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The Effect of Greenwashing on Firm Performance with Multiple Directorships as Moderating Variable

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ABSTRACT

This study investigates the impact of greenwashing on firm performance, with a focus on the moderating role of multiple directorships in the context of Indonesian public companies. Greenwashing, defined as the dissemination of misleading environmental information, has been shown to adversely affect firm performance, particularly in terms of profitability and long-term sustainability. **Using data from companies listed on the Indonesia** Stock Exchange (IDX) from 2018 to 2022, the study employs panel data analysis to examine the relationship between greenwashing, firm performance, and the influence of multiple directorships. **The findings reveal that greenwashing** significantly harms firm performance, as measured by Return on Assets (ROA). However, the presence of multiple directorships, while positively associated with firm performance, does not exhibit a statistically significant impact. Additionally, **the moderating effect of multiple directorships** on the relationship between greenwashing and firm performance is found to be negative but insignificant. **These results suggest that** while greenwashing poses a substantial risk to corporate financial health, the role of multiple directorships in mitigating or exacerbating this effect remains limited. The study highlights the importance of stricter Environmental, Social, and Governance (ESG) reporting standards to curb greenwashing practices and enhance corporate transparency.

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1. INTRODUCTION

Consumers worldwide are increasingly recognizing environmental issues, leading to a surge in research and discussions in both academic and industry circles [1]. This growing awareness of ecological concerns has motivated consumers to become more proactive, adopting environmentally conscious consumption patterns [2]. In response to this heightened consumer interest in environmentally friendly products and services, manufacturers have been compelled to allocate substantial resources to the marketing and sale of "green" products [3, 4]. However, when a company falls short of its environmental commitments, the phenomenon of greenwashing emerges as a salient concern [5]. While a universal definition of greenwashing remains elusive, scholars in the field have converged on the characterization of greenwashing as a form of false advertising or deceptive claims [6]. Companies engage in environmentally unfriendly practices to gain a competitive edge and achieve superior performance, one such method being greenwashing [7].

In the Indonesian context, discourse on greenwashing remains limited, which facilitates the adoption

of greenwashing strategies by relevant stakeholders and individuals in the market [8]. According to the Ministry of Finance, greenwashing is defined as a marketing strategy aimed at creating a positive image of a firm or its products [9, 10]. The use of terms such as "clean energy" can potentially lead to the dissemination of misleading information to investors and customers, resulting in a failure to deliver accurate information [11]. This phenomenon is particularly concerning for individuals and entities that have invested in environmental initiatives and businesses promoting sustainability [12]. As companies increasingly use greenwashing strategies, consumers are subjected to disinformation, which engenders concern regarding potential risks and ultimately results in a loss of trust in the company's provided information. This loss of trust can have a detrimental impact on the company's overall performance [13].

Firm performance encompasses profitability, sales growth, market value, and operational efficiency as key indicators of business success and sustainability. Given the mounting pressure for businesses to adopt environmentally responsible practices, the relationship between greenwashing and firm performance has become increasingly complex [14]. A body of literature suggests that greenwashing can temporarily enhance short-term performance metrics such as sales and market valuation [15]. However, other studies indicate that this practice can harm long-term performance, particularly when exposed, leading to a drastic decline in stakeholder trust and firm value [16].

In the realm of corporate governance, the role of corporate environmental strategies and practices has garnered considerable interest, especially in today's dynamic business environment [17]. A particularly intriguing aspect of corporate governance that warrants closer examination is the phenomenon of multiple directorships [18]. This refers to individuals holding positions on the board of directors or commissioners across multiple companies, which can significantly impact strategic decision-making processes, including the formulation of environmental policies and the promotion of corporate transparency [19].

The phenomenon of multiple directorships has been identified as a potential mechanism for facilitating the transfer of knowledge and best practices among corporate entities [20]. This transfer can raise awareness of authentic sustainability practices. However, when regarded as a "successful" strategy in one company, it can also contribute to the spread of greenwashing practices. The complexities of the board network, shaped by dual positions, can impede the efficacy of oversight and accountability, thereby moderating the occurrence of greenwashing and subsequently impacting firm performance.

In Indonesia, where dual-position practices are prevalent among public companies, research on the relationship between greenwashing, firm performance, and dual positions has gained significant relevance. Given the increasing environmental consciousness and regulatory demands for sustainable business practices in Indonesia, it is crucial for stakeholders to develop a deeper understanding of these dynamics [21].

The impact of greenwashing on performance has been extensively studied in previous research [22]. However, the examination of this phenomenon through the lens of dual positions remains limited. Research indicates that greenwashing exerts a substantial influence on firm performance, moderated by environmental regulations and media [23]. Other studies suggest that the adverse impact of environmental performance on the greenwashing practices of state-owned enterprises is more substantial than that of non-state-owned enterprises. Furthermore, institutional investor visits have been shown to significantly reduce greenwashing behavior [24]. Another study highlights that perceived greenwashing negatively impacts performance, with organizational cynicism mediating this relationship [25].

This study aims to address this gap in the literature by providing a comprehensive analysis of the impact of greenwashing on corporate performance, with a particular focus on the moderating effect of multiple directorship practices [26, 27].

2. THE COMPREHENSIVE THEORETICAL BASIS

2.1. Firm Performance

Firm performance refers to the outcomes achieved by a company through its operational activities [28]. Although businesses may be established for various reasons, a primary objective is generally to generate profit for owners and stakeholders [29]. Beyond profit and productivity, evaluating firm performance is essential to assess long-term sustainability [30, 31]. Business sustainability extends beyond economic results to include environmental performance, which reflects the impact of a company's processes, services, and products on the environment [32, 33].

2.2. Multiple Directorships

The term "Multiple Directorships" refers to an individual who holds concurrent positions as a director and/or committee member (board of commissioners) in two or more companies. Holding multiple directorships confers a wealth of experience to the board of commissioners, thereby enhancing the company's competitive advantage. This experience may encompass crucial insights into consumers, distributors, human resources, finance and operations, strategic planning, and other business innovations [34].

2.3. Greenwashing

In 2012, the United Nations (UN) established a set of objectives known as the Sustainable Development Goals (SDGs) to address global challenges [35]. From a corporate perspective, issues related to climate change and sustainability are significant concerns. Companies today face a multifaceted challenge, and ESG considerations are becoming increasingly important in the implementation and achievement of SDGs [36]. To enhance their performance and sustain their sustainability, companies must prioritize environmental protection and cultivate an image that emphasizes their commitment to ESG in the production of their products and services. This approach enables companies to maintain, improve, and attract customers who are drawn to the company's environmental initiatives [37].

The practice of greenwashing defined as the dissemination of environmentally sustainable brand imagery by companies while engaging in practices that contradict this image is a notable concern [38]. By employing environmentally friendly production processes, companies can create a perception of sustainability in the public eye [39]. However, there are instances where companies may manipulate public opinion to gain a competitive advantage [40].

2.4. Greenwashing Practice on Firm Performance

The phenomenon of greenwashing, defined as the dissemination of misleading environmental information by corporate entities, can be mitigated through proactive intervention by regulatory authorities. Research conducted on Chinese companies from 2010 to 2018 supports this assertion. The findings indicate that companies receiving environmental protection subsidies experienced a more substantial inhibitory effect on greenwashing. State-owned companies in China encountered a more pronounced adverse impact on ecological performance if they engaged in greenwashing activities compared to non-state-owned companies [41].

Similarly, the detrimental actions of companies, such as greenwashing, aimed at achieving their objectives, have inflicted harm on European companies [42]. A comprehensive study encompassing 2,576 companies in Europe between 2002 and 2022 revealed that companies engaging in greenwashing could witness a decline in performance within a year or more [43].

Thus, it can be posited that companies' greenwashing behavior can be controlled and assessed in terms of their environmental performance based on ESG metrics. In other words, the better a company's environmental performance, the more distant it will be from engaging in greenwashing practices, thereby helping avoid declining performance in the future. The first hypothesis can be proposed as follows:

H1. Greenwashing influences firm performance.

2.5. Multiple Directorships on Firm Performance

In contexts characterized by lax investor protection regulations, the presence of multiple directorships has been shown to contribute to enhanced corporate governance and performance. However, their implementation must be accompanied by strict monitoring mechanisms to mitigate potential risks [44]. A Malaysian study revealed a positive correlation between the number of directorships held by company officials and the performance of their respective enterprises, particularly in the construction, manufacturing, and trading/service sectors. Directors holding multiple positions contribute a wealth of experience, expand business networks, and enhance the ability to interpret and implement optimal corporate governance practices [45, 46]. This, in turn, fosters informed decision-making and the development of more effective business strategies, thereby enhancing overall company performance [47]. Therefore, the second hypothesis that can be proposed is as follows:

H2. Multiple directorships influence firm performance.

2.6. Moderation of Multiple Directorships on the Effect of Greenwashing on Firm Performance

According to the stipulations outlined in OJK Regulation Number 33/POJK. 04/2014, the number of dual positions of directors and commissioners shall not exceed five. This principle is further reinforced by

Law No. 5 of 1999, which aims to mitigate the potential for monopolization of products or services in the market [48]. Additionally, the effectiveness of commissioner supervision within a company depends on the commissioner's dedication and accountability in fulfilling their supervisory obligations regarding the execution of company management by the agent. Greenwashing effects on firm performance are also influenced by the presence of multiple directorships. Combining these roles in one individual maximizes their sense of responsibility to the firm, resulting in increased interest and enthusiasm to improve the company's performance [49, 50]. Therefore, the third hypothesis can be proposed as follows:

H3. Multiple directorships strengthen the effect of greenwashing on firm performance.

3. METHODOLOGY

The sampling methods employed in this study encompassed two primary approaches: non-probability sampling and purposive sampling. This study focused on public companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022, particularly those that published their ESG reports on Thomson Reuters consecutively during the research period.

The data for this study were obtained from annual reports, which contained all the necessary information for the research, including ESG values, commissioner positions outside the sample companies, and financial data. These data were accessed from various sources, such as the IDX, company websites, and Thomson Reuters.

Empirical testing involved the use of several statistical methods, including:

- Descriptive statistics
- Correlation analysis
- Regression analysis with panel data techniques
- Model testing

These methods were employed to analyze the relationships between greenwashing, firm performance, and the moderating effects of multiple directorships.

4. RESULTS AND DISCUSSION

4.1. Results

Descriptive statistical analysis was conducted to show the minimum, maximum, mean, and standard deviation values of each research variable. The results of the descriptive analysis for each research variable are as follows:

Table 1. Descriptive Statistics

Variable	Mean	Maximum	Minimum	Std. Dev.	Observations
ROE	15.78%	238.25%	-150.26%	31.09%	200
GW	-0.0000000000000212%	137.66%	-112.74%	33.55%	200
RJK	0.970000	1.000000	0.000000	0.171015	200
SIZE	18.05516	21.41268	15.39096	1.320950	200
DAR	0.225745	0.785234	0.000328	0.188462	200
PBV	3.284000	59.41000	0.180000	7.851709	200

Table 1 illustrates the descriptive statistics of variables during the study period. The mean Return on Equity (ROE) was 15.78%, with extreme values recorded by Matahari Department Store Tbk PT (LPPF.JK): the lowest at -150.26% in 2020, and the highest at 238.25% in 2022. Meanwhile, Greenwashing (GW) had an average value close to zero at approximately -0.0000000000000212%. The lowest GW value was -112.74%, recorded by Unilever Indonesia Tbk PT (UNVR.JK) in 2020, whereas the highest was 137.66%, recorded by Indo Tambangraya Megah Tbk PT (ITMG.JK) in 2021. Concurrent Positions (RJK) displayed a mean of 0.97000, ranging between 0 and 1.

Furthermore, Firm Size averaged at 18.05516, with the smallest firm recorded by Matahari Department Store Tbk PT (LPPF) in 2019 (15.3910) and the largest by Bank Mandiri (Persero) Tbk PT (BMRI) in 2022 (21.41268). Leverage (DAR) averaged at 0.225745, with minimum leverage observed at Indo Tambangraya Megah Tbk PT (ITMG.JK) in 2018 (0.000328) and the highest at Tower Bersama Infrastructure Tbk PT (TBIG) in the same year (0.785234). Lastly, Price to Book Value (PBV) had a mean of 3.284000, with Global Mediacom Tbk PT (BMTR.JK) holding the minimum values (0.180000) in 2021 and 2022, and Unilever Indonesia Tbk PT (UNVR.JK) recording the maximum (59.41000) in 2019.

4.2. Model Selection Tests

The Chow test was conducted to select the most suitable model between the Common Effects Model (CEM) and the Fixed Effects Model (FEM), as shown in Table 2.

Table 2. Results of Chow Test

Model	Probability	Models being compared	Conclusion
Model 1	0.6412	CEM vs FEM	CEM was selected over FEM.
Model 2	0.6460		CEM was selected over FEM.

The probability values for Model 1 and Model 2 are 0.6412 and 0.6460, respectively. Since both values exceed 0.05, the CEM was deemed the most suitable. This indicates that there is no significant heterogeneity across individuals in the dataset, implying that a fixed-effects approach would not provide additional explanatory power beyond what the CEM offers.

Next, the Hausman test was used to determine the best model between the FEM and the Random Effects Model (REM), as presented in Table 3. The Hausman test evaluates whether the unique errors in the model correlate with the explanatory variables. If the probability value is below 0.05, the FEM is preferred because it suggests a correlation between the regressors and individual-specific effects. Conversely, if the probability value is above 0.05, the REM is preferable, as it assumes no such correlation, making it more efficient in estimating coefficients.

The results of the Hausman test for Model 1 and Model 2 yielded probability values of 1.0000 in both cases, which significantly exceeds the 0.05 threshold. This suggests that the null hypothesis cannot be rejected, indicating that the REM is the more appropriate model for this study. By using REM, the analysis assumes that individual-specific variations are random and uncorrelated with the explanatory variables, allowing for more generalizable conclusions.

Therefore, based on the results of both the Chow test and the Hausman test, the study proceeds with the CEM and the REM as the primary models for analysis.

Table 3. Results of Hausman Test

Model	Probability	Models being compared	Conclusion
Model 1	1.0000	REM vs FEM	REM was selected over FEM.
Model 2	1.0000		REM was selected over FEM.

Table 3 shows the results of the Hausman test conducted to determine whether the FEM or the REM is more appropriate. The probability values for both Model 1 and Model 2 are 1.0000, which exceeds the 0.05 threshold. Since the null hypothesis of no correlation between the regressors and individual effects cannot be rejected, the REM is deemed the most suitable model. This implies that individual-specific variations are considered random and uncorrelated with the explanatory variables, making REM a more efficient estimation technique in this context. The selection of REM suggests that the unobserved heterogeneity across firms does not systematically influence the explanatory variables, which allows for more generalized conclusions. Moreover, the use of REM enables the inclusion of time-invariant variables, which is beneficial for understanding long-term structural relationships. However, it is important to ensure that the REM assumption holds; otherwise, employing a robust estimation method, such as cluster-robust standard errors, may be necessary to address potential misspecification issues.

4.3. Multicollinearity and Heteroscedasticity Tests

Table 4. Multicollinearity Test

Variable	Model 1 VIF	Model 1 (1/VIF)	Model 2 VIF	Model 2 (1/VIF)
GW	1.001022	0.998979	1.006570	0.993473
RJK	-	-	1.137076	0.879449
GWxRJK	-	-	1.165617	0.857915
SIZE	1.077364	0.928191	1.092655	0.915202
DAR	1.034997	0.966186	1.043048	0.958729
PBV	1.054788	0.948058	1.059130	0.944171

Table 4 presents the results of the multicollinearity test. The variance inflation factor (VIF) values for all models are below 10, and the tolerance values (1/VIF) are greater than 0.1, indicating that the independent variables do not exhibit multicollinearity. This suggests that there is no significant correlation between the independent variables, ensuring the reliability of the regression estimates. The absence of multicollinearity implies that the estimated coefficients remain stable and unbiased, which is crucial for the accuracy of the model. Furthermore, maintaining low VIF values helps improve the interpretability of the regression coefficients, allowing for a more precise understanding of the impact of each predictor variable on the dependent variable.

Table 5. Results of Heteroscedasticity Test

Independent Variable	Model 1 t-Statistic	Model 1 p-Value	Model 2 t-Statistic	Model 2 p-Value
GW	-1.058207	0.2913	-1.074223	0.2841
RJK	-	-	-0.279662	0.7800
GWxRJK	-	-	1.489534	0.1380
SIZE	-2.807055	0.0055	-2.955366	0.0035
DAR	3.750054	0.0002	3.790684	0.0002
PBV	3.159328	0.0018	3.028618	0.0028

Table 5 presents the heteroscedasticity test results, showing that the probability values of the independent variables are below 0.05, which indicates a violation of the homoscedasticity assumption. This means the variance of the residuals is not constant across observations and may lead to inefficient coefficient estimates and unreliable statistical inference. Such heteroscedasticity can be caused by differences in firm size, industry characteristics, or variations in companies' financial structures. To mitigate this problem, the model can be improved by applying robust standard errors or using Generalized Least Squares (GLS). Addressing heteroscedasticity is therefore essential to maintain the validity of hypothesis testing and ensure that the estimated coefficients accurately represent the relationships within the data.

Table 6. Results of Autocorrelation Test

Model	Obs*R-squared	Probability
Model 1	22.55386	0.0000
Model 2	22.36507	0.0000

Table 6 presents the results of the autocorrelation test, indicating a violation of the autocorrelation assumption in both models. This suggests that the residuals are correlated over time, which can lead to biased standard errors and inefficient coefficient estimates, ultimately affecting the reliability of hypothesis testing. Autocorrelation often occurs in panel data due to time-series dependencies, where past values influence current observations, especially in financial and economic datasets. The presence of autocorrelation implies that Ordinary Least Squares (OLS) estimators may no longer be the best linear unbiased estimators (BLUE), potentially distorting inference. To mitigate this issue, techniques such as the inclusion of lagged dependent variables, the use of the Prais-Winsten or Cochrane-Orcutt transformation, or the application of robust standard errors (such as the Newey-West estimator) can be considered. Addressing autocorrelation is essential to improve the precision and validity of the regression results, ensuring that the estimated relationships accurately represent the underlying data patterns.

4.4. Panel Test Results

Table 7. Results of Panel Test

Independent Variable	Model 1 Coefficient	Model 1 p-Value	Model 2 Coefficient	Model 2 p-Value
C	0.352102	0.1230	0.315704	0.1881
GW	0.046372	0.3196	0.048793	0.2985
RJK	-	-	0.048377	0.6251
GWxRJK	-	-	0.075974	0.7674
SIZE	-0.014113	0.2506	-0.014731	0.2359
DAR	-0.133783	0.1134	-0.128675	0.1309
PBV	0.027627	0.0000***	0.027560	0.0000***
R2	0.519641	-	0.520868	-
Prob. > F	0.000000***	-	0.000000***	-

Table 7 presents the results of the panel test, with coefficients and probabilities for both models. The findings of the F test demonstrate that all variables exhibit a significant influence on each other, as indicated by a p-value of less than 0.05. The coefficient of determination (R2) for Model 1 is 0.519641, and for Model 2, it is 0.520868, indicating that the independent variables explain about 51.96% and 52.09% of the variation in the dependent variable, respectively.

4.5. Discussion

- Greenwashing Practices on Firm Performance

  The findings of this study demonstrate that greenwashing practices have a substantial adverse effect on a company's financial performance, as measured by ROA. These findings substantiate H1 in both models, consistent with previous research indicating that greenwashing can adversely affect a company's reputation, diminish customer loyalty, and reduce profitability.

- Multiple Directorships on Firm Performance

  The empirical evidence obtained from the test indicates that the possession of multiple directorships exerts a positive but statistically insignificant influence on company performance, as measured by ROA. This outcome lends support to H2 in Model 2.

- Moderation of Multiple Directorships on the Effect of Greenwashing on Firm Performance

  The empirical findings demonstrate that greenwashing moderated by dual positions exerts a negative yet statistically insignificant influence on firm performance. These results do not provide sufficient evidence to support H3.

- Research Limitations

  This study does not examine the long-term impact of greenwashing and dual positions on company performance.

- Research Implementation

  This research was implemented by conducting a literature study, creating a research model, and collecting and analyzing data.

5. MANAGERIAL IMPLICATIONS

5.1. Government Regulations and ESG Reporting

The government has developed and is enforcing stricter standards for ESG reporting with the objective of reducing the risk of greenwashing. This regulatory effort is aimed at ensuring that companies provide transparent and accurate environmental disclosures, thereby reducing the risk of deceptive practices that can harm both the market and the public trust.

5.2. Penalties for Greenwashing

In addition to tightening ESG reporting standards, the government is considering the imposition of penalties on companies that engage in greenwashing. These penalties would serve as a deterrent against the dissemination of misleading environmental claims that companies may use to appear more sustainable than they truly are. By enforcing penalties, the government aims to promote ethical corporate behavior and foster a more transparent business environment.

5.3. Transparency in ESG Reporting

To align with these stricter regulations and avoid potential penalties, companies are advised to persist in enhancing the transparency of their ESG reporting. This includes focusing on providing accurate and comprehensive disclosures that reflect the company's actual environmental impact. By doing so, companies can cultivate enduring trust among investors and consumers, which is essential for long-term success.

5.4. Limited Greenwashing Practices

While the emphasis is on accurate ESG reporting, companies may consider allowing limited greenwashing practices in instances where the intention is to promote environmental initiatives that are still in development. However, such practices should be carefully controlled and clearly communicated to avoid misleading stakeholders.

5.5. Mitigating Conflicts of Interest and Ensuring Effective Governance

It is imperative for companies to implement comprehensive policies that mitigate conflicts of interest and ensure effective governance. Strong governance practices are essential to ensure that ESG strategies are authentically executed and that the risk of greenwashing is minimized. Companies should establish robust internal oversight mechanisms to enhance accountability and foster genuine commitment to sustainability.

6. CONCLUSIONS

The study's findings indicate that greenwashing practices have a substantial adverse impact on a company's financial performance, particularly as measured by ROA. This reinforces the notion that misleading environmental claims can erode stakeholder trust, leading to reputational damage and declining profitability over time. Companies that engage in greenwashing may experience short-term gains, but the long-term consequences can be severe, including regulatory scrutiny, consumer backlash, and investor skepticism. As sustainability and transparency become more critical in corporate governance, firms must adopt genuine environmental strategies rather than deceptive marketing tactics to maintain long-term viability.

In contrast, multiple directorships, which theoretically provide firms with access to broader expertise and strategic oversight, were found to have a positive but statistically insignificant effect on firm performance. While directors holding multiple positions may bring valuable industry insights and networking opportunities, their dispersed responsibilities could limit their effectiveness in enhancing firm governance and performance. This suggests that while multiple directorships can contribute to corporate decision-making, their actual influence on financial outcomes is not always significant, potentially due to overcommitment or conflicting priorities among board members.

Furthermore, the interaction between greenwashing and multiple directorships, as examined through a moderating effect, was found to be negative but statistically insignificant. This implies that the presence of multiple directorships does not meaningfully mitigate or amplify the adverse impact of greenwashing on firm performance. Companies with board members holding multiple positions may not necessarily adopt stronger governance practices to counter greenwashing risks. These findings highlight the need for stricter board governance regulations and enhanced corporate accountability to ensure that environmental claims align with actual sustainable business practices, thereby fostering long-term corporate integrity and financial stability.

7. DECLARATIONS

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7.2. Author Contributions

Conceptualization: AF; Methodology: CA; Software: AF; Validation: AF and CA; Formal Analysis: AF and CA; Investigation: AF; Resources: CA; Data Curation: AF; Writing Original Draft Preparation: AF and CA; Writing Review and Editing: AF and CA; Visualization: AF; All authors, AF and CA have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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