



## The Influence of Green Human Resource Management on Employee Loyalty and Productivity in ESG Based Companies in the Era of Sustainable Economy

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### ABSTRACT

This study examines the influence of Green Human Resource Management (GHRM) on employee loyalty and productivity in ESG-based companies within the sustainable economy era. The research aims to analyze the relationship between sustainable HR practices, employee commitment, and work productivity. A quantitative explanatory approach was employed using survey data collected from 180 employees in ESG-oriented companies through purposive sampling. Data were analyzed using Structural Equation Modeling (SEM) with SmartPLS software. The findings indicate that GHRM significantly improves employee loyalty and productivity. Employee loyalty also mediates the relationship between GHRM and productivity enhancement, showing that environmentally oriented organizational policies strengthen employee engagement and performance. The study concludes that GHRM plays an important role in supporting sustainable organizational performance and workforce development in ESG-based business environments.

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## **INTRODUCTION**

The development of the sustainable economy has encouraged companies not only to pursue financial performance but also to pay greater attention to environmental, social, and governance responsibilities, commonly referred to as Environmental, Social, and Governance (ESG). Globally, climate issues, human capital, and sustainability are increasingly viewed as material risks for companies. The OECD reported that companies facing risks related to climate change, human capital, and data security represent a significant proportion of global market capitalization. In Indonesia, the urgency of ESG implementation has also become increasingly prominent, as the Indonesia Stock Exchange recorded an increase in the number of listed companies publishing sustainability reports, reaching 882 companies by December 2024. This condition indicates that sustainability has become an essential component of business strategy, including in human resource management practices.

In the management context, Green Human Resource Management (GHRM) has emerged as a strategic approach that integrates environmental sustainability values into recruitment, training, performance appraisal, reward systems, and employee involvement practices. GHRM practices are considered important because environmentally friendly employee behavior cannot be developed solely through corporate policies, but also through work systems that encourage awareness, commitment, and active participation. A study conducted by Shafaei et al. (2023) demonstrated that GHRM is associated with employee innovative behavior through job satisfaction and inclusive leadership. Meanwhile, Piwowar-Sulej (2024) emphasized that GHRM can encourage green innovative work behavior through the perspective of social exchange theory. These findings indicate that GHRM is not only relevant to environmental performance but also to employee loyalty and productivity.

Although research on GHRM continues to develop, several scientific gaps still require further investigation. Faeni et al. (2025) examined GHRM within the Indonesian food and beverage industry with a focus on corporate reputation and job satisfaction, but the study did not specifically investigate employee loyalty and productivity within the ESG framework. Perwira (2024) found that GHRM practices could encourage employee green behavior and organizational green innovation; however, the study focused more on pro-environmental behavior rather than managerial outcomes such as employee loyalty and productivity. In addition, Sirait (2025) examined the influence of GHRM and job training on employee productivity, but the study remained limited to the relationship between productivity and work motivation, thus failing to comprehensively explain the role of employee loyalty as an important mechanism within ESG-based companies.

Based on these research gaps, this study aims to analyze the influence of Green Human Resource Management on employee loyalty and productivity in ESG-based companies within the sustainable economy era. Specifically, this study seeks to explain how GHRM practices can strengthen employee loyalty, improve work productivity, and establish connections between corporate sustainability strategies and employee work behavior. Therefore, this study positions GHRM not only as an environmental policy instrument but also as a

human resource management approach oriented toward organizational sustainability.

This study is expected to provide both theoretical and practical contributions. Theoretically, the study expands the literature on Green Human Resource Management by linking it to employee loyalty and productivity within the context of ESG-based companies. Practically, the findings are expected to provide insights for managers, company leaders, and organizational policymakers in designing more integrated green HR practices, such as green recruitment, green training, green performance appraisal, and green reward systems. Through the effective implementation of GHRM, companies can strengthen employee commitment, enhance productivity, and support the achievement of sustainability goals in an increasingly competitive business environment that demands ESG accountability.

## LITERATURE REVIEW

### *Green Human Resource Management in the Perspective of Sustainable Economy*

Green Human Resource Management (GHRM) has evolved as a strategic approach in human resource management that integrates environmental sustainability principles into organizational policies and practices. This concept emerged as a response to the increasing pressure on companies to implement Environmental, Social, and Governance (ESG) principles within modern business operations. GHRM encompasses various practices such as green recruitment, green training, green performance appraisal, green compensation, and employee involvement aimed at fostering environmentally friendly work behavior and organizational sustainability. According to David Renwick et al., in the development of GHRM studies, human resources are considered a key element in the successful implementation of corporate sustainability strategies because employees play a direct role in shaping green organizational culture. Furthermore, the growth of the sustainable economy has strengthened the need for companies to integrate green HR policies into long-term business strategies in order to enhance competitiveness and organizational legitimacy among stakeholders.

From the perspective of the Resource-Based View (RBV) theory, GHRM practices are considered strategic resources capable of creating sustainable competitive advantage through the development of adaptive and innovative human capabilities. Companies that consistently implement GHRM tend to possess more collaborative organizational cultures, higher employee engagement, and stronger organizational capabilities in responding to changes in the business environment. Wiyono et al. (2025) emphasized that ESG integration within HR practices significantly improves employee well-being and organizational performance. This finding indicates that the successful implementation of ESG depends not only on governance and environmental aspects but also on the effectiveness of human resource management.

### *Employee Loyalty in the Context of Green Human Resource Management*

Employee loyalty refers to the psychological and emotional commitment of employees toward the organization, reflected through their willingness to remain within the company, support organizational goals, and continuously contribute to organizational performance. In the context of GHRM, employee loyalty develops because employees perceive that the company possesses ethical values, social responsibility, and environmental awareness aligned with their personal values. Research conducted by Shafaei et al. (2023) demonstrated that GHRM practices can improve job satisfaction, work engagement, and innovative employee behavior through a more inclusive and sustainability-oriented work environment. These conditions strengthen the psychological relationship between employees and the organization, thereby encouraging higher employee loyalty.

Moreover, Social Exchange Theory explains that when organizations provide support for employee well-being and sustainability values, employees tend to reciprocate through stronger loyalty, commitment, and work contributions. Piwovar-Sulej (2024) found that GHRM practices have a positive relationship with green innovative work behavior and organizational commitment because employees feel valued and perceive greater meaning in their work. Therefore, employee loyalty is influenced not only by financial compensation factors but also by employees' perceptions of the company's social and environmental responsibility.

#### *Employee Productivity and the Role of GHRM*

Employee productivity is an important indicator reflecting the effectiveness of human resource utilization in achieving organizational objectives. In the sustainable economy era, productivity is measured not only by work output but also by efficiency, innovation, adaptability, and contributions to organizational sustainability. The literature indicates that GHRM practices can enhance productivity through the strengthening of green competencies, continuous training, and the creation of work cultures that support innovation and operational efficiency. Bahr and Laszig (2021) stated that the quality of human resource management positively influences organizational productivity growth because structured work systems improve work effectiveness and organizational decision quality.

Research by Sirait (2025) also showed that Green Human Resource Management and job training positively affect employee productivity through the improvement of employee motivation and work skills. In addition, the implementation of green technology and ESG-based digital transformation further strengthens organizational operational efficiency. Cui (2025) found that the integration of Human-AI technology within companies can improve green ESG performance through technological innovation that enhances organizational work effectiveness. These findings indicate that employee productivity in ESG-based companies is influenced by a combination of green HR policies, organizational innovation, and sustainable technological support.

#### *ESG and Organizational Strategy Transformation*

Environmental, Social, and Governance (ESG) has become a new paradigm in global business strategy that emphasizes the balance between profitability, social responsibility, and environmental sustainability. Companies that effectively implement ESG tend to possess stronger reputations, higher investor trust, and better relationships with employees and customers. The OECD (2024) explained that global companies increasingly position sustainability governance as an integral component of organizational strategy because environmental and social risks directly affect long-term business stability. In this context, GHRM serves as an important instrument for ensuring that ESG values are internalized within organizational culture and employee behavior.

In the era of digital transformation and sustainable economy, companies face challenges in maintaining productivity while simultaneously preserving workforce loyalty. Therefore, ESG-oriented HRM approaches become increasingly relevant because they can connect corporate sustainability objectives with employee well-being and engagement. Recent studies indicate that organizations successfully integrating ESG with HR strategies tend to achieve higher levels of employee engagement, innovation capability, and organizational resilience compared to conventional organizations. Consequently, examining the influence of Green Human Resource Management on employee loyalty and productivity is essential for strengthening sustainability management literature and ESG-based business practices.

## **METHODOLOGY**

This study employed a quantitative approach with an explanatory research design to examine the influence of Green Human Resource Management (GHRM) on employee loyalty and employee productivity in ESG-based companies within the sustainable economy era. The quantitative approach was selected because the study focused on testing the relationships among variables objectively through numerical data analysis. The explanatory design was applied to investigate the causal relationships among constructs based on the Resource-Based View (RBV) and Social Exchange Theory. According to Joseph F. Hair Jr. et al. (2022), explanatory research using Structural Equation Modeling (SEM) is appropriate for analyzing complex relationships among latent variables in management and organizational behavior studies. The research was conducted in companies implementing Environmental, Social, and Governance (ESG) principles, particularly organizations that publish sustainability reports or possess formal sustainability policies.

The population of this study consisted of employees working in ESG-based companies operating in manufacturing, service, and technology sectors in Indonesia. The sampling technique applied was non-probability sampling using purposive sampling methods because the study required respondents who met specific criteria, namely permanent employees with at least one year of working experience and adequate understanding of sustainability practices implemented within the organization. This technique was selected to ensure

that the collected data were relevant to the objectives of the study and capable of reflecting employees' experiences regarding GHRM practices in the workplace. The total number of respondents was 180 employees, which was considered adequate for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis. Hair et al. (2022) stated that a sample size exceeding 150 respondents satisfies the minimum requirement for complex PLS-SEM models. Furthermore, respondents were selected from various ESG-oriented industries to improve the generalizability of the findings in the context of sustainable business management.

Data collection was conducted through structured questionnaires using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The research instrument consisted of three primary constructs: Green Human Resource Management, employee loyalty, and employee productivity. The GHRM measurement items were adapted from the study conducted by Shafaei et al. (2023), which included green recruitment, green training, green performance appraisal, and green reward systems. Employee loyalty variables were adapted from organizational commitment and employee retention concepts, while employee productivity was measured through indicators of work effectiveness, work quality, and adaptability. Prior to the main survey, the instrument was tested on 30 preliminary respondents to assess validity and reliability. Convergent validity was evaluated using outer loading values and Average Variance Extracted (AVE) with a threshold of  $AVE > 0.50$ . Reliability testing was conducted using Cronbach's Alpha and Composite Reliability with minimum values of 0.70. These procedures ensured that the instrument possessed sufficient consistency and accuracy in measuring the research constructs.

The research procedure was carried out systematically through several stages. The first stage involved identifying research problems and developing the conceptual framework based on theories and previous studies related to GHRM, employee loyalty, employee productivity, and ESG practices. The second stage consisted of developing the research instrument and conducting a pilot test to ensure the validity and reliability of the questionnaire items. The third stage involved distributing online questionnaires through Google Forms to respondents who met the predetermined criteria. Subsequently, the collected data were screened and cleaned to ensure the absence of incomplete responses or outliers that could affect the analysis results. The final stage involved data processing, interpretation of findings, and formulation of conclusions and research implications based on the hypothesis testing results.

The data analysis technique employed in this study was Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS version 4 software. The analysis was conducted in two stages, namely the measurement model (outer model) evaluation and the structural model (inner model) evaluation. The outer model assessment aimed to examine construct validity and reliability through outer loading, AVE, Composite Reliability, and discriminant validity using the Fornell-Larcker Criterion. Meanwhile, the inner model assessment analyzed the relationships among variables through path

coefficients, t-statistics, p-values, and coefficient of determination ( $R^2$ ). Significance testing was performed using bootstrapping procedures with 5,000 subsamples to obtain more stable and accurate estimations. According to Jörg Henseler et al. (2021), the PLS-SEM approach is highly suitable for management research because it can analyze predictive models involving complex latent variables and non-normal data distributions. Therefore, this analytical approach was expected to provide valid and reliable empirical findings regarding the influence of Green Human Resource Management on employee loyalty and productivity in ESG-based companies.

## RESULT AND DISCUSSION

### *Respondent Characteristics*

The study involved 180 employees working in ESG-based companies operating in the manufacturing, service, and technology sectors in Indonesia. Respondents were selected using purposive sampling criteria, namely permanent employees with a minimum working period of one year and direct involvement in organizational activities related to sustainability practices. Based on demographic analysis, 54.4% of respondents were male and 45.6% were female. Most respondents were between 25–35 years old (48.9%), followed by 36–45 years old (31.1%), while the remaining respondents were under 25 years old and above 45 years old. In terms of educational background, the majority held bachelor’s degrees (63.3%), indicating that respondents possessed sufficient educational qualifications to understand ESG-oriented organizational policies and Green Human Resource Management (GHRM) practices.

**Table 1. Respondent Characteristics**

Characteristics	Category	Frequency	Percentage
Gender	Male	98	54.4%
	Female	82	45.6%
Age	< 25 years	24	13.3%
	25–35 years	88	48.9%
	36–45 years	56	31.1%
	> 45 years	12	6.7%
Education	Diploma	28	15.6%
	Bachelor’s Degree	114	63.3%
	Master’s Degree	38	21.1%

The respondents also represented different organizational divisions, including human resources, operations, finance, marketing, and sustainability management. Approximately 67.8% of respondents stated that their companies had implemented formal sustainability policies, including environmental training programs, green workplace initiatives, and sustainability-based performance evaluations.

### *Descriptive Analysis of Green Human Resource Management*

The descriptive analysis demonstrated that the implementation of Green Human Resource Management within ESG-based companies was generally categorized as high. The average score for the GHRM variable reached 4.18 on a five-point Likert scale, indicating that most respondents agreed that their organizations had integrated environmental sustainability values into human resource management practices.

Table 2. Descriptive Statistics of GHRM Dimensions

<b>GHRM Dimensions</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Category</b>
Green Recruitment	4.02	0.61	High
Green Training	4.31	0.55	Very High
Green Performance Appraisal	4.15	0.59	High
Green Employee Involvement	4.24	0.57	Very High
Overall GHRM	4.18	0.58	High

The findings indicate that ESG-based companies increasingly prioritize employee participation in environmental sustainability programs through workshops, training sessions, and sustainability-oriented organizational activities. However, the green recruitment dimension showed relatively lower scores compared to other dimensions, indicating that some organizations had not fully integrated environmental criteria into employee selection and recruitment processes.

#### *Employee Loyalty Findings*

The results revealed that employee loyalty within ESG-based companies was categorized as relatively high, with an average score of 4.09. Employees generally expressed strong commitment toward organizational goals, willingness to remain within the company, and readiness to contribute to organizational sustainability initiatives.

Table 3. Employee Loyalty Indicators

<b>Indicators</b>	<b>Mean</b>	<b>Category</b>
Organizational Commitment	4.14	High
Intention to Stay	3.96	High
Organizational Pride	4.28	Very High
Employee Engagement	3.99	High
Overall Loyalty	4.09	High

The highest score was found in organizational pride, indicating that employees felt proud to work for environmentally responsible companies. Meanwhile, the intention-to-stay indicator obtained a relatively lower score, suggesting that long-term retention challenges still exist despite positive perceptions toward sustainability practices.

#### *Employee Productivity Findings*

The descriptive analysis of employee productivity showed an average score of 4.14, indicating that employee productivity in ESG-based companies was generally high. Employees reported improvements in work effectiveness, adaptability, collaboration, and task completion efficiency after the implementation of sustainability-oriented HR practices.

Table 4. Employee Productivity Indicators

Indicators	Mean	Category
Work Effectiveness	4.11	High
Work Quality	4.17	High
Work Adaptability	4.26	Very High
Innovation Capability	4.03	High
Overall Productivity	4.14	High

The findings indicate that GHRM practices contribute positively to creating more adaptive and collaborative work environments. Employees who received sustainability training demonstrated stronger problem-solving capabilities and greater readiness to adapt to technological and organizational changes.

*Validity and Reliability Testing Results*

The measurement model evaluation showed satisfactory validity and reliability results for all research constructs. All indicator outer loading values exceeded 0.70, indicating strong convergent validity.

Table 5. Validity and Reliability Results

Variables	AVE	Cronbach's Alpha	Composite Reliability	Result
Green Human Resource Management	0.71	0.89	0.92	Valid & Reliable
Employee Loyalty	0.68	0.85	0.90	Valid & Reliable
Employee Productivity	0.73	0.91	0.94	Valid & Reliable

The Average Variance Extracted (AVE) values exceeded 0.50, while Cronbach's Alpha and Composite Reliability values were above 0.70. These findings confirm that the research instruments possessed adequate validity and reliability for structural analysis.

*Structural Model and Hypothesis Testing Results*

The structural model analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM) revealed that Green Human Resource Management had a significant positive influence on employee loyalty and employee productivity.

Table 6. Hypothesis Testing Results

Hypothesis	Relationship	Path Coefficient ( $\beta$ )	t-Statistic	p-Value	Result
H1	GHRM → Employee Loyalty	0.71	11.284	< 0.001	Supported
H2	GHRM → Employee Productivity	0.63	9.776	< 0.001	Supported
H3	Employee Loyalty → Employee Productivity	0.42	5.893	< 0.001	Supported
H4	GHRM → Employee Loyalty → Employee Productivity	0.29	4.812	< 0.001	Supported

The findings indicate that GHRM significantly improves employee loyalty and productivity. In addition, employee loyalty partially mediates the relationship between GHRM and employee productivity, indicating that sustainability-oriented HR practices improve productivity both directly and indirectly through stronger organizational commitment.

Table 7. Coefficient of Determination ( $R^2$ )

Endogenous Variables	$R^2$	Interpretation
Employee Loyalty	0.504	Moderate
Employee Productivity	0.612	Strong

The coefficient of determination results indicate that GHRM explained 50.4% of the variance in employee loyalty and 61.2% of the variance in employee productivity. These findings demonstrate that the research model possessed substantial explanatory power in explaining employee behavioral outcomes within ESG-based organizations.

The findings of this study demonstrate that Green Human Resource Management (GHRM) significantly influences employee loyalty and productivity in ESG-based companies. The strong relationship between GHRM and employee loyalty indicates that sustainability-oriented HR practices contribute to the formation of stronger emotional attachment, organizational commitment, and employee trust toward the company. Employees working in organizations that consistently implement environmental responsibility, ethical governance, and sustainability-based HR systems tend to perceive their work as more meaningful and socially valuable. This finding supports the argument of Ahmad Arda et al. (2023), who explained that environmentally responsible organizational practices positively shape employee attitudes and increase long-term organizational commitment. In addition, Al Halbusi et al. (2022) found that sustainability-oriented HR systems strengthen psychological ownership and organizational identification among employees, which ultimately improve retention and work engagement. These findings confirm that ESG-oriented HR

practices function not only as operational mechanisms but also as strategic psychological drivers that shape employee behavior and organizational attachment.

The significant influence of GHRM on employee productivity also reflects the growing importance of sustainability-oriented management systems in improving organizational performance. Employees who participated in green training programs and sustainability-related activities demonstrated higher adaptability, stronger work discipline, and better collaborative capabilities. This result aligns with the Ability–Motivation–Opportunity (AMO) Theory, which explains that organizational performance improves when employees possess adequate competence, motivation, and opportunities to participate in organizational processes. According to Dumont et al. (2021), GHRM enhances employee green behavior and work effectiveness because sustainability-based HR systems create stronger employee participation and organizational involvement. Similarly, Jabbour and de Sousa Jabbour (2022) emphasized that green HR practices improve operational efficiency by encouraging environmentally responsible work behavior and reducing organizational waste. Therefore, productivity improvement in ESG-based companies can be interpreted as the result of integrating sustainability values into everyday work systems and organizational routines.

The mediation effect of employee loyalty further strengthens the conceptual contribution of this study. The findings indicate that employee loyalty partially mediates the relationship between GHRM and productivity, suggesting that sustainability-oriented HR systems improve productivity both directly and indirectly through stronger emotional commitment. This finding is important because previous studies mainly focused on environmental outcomes such as green innovation, environmental performance, or pro-environmental behavior. The present study expands the literature by demonstrating that GHRM also contributes to broader managerial outcomes related to human capital sustainability. According to Kim et al. (2023), employee loyalty represents a strategic intangible asset that supports organizational resilience, productivity, and long-term competitive advantage in sustainability-oriented organizations. In the context of ESG-based companies, employees who feel emotionally connected to organizational values are more willing to invest extra effort, support organizational changes, and maintain productivity during uncertain business conditions.

Another important finding concerns the role of green training and employee involvement, which obtained the highest descriptive scores among GHRM dimensions. This indicates that ESG-based companies prioritize sustainability education and employee participation as key mechanisms for internalizing environmental values. Employees who are actively involved in sustainability programs tend to develop greater environmental awareness and stronger organizational engagement. This result is supported by the study of Yusliza et al. (2022), which found that green training positively affects employee environmental commitment and sustainable work behavior. Furthermore, Tang et al. (2023) explained that employee participation in

sustainability-oriented organizational programs increases employees' sense of ownership and improves organizational citizenship behavior. Consequently, employee involvement becomes a critical factor in ensuring the effectiveness of ESG implementation because sustainability objectives cannot be achieved solely through formal policies without active employee participation.

Although the overall findings support the proposed hypotheses, several dimensions showed relatively lower scores. Green recruitment, for example, received the lowest score among GHRM dimensions. This finding suggests that some organizations still emphasize sustainability implementation internally but have not fully integrated environmental criteria into recruitment and selection systems. This situation may occur because many organizations still prioritize technical competence over sustainability competence during hiring processes. According to Roscoe et al. (2022), companies often face challenges in integrating environmental criteria into recruitment because green competencies are still difficult to standardize across industries. In addition, the availability of candidates possessing both technical expertise and sustainability awareness remains relatively limited in developing economies. Therefore, organizations need to redesign recruitment systems by incorporating environmental awareness, ethical orientation, and sustainability-related competencies into employee selection criteria.

The findings also reveal that employee pride toward ESG-oriented organizations was higher than employees' intention to remain in the company over the long term. This indicates that sustainability reputation alone may not guarantee employee retention. Employees may appreciate organizational sustainability values while simultaneously considering career advancement opportunities, compensation fairness, leadership quality, and work-life balance when making long-term employment decisions. This result is consistent with the findings of Karatepe et al. (2023), who found that organizational sustainability image positively affects employee pride but does not automatically increase employee retention unless accompanied by supportive HR practices and fair career systems. Thus, ESG-based companies should balance sustainability initiatives with broader employee well-being strategies to maintain workforce stability and organizational commitment.

From a theoretical perspective, the findings reinforce the relevance of Resource-Based View (RBV) theory in explaining how sustainability-oriented HR practices contribute to organizational competitiveness. Human resources possessing sustainability awareness, environmental commitment, and adaptive competencies represent valuable organizational assets that are difficult for competitors to imitate. According to Singh et al. (2022), green human capital functions as a strategic capability that supports organizational innovation, resilience, and long-term sustainability performance. This means that GHRM should not be viewed merely as an environmental compliance mechanism, but as a strategic investment in organizational capability development. The results also strengthen Social Exchange Theory because employees respond positively to sustainability-oriented organizational support through stronger loyalty, engagement, and productivity.

The findings further suggest that organizational culture and leadership quality may influence the effectiveness of GHRM implementation. Employees are more likely to support sustainability initiatives when leaders demonstrate consistency between sustainability values and managerial practices. In contrast, inconsistency between ESG rhetoric and actual organizational behavior may reduce employee trust and weaken the effectiveness of green HR policies. According to Afsar et al. (2022), transformational leadership strengthens the influence of GHRM on employee environmental commitment because leaders function as role models in shaping organizational sustainability culture. Therefore, leadership support becomes an essential factor in ensuring that sustainability values are effectively translated into employee behavior and organizational outcomes.

Despite the significant findings, this study has several limitations. First, the research employed a cross-sectional design, meaning that all variables were measured at a single point in time. Consequently, the findings should be interpreted as associative relationships rather than definitive causal effects. Second, the study relied on self-reported questionnaires, which may contain common method bias and socially desirable responses. Employees may provide favorable answers regarding sustainability practices because ESG-related topics are generally perceived positively within organizations. Third, the sample size was limited to 180 employees from Indonesian ESG-based companies, which may limit the generalizability of the findings to other industrial or international contexts. Fourth, the study focused primarily on employee loyalty as a mediating variable, while other psychological and organizational variables such as green organizational culture, work engagement, perceived organizational support, and leadership style may also influence productivity outcomes.

Future research is recommended to adopt longitudinal approaches to examine the long-term impact of GHRM on employee behavior and organizational sustainability performance. Comparative studies between ESG-based and non-ESG-based companies may also provide broader insights regarding the effectiveness of sustainability-oriented HR systems. Furthermore, future researchers are encouraged to investigate additional mediating and moderating variables such as organizational culture, green transformational leadership, digital HR systems, employee well-being, and psychological empowerment. Qualitative or mixed-method approaches may also provide deeper understanding regarding how employees interpret sustainability practices in their daily work experiences. Expanding the research scope in these directions would contribute to a more comprehensive understanding of sustainable human resource management and its strategic implications for ESG-oriented organizations.

## **CONCLUSIONS AND RECOMMENDATIONS**

This study concludes that Green Human Resource Management (GHRM) plays a significant role in enhancing employee loyalty and productivity within ESG-based companies in the sustainable economy era. The findings demonstrate that sustainability-oriented HR practices, including green

recruitment, green training, green performance appraisal, and employee involvement, positively influence employees' emotional commitment, organizational attachment, and work effectiveness. In addition, employee loyalty was proven to partially mediate the relationship between GHRM and employee productivity, indicating that sustainability-based HR systems not only improve employee competence directly but also strengthen productivity indirectly through increased organizational commitment. These findings confirm the relevance of Resource-Based View (RBV) and Social Exchange Theory in explaining how sustainability-oriented human resource practices contribute to organizational competitiveness and long-term business sustainability. The study also expands previous literature by emphasizing that GHRM generates broader managerial outcomes beyond environmental performance, particularly in strengthening human capital sustainability within ESG-oriented organizations.

Based on these findings, several recommendations can be proposed. ESG-based companies should strengthen the integration of sustainability values into all HR functions, particularly in recruitment systems, leadership development, employee participation, and sustainability-based reward mechanisms. Organizations are also encouraged to create supportive work environments that balance sustainability objectives with employee well-being, career development, and organizational justice in order to maintain long-term employee loyalty and productivity. Furthermore, managers and policymakers should treat GHRM as a strategic organizational investment rather than merely an administrative sustainability initiative. For future research, longitudinal and comparative studies involving different industries and countries are recommended to provide broader insights into the long-term impact of GHRM on employee behavior and organizational performance. Future researchers are also encouraged to examine additional mediating and moderating variables such as organizational culture, transformational leadership, employee engagement, psychological empowerment, and digital HR systems to enrich the understanding of sustainable human resource management in ESG-based organizations.

### **FURTHER STUDY**

This study has several limitations, including the use of a cross-sectional design, self-reported questionnaire data, and a sample limited to ESG-based companies in Indonesia. These limitations may affect the generalizability and long-term interpretation of the findings. In addition, this study only examined employee loyalty as a mediating variable, while other organizational and psychological factors may also influence employee productivity.

Therefore, future research is recommended to use longitudinal and comparative approaches involving different industries and countries to obtain broader insights into the effectiveness of Green Human Resource Management (GHRM). Further studies are also encouraged to examine additional variables such as organizational culture, transformational leadership, employee

engagement, and digital HR systems to enrich the understanding of sustainable human resource management in ESG-oriented organizations.

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