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# Do Sustainable Human Resource Practices Drive Sustainable Performance? Evidence from Indonesian Cement Companies

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## Abstract:

This study aims to examine the effect of sustainable human resource practices, namely occupational health and safety (OHS), employee training (TR), and industrial relations (IR), on sustainability performance in Indonesian cement companies.

This study employs a quantitative approach using panel data from five cement companies listed on the Indonesia Stock Exchange during 2021–2024. The variables are measured based on Global Reporting Initiative (GRI) indicators using content analysis and analyzed using panel regression.

The results show that occupational health and safety and industrial relations have a positive and significant effect on sustainability performance, while employee training has a positive but not significant effect.

The study is limited by the small sample size (five companies) and the short observation period (2021–2024), which may not fully capture long-term effects.

The findings highlight the importance of strengthening workplace safety and labor relations as key drivers of sustainability performance.

This study contributes by emphasizing the role of internal human resource practices in sustainability performance using GRI-based measurement in a sector-specific context.

**Keywords:** *sustainability performance; occupational health and safety; employee training; industrial relations; ESG; cement industry.*

## INTRODUCTION

In recent years, sustainability has become a central issue in corporate strategy, particularly in industries with high environmental impact such as the cement sector. Companies are increasingly expected not only to generate financial returns but also to demonstrate accountability in environmental and social aspects. Sustainability performance, therefore, reflects how well a firm integrates environmental, social, and governance (ESG) principles into its operations. Previous studies indicate that firms with strong sustainability practices tend to gain legitimacy and long-term competitive advantage (Kosasih, 2024; Wiyono et al., 2025). However, most discussions still emphasize environmental and governance dimensions, while the role of human resource practices in supporting sustainability remains less explored.

From the perspective of human resource management, sustainability is closely related to how organizations manage their workforce through practices such as occupational health and safety, employee training, and industrial relations. These practices are not merely operational activities, but strategic elements that contribute to organizational sustainability. According to recent studies, sustainable human resource practices can enhance employee engagement, reduce workplace risk, and improve organizational resilience (Guares, 2025; Ishaq et al., 2025). In addition, effective industrial relations and continuous employee development are considered critical in achieving sustainable organizational outcomes. Despite this, empirical evidence linking these HR practices directly to sustainability performance is still limited, particularly in emerging markets.

Several prior studies have attempted to examine the relationship between ESG factors and firm performance. However, many of them aggregate social aspects into a broad index without specifically analyzing internal human resource dimensions. For instance, research by Wang et al (2022) and Nakra & Kashyap (2024) tends to treat the social dimension as a single construct, thus overlooking the specific contribution of human capital practices such as training and workplace safety. This creates a research gap, as the micro-level mechanisms through which HR practices influence sustainability performance are not clearly understood. Moreover, studies focusing on the cement industry are still scarce, even though this sector has significant environmental and social impacts.

Another limitation in previous research is the dominance of data from developed countries, which may not fully represent the conditions in emerging economies such as Indonesia. Institutional differences, labor regulations, and corporate governance structures may influence how sustainability practices are implemented. In the Indonesian context, especially within the cement industry, companies such as Semen Indonesia Group (SIG), Indocement (INTP), and Semen Baturaja (SMBR) have started to disclose sustainability-related information more consistently since recent years. However, empirical studies examining how specific HR-related disclosures contribute to sustainability performance in this sector are still very limited.

Based on these gaps, this study offers a different approach by focusing specifically on sustainable human resource practices, namely occupational health and safety, employee training, and industrial relations, as key determinants of sustainability performance. Unlike previous studies that use aggregated ESG scores, this research disaggregates the social dimension into more specific and measurable HR components. Therefore, the novelty of this study lies in its emphasis on the role of

internal human resource practices within the sustainability framework, particularly in the context of the Indonesian cement industry using recent panel data from 2021–2024.

Accordingly, the research problems can be formulated as follows:

- 1) Does occupational health and safety disclosure affect sustainability performance?
- 2) Does employee training disclosure influence sustainability performance?
- 3) Do industrial relations practices contribute to sustainability performance?
- 4) Do these HR practices together affect sustainability performance?

In line with these problems, the objectives of this study are to examine and analyze the effect of occupational health and safety, employee training, and industrial relations on sustainability performance. This study is expected to provide both theoretical and practical contributions by enriching the literature on sustainable human resource management and offering insights for companies in improving their sustainability strategies through effective HR practices.

## LITERATURE REVIEW

### **Grand Theory: Stakeholder Theory dan Human Capital Theory**

This study is primarily grounded in Stakeholder Theory and Human Capital Theory. Stakeholder theory suggests that firms are not only responsible to shareholders but also to a broader range of stakeholders, including employees, communities, and regulators. In the context of sustainability, companies are expected to address stakeholder expectations by implementing responsible environmental and social practices (Rahmaniati & Ekawati, 2024; Rassiah et al., 2024). Employee-related practices such as occupational health and safety, training, and industrial relations are critical components of the social dimension, as they directly affect internal stakeholders.

On the other hand, Human Capital Theory emphasizes that employees are valuable assets that contribute to organizational performance through their knowledge, skills, and capabilities. Investments in employee training and well-being are expected to enhance productivity and long-term firm performance (Firdaus et al., 2023). In the sustainability context, human capital plays a strategic role in supporting sustainable operations and improving overall sustainability performance. Therefore, integrating stakeholder and human capital perspectives provides a strong theoretical foundation for examining the role of HR practices in sustainability.

### **Sustainability Performance**

Sustainability performance reflects a company's ability to integrate environmental, social, and governance (ESG) aspects into its business operations. It is commonly measured through sustainability disclosure or ESG indices derived from corporate reports. Recent studies suggest that sustainability performance is not only influenced by external pressures but also by internal organizational practices, particularly those related to human resources (Awwad Al-Shammari et al., 2022; Macke & Genari, 2019).

In many cases, companies tend to focus more on environmental disclosures, while the social dimension, especially internal labor practices and receives less attention. This imbalance indicates that sustainability performance cannot be fully understood without considering how firms manage their

human capital. Therefore, examining HR-related factors as determinants of sustainability performance becomes increasingly relevant.

### **Occupational Health and Safety and Sustainability Performance**

Occupational health and safety (OHS) is a fundamental aspect of sustainable human resource management. It reflects the company's commitment to ensuring a safe and healthy working environment for its employees. A strong OHS system not only reduces workplace accidents but also enhances employee trust and organizational stability.

Recent studies indicate that firms with better health and safety practices tend to demonstrate higher sustainability performance, as these practices align with social responsibility and stakeholder expectations (Awan, 2019; Mohd Rizaimy Shaharudin et al., 2022). Moreover, effective OHS management can improve operational efficiency and reduce long-term costs associated with workplace incidents. Thus, OHS is considered a critical driver of sustainability outcomes.

### **Employee Training and Sustainability Performance**

Employee training is a key component of human capital development. It enables employees to acquire new skills and adapt to changing organizational and environmental demands. In the context of sustainability, training programs often include awareness of environmental practices, safety procedures, and ethical standards.

Empirical evidence suggests that companies investing in employee training are more likely to achieve better sustainability performance, as trained employees are more capable of implementing sustainable practices (Yafi et al., 2021). Training also enhances innovation and organizational learning, which are essential for long-term sustainability. However, some studies argue that the impact of training may vary depending on the quality and relevance of the training programs.

### **Industrial Relations and Sustainability Performance**

Industrial relations refer to the relationship between employers and employees, including communication, negotiation, and conflict resolution mechanisms. Strong industrial relations contribute to organizational stability and employee satisfaction, which are essential for sustainable business operations.

Recent research highlights that effective industrial relations can enhance sustainability performance by fostering a collaborative work environment and reducing labor disputes (Ritter et al., 2024). In contrast, poor industrial relations may lead to conflicts that disrupt operations and negatively affect sustainability outcomes. Therefore, maintaining harmonious industrial relations is crucial for achieving sustainable performance.

### **Conceptual Framework**



**Figure 1. Conceptual Framework**

Source: Developed by the authors (2026)

This study proposes a conceptual framework that examines the effect of sustainable human resource practices on sustainability performance. Occupational health and safety, employee training, and industrial relations are treated as independent variables representing key dimensions of sustainable HR practices. These variables are expected to directly influence sustainability performance, which reflects the company’s overall commitment to ESG principles.

The framework assumes that organizations with better HR practices are more capable of achieving higher sustainability performance. This is because effective management of human resources enhances employee engagement, reduces operational risks, and supports the implementation of sustainable strategies. Therefore, sustainable HR practices are positioned as strategic drivers of sustainability performance.

### Hypotheses Development

Based on the literature and theoretical framework, the hypotheses are formulated as follows:

**H1:** Occupational health and safety has a positive effect on sustainability performance.

**H2:** Employee training has a positive effect on sustainability performance.

**H3:** Industrial relations have a positive effect on sustainability performance.

**H4:** Occupational health and safety, employee training, and industrial relations simultaneously have a significant effect on sustainability performance.

## METHOD

### Research Design

This study employs a quantitative research approach using secondary data obtained from corporate reports. The objective is to examine the effect of sustainable human resource practices on sustainability performance. The research design is explanatory in nature, as it aims to test causal relationships between independent and dependent variables (Malik et al., 2021; Yong et al., 2020; Zahid et al., 2021).

The observation period in this study is limited to 2021–2024. This period is deliberately selected to ensure data consistency and comparability across all sample firms. Although some

companies, such as PT Solusi Bangun Indonesia Tbk (SMCB), have disclosed sustainability information since earlier years, other firms in the cement industry only began publishing sustainability reports more consistently starting from 2020 or 2021.

Therefore, using a longer observation period would result in an unbalanced dataset and reduce the reliability of the analysis. By restricting the study period to 2021–2024, this research ensures that all selected companies have comparable and available sustainability disclosures, allowing for a more consistent panel data analysis.

This study is considered an exploratory study due to the limited number of observations. However, it provides initial empirical evidence on the role of sustainable human resource practices in the cement industry.

### **Population and Sample**

The population of this study consists of cement companies listed on the Indonesia Stock Exchange (IDX). The sample is selected using purposive sampling based on the following criteria: (1) companies that are consistently listed during the observation period, (2) companies that publish annual reports and/or sustainability reports from 2021 to 2024, and (3) companies that disclose information related to sustainability and human resource practices.

Based on these criteria, five companies are selected as the sample, namely PT Solusi Bangun Indonesia Tbk (SMCB), PT Semen Indonesia (Persero) Tbk (SMGR), PT Semen Baturaja (Persero) Tbk (SMBR), PT Indocement Tunggal Prakarsa Tbk (INTP), and PT Cemindo Gemilang Tbk (CMNT). These companies represent the cement industry in Indonesia and have relatively consistent sustainability disclosures during the observation period.

The study uses a balanced panel dataset consisting of five companies over the period 2021–2024. The selection of this period is based on the availability and consistency of sustainability reporting across all sample firms. Although the number of observations is relatively limited, the dataset adequately represents the population of cement companies listed on the Indonesia Stock Exchange.

### **Data Type and Source**

This study uses secondary data collected from publicly available sources. The main data are obtained from annual reports and sustainability reports of the sample companies. Additional supporting data may be obtained from the Indonesia Stock Exchange (IDX) and company official websites. The data are collected using documentation techniques and analyzed through content analysis to construct the variables used in the study.

### **Operational Definition of Variables**

#### **Sustainability Performance (Y)**

Sustainability performance is measured using a sustainability disclosure index constructed from a set of indicators covering environmental, social, and governance aspects. Each indicator is scored using a dichotomous approach, where a value of 1 is assigned if the item is disclosed, and 0 otherwise. The index is calculated as follows:

$$SP = \sum X_i$$

N

where:

SP = Sustainability Performance

$X_i$  = disclosure score (1 or 0)

N = total number of indicators

### **Occupational Health and Safety (X1)**

Occupational health and safety (OHS) refers to company policies and practices related to maintaining a safe and healthy working environment. This variable is measured using a disclosure index based on relevant indicators reported in sustainability or annual reports.

$$OHS = \frac{\sum X_i}{N}$$

### **Employee Training (X2)**

Employee training represents the company's efforts in developing employee skills and competencies. This variable is measured using disclosure indicators related to training programs, employee development, and capacity building.

$$TR = \frac{\sum X_i}{N}$$

### **Industrial Relations (X3)**

Industrial relations refer to the relationship between management and employees, including communication, labor unions, and dispute resolution mechanisms. This variable is measured using disclosure indicators related to labor relations practices.

$$IR = \frac{\sum X_i}{N}$$

### **Data Analysis Technique**

The data analysis is conducted using panel data regression to examine the relationship between independent and dependent variables. The general model of this study is formulated as follows:

$$SP_{it} = \alpha + \beta_1 OHS_{it} + \beta_2 TR_{it} + \beta_3 IR_{it} + \epsilon_{it}$$

where:

SP = Sustainability Performance

OHS = Occupational Health and Safety

TR = Employee Training

IR = Industrial Relations

$\alpha$  = constant

$\beta$  = regression coefficients

$\epsilon$  = error term

### **Classical Assumption Tests**

To ensure the validity of the regression model, several classical assumption tests are performed, including: normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

### **Hypothesis Testing**

Hypothesis testing is conducted using: t-test to examine the partial effect of each independent variable, F-test to examine the simultaneous effect, Coefficient of determination ( $R^2$ ) to measure the explanatory power of the model.

The significance level used in this study is 5%.

## **RESULTS AND DISCUSSION**

### **Instrument Testing**

The variables in this study are constructed using secondary data derived from sustainability reports based on the Global Reporting Initiative (GRI) standards. Therefore, validity and reliability tests commonly used in primary data research, such as questionnaire-based studies, are not applicable. Instead, this study ensures content validity by adopting internationally recognized GRI indicators. Reliability is maintained through a consistent content analysis approach using standardized scoring criteria applied across all observations.

### **Validity Test**

The validity test aims to determine whether the variables used in this study are able to measure the intended constructs. In this research, the variables are constructed based on the Global Reporting Initiative (GRI) indicators using content analysis with a scoring approach.

Since the indicators are derived from established international standards, namely GRI, the measurement of variables in this study is considered to have strong content validity. Each variable, including occupational health and safety, employee training, and industrial relations, is aligned with specific GRI standards (GRI 403, GRI 404, and GRI 402, respectively).

Therefore, the indicators used in this study are deemed valid for measuring sustainable human resource practices.

### **Reliability Test**

Reliability refers to the consistency of measurement across observations. In this study, reliability is ensured through a consistent scoring procedure using content analysis based on predefined criteria (0–3 scale).

The same coding rules are applied across all companies and years, ensuring consistency in data measurement. Furthermore, the use of standardized GRI indicators enhances the reliability of the data. Thus, the measurement in this study can be considered reliable.

### **Classical Assumption Tests**

Before conducting regression analysis, several classical assumption tests are performed to ensure that the model meets the basic requirements of linear regression.

#### **a. Normality Test**

**Table 1. Normality Test Result**

Jarque-Bera	Probability
0.378655	0.827515

Source: Eviews 14 output processed (2026)

The normality test is conducted to examine whether the residuals are normally distributed. The results indicate that the residuals are approximately normally distributed, as the probability value of the Jarque-Bera test is 0.378655 greater than 0.05.

This suggests that the normality assumption is fulfilled.

**b. Multicollinearity Test**

**Table 2. Multicollinearity Test**

Variable	OHS	Training	Industrial
OHS	1	0.327	0.470
Training	0.327	1	0.784
Industrial	0.470	0.784	1

Source: Eviews 14 output processed (2026)

The multicollinearity test was conducted using a correlation matrix. The results show that all correlation values among independent variables are below the threshold of 0.80. The highest correlation value is 0.784 between employee training and industrial relations, which is still within the acceptable limit. Therefore, it can be concluded that there is no multicollinearity problem in the model. Although the correlation between employee training and industrial relations is relatively high, it does not exceed the critical threshold and thus does not pose a serious multicollinearity issue

**c. Heteroscedasticity Test**

**Table 3. Likelihood Ratio**

	Value	Df	Probability
Likelihood Ratio	3.983016	5	0.5519

Source: Eviews 14 output processed (2026)

The heteroscedasticity test was conducted using the Likelihood Ratio (LR) test. The result shows a probability value of 0.5519, which is greater than 0.05. This indicates that the residuals are homoskedastic, meaning that the variance of the residuals is constant.

Therefore, the model is free from heteroscedasticity.

**d. Autocorrelation Test**

The Durbin-Watson statistic is 1.2409, which indicates a potential presence of positive autocorrelation. However, considering the relatively small panel dataset used in this study, the Durbin-Watson statistic may not provide a fully reliable indication of autocorrelation. Therefore, the model is still considered acceptable for further analysis.

**Data Description**

This study employs panel data consisting of five cement companies listed on the Indonesia Stock Exchange, namely SMCB, CMNT, SMGR, INTP, and SMBR over the period 2021–2024. Therefore, the total number of observations used in this study is 20 firm-year observations. The dependent variable in this study is sustainability performance, while the independent variables include occupational health and safety (OHS), employee training, and industrial relations. In general, sustainability performance shows an increasing trend across all companies during the observation period. Firms such as SMGR and INTP exhibit relatively higher sustainability performance compared to others, while CMNT and SMBR show moderate levels with gradual improvement over time. This indicates that sustainability practices in the cement industry are increasingly being integrated into corporate operations.

**Descriptive Statistics**

**a. Model Specification**

This study employs a panel least squares approach to examine the relationship between sustainable human resource practices and sustainability performance. The model is selected based on the characteristics of the data and research objectives.

**b. Panel Regression Results**

**Table 4. Regression Result**

Variable	Coefficient	t-Statistic	Prob
C	0.172692	0.610228	0.5503
OHS	0.369231	3.824800	0.0015
Training	0.168654	1.071945	0.2996
Industrial Relations	0.345385	2.612842	0.0188

Source: Eviews 14 output processed (2026)

The regression model used in this study is formulated as follows:

$$SP_{it} = \alpha + \beta_1 OHS_{it} + \beta_2 TR_{it} + \beta_3 IR_{it} + \epsilon_{it}$$

$$SP_{it} = 0.172692 + \beta_1 0.369231 + \beta_2 0.1686654 + \beta_3 0.345385 + \epsilon_{it}$$

The constant value of 0.172692 indicates the baseline level of sustainability performance when all independent variables are assumed to be zero.

The coefficient of occupational health and safety (OHS) is 0.369231, indicating that an increase in OHS practices is associated with an increase in sustainability performance, holding other variables constant.

Similarly, employee training has a positive coefficient of 0.168654, suggesting that improvements in training are associated with higher sustainability performance, although the magnitude is relatively smaller.

Industrial relations also show a positive coefficient of 0.345385, indicating that better relationships between management and employees contribute to improved sustainability performance. Overall, all independent variables exhibit positive relationships with sustainability performance, suggesting that sustainable human resource practices play an important role in enhancing corporate sustainability.

**c. T-Test (Partial Test)**

The t-test is used to examine the partial effect of each independent variable on sustainability performance.

- 1) Occupational Health and Safety (OHS) has a t-statistic of 3.824800 with a probability value of 0.0015, which is less than 0.05. This indicates that OHS has a positive and significant effect on sustainability performance. Therefore, the hypothesis related to OHS is accepted.
- 2) Employee Training has a t-statistic of 1.071945 with a probability value of 0.2996, which is greater than 0.05. This indicates that employee training has a positive but not significant effect on sustainability performance. Thus, the hypothesis related to training is not supported.
- 3) Industrial Relations has a t-statistic of 2.612842 with a probability value of 0.0188, which is less than 0.05. This shows that industrial relations have a positive and significant effect on sustainability performance. Therefore, the hypothesis related to industrial relations is accepted.

**Table 5 . F-Test Result**

F-Statistic	Prob(F-statistic)
26.05372	0.000002

Source: Eviews 14 output processed (2026)

The F-test result shows that the F-statistic value is 26.05372 with a probability of 0.000002, which is less than 0.05. This indicates that occupational health and safety, employee training, and industrial relations simultaneously have a significant effect on sustainability performance.

**d. Coefficient of Determination (R<sup>2</sup>)**

The coefficient of determination (R<sup>2</sup>) is used to measure how well the independent variables explain the dependent variable.

**Tabel 6. R-Squared Result**

R <sup>2</sup>	Adjusted R <sup>2</sup>
0.83	0.80

Source: Eviews 14 output processed (2026)

The R-squared value of 0.83 indicates that 83% of the variation in sustainability performance can be explained by occupational health and safety, employee training, and industrial relations. The remaining 17% is influenced by other variables not included in this study.

However, there is still a portion of variation that is influenced by other variables not included in this study, such as firm size, financial performance, and environmental factors.

## **Discussion**

### **The Effect of Occupational Health and Safety on Sustainability Performance**

The results indicate that occupational health and safety (OHS) has a positive and significant effect on sustainability performance. This finding suggests that companies with stronger safety systems tend to achieve higher sustainability outcomes.

In high-risk industries such as cement, effective OHS practices play a critical role in reducing workplace accidents, improving employee well-being, and ensuring operational continuity. This contributes not only to internal efficiency but also enhances the company's social responsibility performance.

The findings of this study are consistent with prior research indicating that occupational health and safety positively influence sustainable organizational outcomes. A safe and healthy working environment has been shown to enhance productivity and long-term organizational performance (Ateeq et al., 2024). Furthermore, other studies reveal that effective safety management contributes to corporate sustainability by increasing employee commitment and reducing workplace risks (Tan et al., 2023).

However, this study extends previous findings by demonstrating that OHS not only affects operational efficiency but also directly contributes to sustainability performance in a more comprehensive manner.

From a theoretical perspective, this finding supports stakeholder theory, which emphasizes the importance of addressing employee welfare as a key stakeholder group. Companies that prioritize workplace safety are more likely to gain trust and legitimacy, ultimately improving their sustainability performance.

### **The Effect of Employee Training on Sustainability Performance**

The results show that employee training has a positive but not significant effect on sustainability performance. This indicates that although training contributes positively, its impact is not strong enough to be statistically significant in this study.

The results are in line with previous studies suggesting that training plays an important role in improving sustainability performance by enhancing employees' environmental knowledge and awareness (Wulandari & Nawangsari, 2021). However, contrasting findings also indicate that green training does not always have a significant impact on sustainability performance when it is not effectively implemented or aligned with organizational needs (Ul Haque & Irfan Ali, 2024).

Therefore, this study contributes by emphasizing that the effectiveness of training depends heavily on its quality, relevance, and alignment with organizational strategies.

### **The Effect of Industrial Relations on Sustainability Performance**

The results reveal that industrial relations have a positive and significant effect on sustainability performance. This indicates that harmonious relationships between management and employees contribute to better sustainability outcomes.

The findings of this study are supported by previous research showing that positive industrial relations and employee engagement significantly influence sustainability performance through increased commitment and pro-organizational behavior (Ul Haque & Irfan Ali, 2024). In addition, other studies highlight that strong employee relations improve motivation and contribute to achieving organizational sustainability goals (Ateeq et al., 2024).

This finding confirms that industrial relations are not merely a social aspect but also a strategic factor in enhancing sustainability performance.

### **The Effect of Occupational Health and Safety, Employee Training, and Industrial Relations on Sustainability Performance**

The results of this study indicate that occupational health and safety, training, and industrial relations simultaneously have a significant effect on sustainability performance. This finding confirms that integrated human resource management practices play a crucial role in driving organizational sustainability. It aligns with the concept of Green Human Resource Management (GHRM), which emphasizes that a combination of HR practices, such as training, employee relations, and workplace safety, can create sustainability-based competitive advantages.

This finding is supported by previous studies showing that GHRM practices collectively influence business sustainability, where the integration of recruitment, training, and compensation systems contributes to improved sustainability performance (Wulandari & Nawangsari, 2021). In addition, other research highlights that integrated HR practices significantly enhance organizational sustainable performance through strategic alignment with environmental objectives (Ul Haque & Irfan Ali, 2024).

Thus, this study reinforces the view that sustainability performance cannot be achieved through isolated HR practices, but rather through a holistic and integrated approach to human resource management.

### **Research Implications**

- a. This study highlights that not all sustainable human resource practices contribute equally to sustainability performance. Occupational health and safety and industrial relations are found to have a more immediate and significant impact compared to employee training.
- b. From a theoretical perspective, the findings strengthen stakeholder theory and human capital theory, particularly in explaining the role of employee welfare and workplace relationships in achieving sustainability performance.
- c. From a practical perspective, companies should prioritize occupational health and safety systems and industrial relations management as key drivers of sustainability. These aspects provide more direct and measurable contributions to sustainability performance.
- d. Although employee training shows a positive direction, its impact is not statistically significant, suggesting that training programs may require a longer time horizon or more targeted design to effectively influence sustainability outcomes.

- e. For policymakers, the results imply that ESG frameworks should place greater emphasis on internal social dimensions, particularly employee safety and labor relations, rather than focusing solely on environmental disclosures.

### **Research Limitations**

- a. This study is limited by the relatively small sample size, consisting of five companies in the cement industry over the period 2021–2024. However, this reflects the actual condition of the industry, where sustainability disclosure is still limited.
- b. The study focuses on a single industry, which may limit the generalizability of the findings. Future research is encouraged to include multiple industries to provide broader insights.
- c. The observation period is relatively short, which may not fully capture the long-term effects of certain variables, particularly employee training, whose impact may emerge over a longer time horizon.
- d. The measurement of variables is based on content analysis using GRI indicators, which may involve subjectivity in scoring despite the use of consistent criteria.
- e. This study only examines selected dimensions of sustainable human resource practices. Other important factors, such as leadership, organizational culture, and financial performance, are not included in the model.

### **CONCLUSION**

This study examines the effect of sustainable human resource practices, namely occupational health and safety, employee training, and industrial relations, on sustainability performance in Indonesian cement companies. The results reveal that occupational health and safety and industrial relations have a positive and significant effect on sustainability performance, indicating their crucial role in supporting sustainable organizational outcomes. In contrast, employee training shows a positive but not significant effect, suggesting that its impact may not be immediate or requires a longer time horizon to be fully realized. Furthermore, the simultaneous test confirms that these variables collectively influence sustainability performance, emphasizing the importance of integrated human resource practices in achieving organizational sustainability.

Based on these findings, companies are encouraged to prioritize occupational health and safety systems and strengthen industrial relations as key drivers of sustainability performance. In addition, organizations should enhance the effectiveness of employee training programs by aligning them with sustainability objectives and ensuring their long-term impact. Policymakers are also expected to promote stronger regulations and guidelines related to the social dimension of ESG, particularly in workplace safety and labor relations. Future research is recommended to extend the observation period, include additional variables, and expand the scope across different industries to provide more comprehensive insights.

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