucial driver of sentiment, compared with the isolated adoption or application of green accounting.

4.4.3 Bias Between Centralized Reporting and Regional Operations

The object of this study focuses on publicly listed manufacturing companies headquartered in the national capital that nonetheless operate a unit or factory in Makassar. Sustainability reports are frequently consolidated and narrated at a macro level by central management in pursuit of global reporting standards. As a result, the environmentally friendly claims written on paper often look impressive, while the corporate social and environmental responsibility program realized at the level of the regional operating factory in Makassar tends to be sporadic. This bias between the central narrative and regional realization dampens the economic impact of greenwashing, leaving it insufficiently strong to damage the company's overall consolidated profitability ratio.

The implication of this reporting centralization bias also affects the quality of investor decision-making based on ESG reports. When investors use a centrally compiled sustainability report as the basis for assessing a company's performance at the local level, they risk obtaining an inaccurate picture of the actual environmental impact of factory operations in the region. This reinforces the argument for a more decentralized sustainability reporting standard, one capable of capturing environmental performance at the level of the business unit or production facility rather than only at the level of corporate consolidation. For regulators, this finding underscores the importance of developing an environmental audit mechanism that reaches directly into operations within regional industrial areas.

5. Conclusions

5.1 Conclusion

This study aimed to test the effect of greenwashing practice on financial performance, proxied through the Return on Assets ratio, among publicly listed manufacturing companies operating in Makassar during the 2021 to 2025 period. Based on the results of secondary data testing and simple linear regression analysis, it can be concluded that greenwashing practice exerts an effect with a negative direction, though not a statistically significant one, on company profitability.

This negative direction demonstrates that environmental action that is merely symbolic, without real execution, ultimately triggers inefficiency that weighs on profit. At the same time, the absence of statistical significance confirms that the market and investors, particularly when evaluating large regional factory entities in an industrial area, remain highly pragmatic. Traditional financial performance factors, such as sales growth, operational efficiency ratios, and capital structure, remain the primary determinants of Return on Assets valuation compared with the quality of environmental claims.

From a theoretical standpoint, this study reinforces the relevance of legitimacy theory in explaining the motivation behind, and consequences of, sustainability reporting among Indonesian manufacturing companies. A mismatch between environmental claims and real action creates a latent legitimacy risk that, although not yet significantly reflected in short-term financial performance, can accumulate into a serious crisis of trust once information about the greenwashing eventually reaches the public through media investigation, environmental activism, or regulatory audit. The findings of this study should therefore not be read as a justification for companies to continue practicing greenwashing, but

rather as an early warning about a risk that is cumulative in nature and not immediately visible in conventional financial statements.

5.2 Research Limitations

Several limitations of this study should be acknowledged transparently. The relatively small sample size limits the generalizability of these findings to the broader population of manufacturing companies. The measurement of greenwashing through content analysis is inherently subjective and depends on the quality of the researcher's interpretation, making inter-rater reliability an important aspect that must be safeguarded. The use of a single measure, Return on Assets, as the financial performance proxy may not capture market-based valuation dimensions, such as share price or market capitalization, that are potentially more responsive to ESG information. In addition, the study is confined to a specific geographic focus within the Makassar industrial area, which restricts how far the findings can be extended to manufacturing companies operating in other regions.

5.3 Directions and Future Study

Although its current impact does not yet significantly damage financial performance, manufacturing companies are strongly advised to reduce manipulative narratives within their sustainability reports. As ESG literacy strengthens among global investors and environmental regulation tightens, greenwashing risks becoming a reputational time bomb that could hinder future access to green financing. For future research, it is recommended that researchers expand the sample coverage, use market performance proxies such as Tobin's Q or share value, and add a qualitative approach, such as field interviews, to confirm the real gap between central Corporate Social Responsibility policy and its realization at regional operational units.

For policymakers, these findings carry a concrete implication. Regulators such as the Financial services authority and the Indonesia stock exchange should consider strengthening independent verification requirements for sustainability claims disclosed by issuers, including a mandatory environmental audit conducted by an accredited third party. Such a policy would not only improve the quality of information available to investors but also create a real financial disincentive for companies engaging in greenwashing. Over the long term, greater transparency in sustainability reporting would support a more efficient allocation of capital toward companies genuinely committed to environmentally responsible business practice. Future studies are also encouraged to extend the sample to the full population of manufacturing companies across eastern Indonesia, to add a market performance proxy as a supplementary dependent variable, and to integrate field interviews that can validate the quantitative findings with richer operational context.

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Author Contributions

IH contributed to conceptualization, data collection, content analysis coding, formal analysis, writing of the original draft. WOR contributed to supervision, methodology validation, review and editing of the manuscript.

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