

Greenwashing and Financial Performance of Publicly Listed Manufacturing Companies in Makassar

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ABSTRACT

Purpose: This study aims to empirically analyze the impact of greenwashing practices on the financial performance (profitability/return on assets (ROA)) of manufacturing companies operating in Makassar.

Methodology: This quantitative study employs secondary data obtained from publicly listed manufacturing companies (Tbk) operating in Makassar from 2021 to 2025. Data analysis was conducted using simple linear regression and content analysis to measure the level of greenwashing practices.

Results: The statistical test results indicate that greenwashing practices have a negative but statistically insignificant effect on profitability (ROA).

Conclusions: Symbolic environmental practices may reduce profitability owing to operational inefficiencies; however, the regional market remains highly pragmatic, where traditional financial metrics continue to dominate the determination of ROA-based valuation.

Limitations: This study is limited to a specific geographical focus on the industrial area of Makassar and uses ROA as a proxy for financial performance.

Contribution: This study provides empirical evidence regarding ESG dynamics and greenwashing practices at the regional operational level, bridging the gap between corporate narratives developed at the headquarters level and their local implementation.

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

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1. Introduction

The development of the global economy and increasing public awareness of environmental issues have encouraged changes in the way companies conduct their business activities. Currently, corporate success is no longer measured solely by the amount of profit generated but also by the extent to which companies can fulfill their social responsibilities and maintain environmental sustainability ([Yusnita, Surya, & Yandra, 2026](#)). This condition has encouraged the emergence of the sustainability concept, which emphasizes the balance between economic, social, and environmental interests as an essential component of modern business strategy.

In this context, companies are required to integrate Environmental, Social, and Governance (ESG) principles into their operational processes and business decision-making. The implementation of ESG is considered a form of corporate commitment to establishing responsible, transparent, and sustainable business practices. ESG implementation has become a concern for regulators and a growing focus among investors, consumers, and the broader community, who demand that companies demonstrate tangible contributions to environmental and social sustainability ([Amalia & Kusuma, 2023](#)). Furthermore, the increasing integration of sustainability principles into corporate strategies has transformed the relationships between companies and their stakeholders. In the contemporary business environment, companies are expected to achieve economic objectives and demonstrate accountability for their environmental and social impacts ([Pangestu & Isbanah, 2026](#)).

This transformation has encouraged organizations to disclose sustainability-related information as a mechanism for maintaining their legitimacy and strengthening stakeholder trust. Sustainability disclosure has therefore become an important communication instrument that reflects corporate commitment to responsible business practices. However, the growing emphasis on environmental responsibility has created challenges, particularly when sustainability initiatives are implemented primarily to improve corporate reputation rather than to generate meaningful environmental improvements ([Aliyyah & Musa, 2024](#)). In developing countries, including Indonesia, the implementation of sustainable business practices faces unique challenges due to differences in regulatory enforcement, stakeholder awareness, and market characteristics.

Although many companies have adopted sustainability reporting frameworks and environmental initiatives, the quality and consistency of these disclosures remain varied. Manufacturing companies represent an important sector in sustainability discussions because their operational activities are closely associated with resource consumption, industrial emissions, waste generation, and environmental risks ([Kathan, Utz, Dorfleitner, Eckberg, & Chmel, 2025](#)). Consequently, companies in this sector face increasing pressure to demonstrate that their environmental commitments are supported by measurable actions rather than merely symbolic communication. The emergence of greenwashing reflects a critical issue in sustainability practices because it creates uncertainty regarding the credibility of corporate environmental information ([Dorfleitner, Eckberg, Utz, & Brehm, 2025](#)).

While sustainability disclosure can provide positive signals to investors and stakeholders, excessive environmental claims without sufficient evidence may reduce information reliability and create an information asymmetry. From an accounting and financial perspective, this issue is increasingly relevant because stakeholder perceptions of corporate responsibility may influence corporate

reputation, investor confidence, and ultimately, financial performance. Therefore, examining the relationship between greenwashing practices and profitability is essential to understand whether symbolic environmental strategies provide economic benefits or generate potential financial consequences ([Chen, Xie, Wang, & Zhu, 2025](#)).

Previous studies have primarily examined greenwashing from a conceptual perspective or within broader market contexts, while empirical evidence regarding its impact on financial performance at the regional operational level is limited. In particular, studies focusing on manufacturing companies with operational activities in specific industrial regions are still relatively scarce. This creates an important research opportunity because corporate sustainability narratives developed at the headquarters level may not always represent the actual implementation of environmental programs at the operational locations ([Sundarasan, Zyznarska-Dworczak, & Goel, 2024](#)). Therefore, this study contributes to the literature by providing empirical evidence on how greenwashing practices are associated with financial performance among publicly listed manufacturing companies operating in Makassar.

The increasing public attention toward sustainability issues has had positive impacts by encouraging companies to become more environmentally responsible. However, on the other hand, such pressure has also contributed to the emergence of greenwashing practices, namely situations in which companies communicate excessive, misleading, or unsupported environmental claims that do not fully correspond with their actual actions ([Feghali, Najem, & Metcalfe, 2025](#)). In practice, greenwashing may occur through sustainability reports that emphasize environmental achievements without sufficient evidence of implementation, or through corporate communication strategies that prioritize image-building rather than substantive changes.

Greenwashing has become an increasingly important issue to examine because it may create a gap between the information received by stakeholders and the actual conditions of companies. Many companies publish sustainability reports with limited transparency, making it difficult to objectively verify their green commitments ([Nisa & Sisdianto, 2025](#)). This may cause stakeholders, including investors and the public, to receive information that does not fully represent the sustainability practices implemented by companies. The inconsistency between ESG claims and actual corporate performance, often referred to as ESG-washing or a form of greenwashing, may have various negative consequences. When companies fail to demonstrate the sustainability commitments they claim, reputational risks may increase, and investor confidence may decline ([Wendi & Nurhayati, 2026](#)). In the long term, such conditions may not only affect the relationship between companies and stakeholders but also influence business stability and corporate value.

These issues indicate that sustainability cannot be achieved merely through narratives or symbolic actions; instead, it requires concrete policies and resource allocation. One way to implement such commitments is through Corporate Social and Environmental Responsibility (TJSLP/CSR) programs ([Sneideriene & Legenzova, 2025](#)). TJSLP/CSR funds are fundamentally designed as instruments to support social and environmental development by providing tangible benefits to communities and areas where companies operate. Therefore, TJSLP/CSR should not be positioned merely as a corporate image-building tool but as an integral part of corporate responsibility for sustainable development ([Hermawan, 2022](#)).

Based on these conditions, this study empirically examines whether symbolic sustainability practices without adequate substantive actions have the potential to influence corporate profitability. This study focuses on large-scale manufacturing companies with operational units in the Makassar region. The manufacturing sector was selected because it has relatively intensive operational activities and significant potential environmental impacts, resulting in increasing demands for ESG implementation and sustainability. Based on environmental phenomena, theoretical perspectives, and gaps identified in previous studies, this research aims to analyze the impact of greenwashing on financial performance and profitability in publicly listed manufacturing companies (Tbk) operating in Makassar during 2021–2025.

2. Literature Review and Hypothesis/es Development

Financial performance is one of the main indicators used to assess a company's success in conducting its business activities. In general, the primary objective of a business entity is to generate and optimize profits from the resources and capital that it invests ([Amalia, Rosalina, & Anggita, 2026](#)). A company's ability to generate profits reflects the effectiveness of operational management and serves as an important consideration for investors, creditors, and other stakeholders in evaluating the company's prospects and sustainability. Therefore, profitability is a commonly used measure to evaluate the financial health and performance of a company in both the short- and long-term ([Sundarasan, Zyznarska-Dworczak, & Goel, 2024](#)). In addition, consistent profitability enables companies to strengthen their competitive position, support future business expansion, improve shareholder value, and enhance their resilience against economic uncertainty and changing market conditions over time while ensuring sustainable organizational growth.

In financial and management research, profitability is generally measured using the Return on Assets (ROA) ratio. This ratio describes a company's ability to generate profits through the utilization of total assets ([Astuti, Sembiring, Supitriyani, Azwar, & Susanti, 2021](#)). A higher ROA indicates greater efficiency in asset management for profit generation. In the manufacturing sector, profitability is influenced by various factors, including operational efficiency, production cost control, asset productivity and corporate capital structure. Effective resource management is particularly important because manufacturing companies generally require substantial asset investments and involve complex operational activities ([Yanita, Desi, Surya, & Yayan, 2026](#)).

The development of the modern business environment indicates that non-financial factors also contribute to corporate profitability. One factor that has received increasing attention is sustainability disclosure quality. Companies are no longer assessed solely based on their financial achievements but also on their commitment to Environmental, Social, and Governance (ESG) issues. In this context, voluntary sustainability reporting is considered a communication mechanism that enables companies to demonstrate their responsibility and contribution to sustainable development ([Wahyuni & Aira, 2026](#)).

Previous studies have indicated that credible and transparent sustainability disclosures can positively influence investor perceptions and corporate value. High-quality sustainability information helps reduce information asymmetry between management and stakeholders, thereby increasing the company's trustworthiness. [Harfiani \(2020\)](#) and [Plumlee et al. \(2015\)](#) found that sustainability reporting conducted consistently and supported by actual implementation can

strengthen corporate reputation and positively influence profitability and firm value. Thus, sustainability disclosure functions not only as a reporting mechanism but also as part of a company's strategy to establish legitimacy and maintain long-term relationships with the market.

However, the benefits of sustainability reporting depend on the credibility of the information presented. When sustainability reports fail to reflect the actual conditions of a company and emphasize corporate image rather than substantive implementation, such practices may lead to greenwashing ([Taniya & Komalasari, 2026](#)). Greenwashing refers to corporate actions that create an environmentally friendly image through communication, symbols, or sustainability reports without adequate environmental actions to support these claims. This practice raises significant concerns because it may create a gap between public perceptions and the actual operational conditions of companies.

Theoretically, greenwashing practices can be explained from the perspectives of legitimacy and signaling theories. From the perspective of legitimacy theory, companies attempt to obtain social acceptance by presenting images that align with societal values and expectations ([Anggraini, Rosalina, & Anggita, 2026](#)). However, when legitimacy is established through claims inconsistent with actual actions, companies risk losing public trust once such inconsistencies are revealed. Meanwhile, signaling theory views sustainability information as a signal communicated by companies to investors and the market. Credible signals may strengthen investor confidence, whereas misleading signals may generate negative responses because they indicate low transparency and poor corporate governance quality.

From the perspective of corporate sustainability management, environmental responsibility has become an important determinant of corporate reputation and stakeholder relationships. Companies that genuinely integrate environmental considerations into their operational strategies are expected to achieve long-term benefits through improved efficiency, enhanced stakeholder trust and stronger market legitimacy. Environmental initiatives, such as reducing emissions, improving resource efficiency, and implementing responsible production processes, may contribute indirectly to financial performance by reducing operational risks and strengthening the competitive advantages. Therefore, sustainability practices are not only ethical obligations but also strategic investments that may influence corporate value creation ([Ramadhani, 2023](#)).

However, the economic consequences of sustainability practices largely depend on the credibility and consistency of environmental commitment. When companies provide environmental disclosures that are not supported by measurable actions, stakeholders may perceive such practices as symbolic efforts aimed at improving the corporate image rather than achieving substantive environmental outcomes. This condition represents the fundamental characteristics of greenwashing. Greenwashing can occur through selective disclosure, exaggerated environmental claims, incomplete reporting, or the presentation of positive environmental achievements while ignoring the negative environmental impacts ([Lestari, Marliani, & Yusnaini, 2026](#)). Such practices create a discrepancy between corporate communication and actual environmental performance, potentially reducing sustainability information reliability.

In accounting and financial research, information credibility plays a crucial role in reducing information asymmetry between companies and their external stakeholders ([Saraswati, Zakaria,](#)

[Atmini, Prastiwi, Santhini, George, & Iqbal, 2025](#)). Sustainability reports are expected to function as transparent communication mechanisms that provide relevant information on corporate environmental responsibility. However, when sustainability disclosures contain misleading information, the quality of the reported information decreases, which may influence stakeholder decision-making processes. Investors who identify inconsistencies between environmental claims and actual performance may reconsider their assessments of corporate risks and future prospects. Consequently, greenwashing practices may negatively influence corporate reputation, stakeholder confidence and financial outcomes.

The relationship between greenwashing and financial performance can also be explained from the resource-based perspective. Companies generally seek to develop valuable resources, including reputation, stakeholder trust, and sustainable capabilities, to achieve competitive advantage. Genuine environmental commitment may become a strategic resource that differentiates a company from its competitors. Conversely, greenwashing practices may weaken these intangible resources because they expose companies to reputational damage and regulatory concerns. Once stakeholders perceive environmental claims as unreliable, companies may experience declining legitimacy and increased costs in restoring public confidence ([Silvia, 2026](#)).

Furthermore, manufacturing companies represent a relevant context for examining the relationship between greenwashing and financial performance because this sector has significant environmental exposure. Manufacturing activities generally involve intensive resource utilization, energy consumption, waste generation, and environmental impacts. Therefore, stakeholders tend to pay greater attention to the environmental behavior of manufacturing companies than to companies operating in less environmentally intensive sectors. In this context, the credibility of sustainability practices is an important factor that may influence stakeholder evaluations and corporate sustainability performance.

Although sustainability practices have the potential to provide economic benefits, previous studies have indicated that symbolic environmental actions may not generate similar advantages. Companies that focus more on environmental communication than on actual environmental improvement may allocate resources inefficiently. Expenditures directed toward promotional activities, sustainability campaigns, or reputation management, without corresponding operational improvements, may increase costs without producing proportional financial returns ([Purnamasari & Umiyati, 2024](#)). Therefore, greenwashing practices may negatively affect profitability because they represent a gap between corporate expectations and actual sustainability.

Based on these theoretical arguments, greenwashing practices are expected to negatively affect financial performance. Companies that engage in greenwashing may face reduced stakeholder trust, increased reputational risk, and inefficient resource allocation, which can ultimately affect profitability. Although the magnitude of this relationship may vary depending on market characteristics, regulatory conditions, and stakeholder awareness, the theoretical assumption suggests that higher levels of greenwashing tend to reduce corporate financial performance.

The empirical findings support these theoretical arguments. [Walker and Wan \(2012\)](#) found that symbolic environmental actions or green talk are negatively associated with corporate financial performance in the US. This finding indicates that markets do not merely evaluate the existence of

environmental claims but also assess the alignment between corporate communications and actual practices. This argument is further supported by [Prihadianti \(2018\)](#) and [Noviyanti and Priyawan \(2025\)](#), who emphasized that manipulated environmental performance and sustainability claims inconsistent with actual practices tend to receive negative responses from investors and markets. When companies are perceived to engage in greenwashing, reputational risks increase and stakeholder trust may decline, which ultimately has the potential to affect corporate profitability.

Although research on greenwashing has developed considerably, several gaps remain. Most previous studies measure greenwashing at the national index level or among companies included in specific indices, such as the SRI-KEHATI and LQ45 indices ([Biancone, Secinaro, Brescia, & Degregori, 2026](#)). These approaches provide a general overview of greenwashing practices but often fail to capture the dynamics of sustainability implementation at a more specific operational level, particularly among companies with direct physical activities and significant environmental impact. Addressing this research gap, this study seeks to provide a more contextual perspective by examining greenwashing practices in manufacturing companies with operational units in the industrial area of Makassar.

This context was selected because of the characteristics of the manufacturing sector, which has a relatively high resource consumption intensity and potential environmental impacts. Furthermore, the existence of physical operational units enables this study to examine how sustainability claims at the national or corporate level are tested through the implementation of CSR programs and environmental activities at the local level in the same country. This approach is expected to provide a more realistic understanding of the relationship between greenwashing practices and corporate financial performance. Based on the theoretical foundation, previous empirical findings, and identified research gaps, this study hypothesizes that greenwashing practices have the potential to reduce corporate financial performance. When companies prioritize environmental image building over actual sustainability implementation, market confidence may decline, and reputational risks may increase, ultimately affecting corporate profitability.

H₁: Greenwashing practices have a negative and significant effect on the financial performance (profitability/ROA) of manufacturing companies operating in Makassar

3. Methodology

This study employs an empirical quantitative research approach that is entirely based on secondary data collection, rather than experimental or survey-based research designs. The research assumptions are grounded in Legitimacy Theory, which posits that business entities tend to engage in greenwashing practices to obtain social and investor legitimacy without necessarily incurring actual environmental operational costs. This methodological approach allows us to objectively evaluate the relationship between greenwashing practices and corporate profitability by utilizing documented corporate information. The use of secondary data also ensures consistency, transparency, and comparability among the selected manufacturing companies during the observation period, thereby supporting the reliability of our empirical analysis. Furthermore, this approach minimizes the potential response bias commonly found in primary data collection and enables researchers to examine the actual corporate practices reflected in official disclosures and financial reporting documents.

3.1 Materials and Data Collection Methods

The primary materials analyzed in this study were documented annual and sustainability reports. The target population comprised manufacturing companies listed on the Indonesia Stock Exchange (IDX). The sampling technique was conducted using purposive sampling with strict criteria: the companies must be publicly listed entities (Tbk), operate large-scale physical business units or manufacturing facilities in the Makassar region (such as the Makassar Industrial Estate/KIMA area), and consistently publish environmental-related reports during the 2021–2025 period.

3.2 Variable Measurement

This study involved two main variables with clearly defined measurement procedures to facilitate replication by future researchers under comparable research conditions. The dependent variable was financial performance, measured using profitability through the Return on Assets (ROA) ratio. ROA was calculated by dividing net income after tax by the company's total assets for the corresponding fiscal year. The independent variable was greenwashing practices, which were measured using a content analysis approach. The greenwashing score was determined by calculating the percentage of environmentally friendly statements or claims disclosed in the Sustainability Reports that were categorized as symbolic. These symbolic claims referred to environmental narratives presented without adequate quantitative evidence or supporting Corporate Social Responsibility (CSR) expenditures related to environmental preservation as disclosed in the corresponding Annual Reports.

3.3 Hardware and Software

To ensure accuracy and time efficiency in accessing and processing large annual report PDF files, data extraction was performed using hardware equipped with a high-speed Samsung 980 500GB SSD storage device. All statistical analysis procedures, including panel data tabulation, descriptive statistical analysis, classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation tests), and multiple linear regression analysis, were conducted using IBM SPSS Statistics version 29 on the Windows operating system. A detailed presentation of the computational specifications and analytical procedures ensures research transparency and enhances the reproducibility of the research design, allowing readers and future researchers to replicate the study under comparable conditions.

4. Results and Discussion

4.1 Classical Assumption Tests

Before conducting regression analysis, the collected secondary data must fulfill the classical assumption requirements to ensure that the applied linear regression model meets the criteria of the Best Linear Unbiased Estimator (BLUE).

4.1.1 Normality Test

Based on the test results using the normal P-P plot of regression-standardized residuals, the data points were distributed evenly and followed the direction of the diagonal line. This finding indicates that the residual values are normally distributed, suggesting that the normality assumption is satisfied.

4.1.2 Heteroscedasticity Test

Based on the Scatterplot analysis, the data points were randomly distributed without forming any specific pattern (such as clustering, widening, or narrowing patterns) and were scattered both above

and below the value of 0 on the Y-axis. This result confirms that there is no indication of heteroscedasticity in the regression model used in this study.

4.2 Simple Linear Regression Analysis

A simple linear regression analysis was conducted to examine the direction and magnitude of the effect of greenwashing practices on corporate profitability. The results of the regression coefficient test are as follows:

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

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1 (Constant)	5.848	3.541		1.652	.123
Greenwashing Score (X)	-.008	.073	-.031	-.113	.911
a. Dependent Variable: ROA (Y) in %					

Table 1 shows the constant value of 5.848 indicates that when a company does not engage in greenwashing practices (greenwashing score=0%), the projected Return on Assets (ROA) is 5.848%. Meanwhile, the regression coefficient for greenwashing is -0.008 , indicating a negative relationship between greenwashing practices and financial performance. Specifically, a 1% increase in the greenwashing score is associated with a 0.008% decrease in ROA. Although the magnitude of the effect is relatively small, the negative coefficient suggests that higher levels of greenwashing tend to reduce corporate profitability, as measured by ROA.

4.3 Hypothesis Testing and Coefficient of Determination (R Square)

Table 2. Coefficient of determination test results (model summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.031	.001	-.076	2.4586
a. Predictors: (Constant), Greenwashing Score (X) in %				
b. Dependent Variable: ROA (Y) in %				

Table 2 shows the coefficient of determination (R Square) is 0.001. This finding indicates that the greenwashing variable (X) can only explain 0.1% of the variation or changes in the ROA variable (Y). The remaining 99.9% is influenced by other financial and operational factors that this study did not examine.

Table 3. Model Feasibility Test Results (ANOVA/F-Test)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.078	1	.078	.013	.911
Residual	78.580	13	6.045		
Total	78.657	14			
a. Dependent Variable: ROA (Y) in %					
b. Predictors: (Constant), Greenwashing Score (X) in %					

Table 3 shows the t-value is -0.113, with a significance level of 0.911. Because the significance value is considerably higher than the standard probability threshold ($0.911 > 0.05$), hypothesis (H_1) is rejected. This indicates that greenwashing practices have a negative but statistically insignificant effect on the profitability (ROA) of manufacturing companies in Makassar, Indonesia. This finding is further supported by the ANOVA test results, which show a significance value of 0.911 and an F-value of 0.013, confirming that the regression model is not statistically significant in predicting the ROA.

4.4 Discussion

Although the partial and simultaneous statistical tests indicate that greenwashing practices do not significantly affect financial performance, the negative direction of the regression coefficient provides important empirical insights. This finding remains theoretically consistent and supports the arguments proposed by [Walker and Wan \(2012\)](#) and [Wendi and Nurhayati \(2026\)](#). Both studies emphasize that corporate actions characterized by symbolic environmental commitments (green talk) without being accompanied by substantive actions (green walk) may ultimately have adverse consequences for corporate financial performance.

The negative coefficient direction identified in this study indicates that inconsistencies between environmental preservation claims and actual environmental expenditure may lead to operational inefficiencies. Resources that should have been allocated toward substantive green infrastructure improvements may instead be absorbed by public relations campaigns aimed at maintaining the corporate image. Over time, such practices may increase operational burdens, reduce net income, and negatively affect the Return on Assets (ROA) ratio. The insignificant relationship identified in this study can be rationally and systematically explained by several factors, including market ecosystem characteristics, stakeholder behavior, and the specific characteristics of the research objects.

4.4.1 Capital Market Pragmatism and Regional Investor Behavior

Capital markets and most institutional investors in emerging markets tend to demonstrate pragmatic investment behavior. Environmental, Social, and Governance (ESG) indicators and the quality of Sustainability Reports have not yet become absolute determinants in investment decision-making processes. Sustainability reporting is often perceived as a form of regulatory compliance rather than a strategic mechanism for enhancing corporate value. Consequently, the presence or absence of greenwashing practices does not immediately generate significant market reactions or shocks that could lead to substantial investment withdrawals and directly affect ROA performance.

4.4.2 Dominance of Traditional Financial Performance Metrics

For large-scale manufacturing companies operating in industrial centers such as the Makassar Industrial Estate (KIMA), profitability is primarily determined by more dominant fundamental factors. Traditional financial performance indicators, including actual sales volume and growth, operating cost efficiency, cost of goods sold, fluctuations in raw material commodity prices, and capital structure measured through the Debt-to-Equity Ratio (DER), play a more decisive role in determining ROA performance. This finding confirms and strengthens the argument proposed by [Noviyanti and Priyawan \(2025\)](#), who stated that traditional financial factors remain the dominant foundation of market valuation and represent the most critical drivers of investor sentiment compared to green accounting adoption or environmental initiatives when examined separately.

5. Conclusions

5.1 Conclusion

This study aims to analyze the impact of greenwashing practices on financial performance, as measured by the Return on Assets (ROA) ratio, among publicly listed manufacturing companies (Tbk) operating in Makassar during the 2021–2025 period. Based on the results of the secondary data analysis and simple linear regression testing, it can be concluded that greenwashing practices have a negative but statistically insignificant effect on corporate profitability. The negative relationship indicates that environmental initiatives characterized only by symbolic commitments (green talk) without substantive implementation may create inefficiencies that reduce corporate profitability. Meanwhile, the insignificant effect confirms that market participants and investors, particularly in the evaluation of large-scale manufacturing companies operating in industrial regions, remain highly pragmatic. Traditional financial performance indicators, such as sales growth, operational efficiency, and capital structure, continue to serve as the primary determinants of ROA performance compared with the quality and credibility of environmental claims.

Although greenwashing practices have not yet demonstrated a significantly adverse impact on financial performance, manufacturing companies are strongly encouraged to reduce potentially misleading narratives in their sustainability disclosures. As global ESG awareness among investors continues to increase and environmental regulations become more stringent, greenwashing practices may become a reputational risk that limits companies' access to green financing opportunities. Future research should expand the research sample, employ market-based performance indicators (such as Tobin Q or stock value), and incorporate qualitative approaches, including field interviews, to further examine the gap between centralized CSR policies and their actual implementation at regional operational units.

5.2 Research Limitations

This study has several limitations. First, the research focuses only on publicly listed manufacturing companies operating in Makassar, resulting in a relatively small number of observations and limiting the generalizability of the findings to other sectors and regions. Second, financial performance is measured solely using Return on Assets (ROA), which may not fully capture market-based responses to greenwashing practices. Third, greenwashing is assessed through content analysis of annual and sustainability reports, which may involve subjective interpretation and may not accurately reflect actual environmental practices at regional operational units. Fourth, the study employs a simple regression model that examines greenwashing as the only explanatory variable, although corporate profitability may also be influenced by sales growth, operational efficiency, company size, leverage, capital structure, and other financial factors. Finally, the use of secondary and consolidated corporate reports limits the study's ability to directly verify differences between environmental claims made at the headquarters level and their implementation in manufacturing facilities operating in Makassar.

5.3 Suggestions and Directions for Future Research

Future research is encouraged to expand the sample by including companies from different manufacturing subsectors, industrial regions, and countries to improve the generalizability of the findings. Subsequent studies may also extend the observation period and use additional financial performance indicators, such as Return on Equity, Tobin Q, stock returns, and firm value, to

examine both accounting-based and market-based consequences of greenwashing. Researchers should consider incorporating control variables, including company size, leverage, sales growth, operational efficiency, environmental performance, and governance quality, to develop a more comprehensive analytical model. Furthermore, mixed-method or qualitative approaches involving interviews, field observations, and verification of corporate environmental programs could provide deeper insights into the gap between sustainability disclosures and actual practices. Future studies may also investigate moderating or mediating variables, such as stakeholder pressure, investor awareness, environmental regulation, corporate reputation, and ESG assurance, to explain the conditions under which greenwashing affects corporate financial performance.

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