



The Impact of Green Human Resource Management on Employee Performance with Pro-Environment Behavior as a Mediating Variable

Andhini Kusumawardani^{1*}, Andre Dwijanto Witjaksono², Anang Kistyanto³

^{1,2,3} *Department of Management, Universitas Negeri Surabaya, Surabaya, Indonesia*

Abstract

The Green Human Resource Management (GHRM) practices at the Environmental Department of Surabaya City Government have been applied since several years ago. However, there is still no evidence that the application of GHRM at the Environmental Department can improve overall employee performance. This research aims to analyze the influence of GHRM on employee performance with the role of employee green behaviour as a mediation variable and transformational leadership as a moderation variable using the SEM-PLS method on a sample of 171 employees of DLH Kota Surabaya. SEM-PLS was used because of its ability to obtain relationship results between variables. The results showed that GHRM practices did not have a significant effect on employee performance, although they had a positive impact on employee green behaviour. The employee green behavior failed to mediate the relationship between GHRM and employee performance. Transformational leadership has proved effective as a moderator variable in the relationship of GHRM to employee performance. To maximize the effectiveness of GHRM, there needs to be strong leadership support as well as wider involvement of the entire employee in pro-environmental practices.

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Correspondence:

Andhini Kusumawardani
(andhini.23011@mhs.unesa.ac.id)

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1. INTRODUCTION

In the era of globalization, characterized by heightened environmental awareness, Green Human Resource Management (GHRM) has emerged as a crucial strategy for organizations aiming to achieve sustainability and optimal performance (Ahmad et al., 2022). GHRM encompasses a range of human resource practices designed to enhance environmentally friendly behaviors in the workplace and support the overall sustainability of the organization (Nisar et al., 2024). This study focuses on the impact of GHRM on employee performance (EP), with particular attention to the mediating role of pro-environmental behavior (PEB) and the moderating effect of transformational leadership (TL).

The selection of DLH Kota Surabaya as the research site is grounded in the agency's strategic role and commitment to implementing environmental sustainability programs within an urban setting that faces complex ecological challenges. Surabaya is one of Indonesia's largest cities, with a high level of industrial and residential activity, making



environmental management a critical concern. DLH Surabaya has pioneered several green initiatives and programs, such as waste segregation campaigns and urban greening efforts, which require strong organizational practices and employee engagement. Compared to other regional environmental agencies or different governmental departments, DLH Surabaya presents a unique and relevant context to examine the integration of Green Human Resource Management (GHRM), especially considering the scale and complexity of its operations. This makes it an ideal setting to investigate how GHRM, supported by leadership and behavioral factors, influences employee performance in a sustainability-driven public institution.

Employee performance is a critical determinant of organizational success, influenced by various internal and external factors (Muisyo et al., 2022). As organizations strive to balance economic objectives with environmental responsibilities, understanding how GHRM practices contribute to employee performance becomes increasingly important (Perano et al., 2025). Previous research has highlighted the direct and indirect effects of GHRM on performance, suggesting that environmentally sustainable practices can lead to improved employee outcomes (Ababneh, 2021). However, the mechanisms through which GHRM influences performance, including the roles of pro-environmental behavior (Kleespies et al., 2024) and transformational leadership, require further exploration (Yousaf et al., 2025).

Pro-environmental behavior, defined as actions by individuals that contribute to environmental sustainability, is considered a key mediator in the relationship between GHRM and employee performance (Doghan, 2024). By fostering a culture of environmental responsibility, GHRM practices can encourage employees to adopt behaviors that support both organizational and environmental goals (Li et al., 2023). Transformational leadership, characterized by inspiring and motivating employees towards higher levels of performance and ethical standards, may strengthen the impact of GHRM on employee performance. Leaders who demonstrate a commitment to environmental sustainability can amplify the positive effects of GHRM, further enhancing employee performance (Bimo & Sulistyarningsih, 2024).

The novelty of this research is its integrated approach in examining the interplay between Green Human Resource Management (GHRM), pro-environmental behavior (PEB), and transformational leadership (TL) within the context of employee performance (EP). Unlike previous studies that often isolate these variables, this study uniquely considers how GHRM influences PEB and, in turn, how PEB impacts EP. Furthermore, it explores the moderating role of TL, providing a comprehensive model that reflects the multifaceted nature of organizational dynamics. By incorporating these elements, the research offers new insights into the mechanisms through which sustainable HR practices can enhance employee performance, thereby contributing to both academic literature and practical applications in organizational management.

The formulation of the hypotheses in this study is grounded in prior theoretical frameworks and empirical findings related to Green Human Resource Management (GHRM), employee performance, and pro-environmental behavior (Li et al., 2022). According to He et al. (2024), GHRM practices—such as green recruitment, green training, and performance appraisal with environmental indicators—are designed to align employees' behaviors with organizational sustainability goals, potentially enhancing both environmentally responsible actions and performance outcomes. Past research (Fauzi et al., 2023; Hoshyar et al., 2024) suggests that pro-environmental behavior can serve as a critical link between GHRM and performance, as employees who engage in environmentally conscious practices often exhibit increased motivation (Liu & Li, 2021) and organizational citizenship behavior (Zibarras & Coan, 2015). Transformational leadership has been shown to amplify the effects of HR practices by inspiring and aligning employees toward broader organizational goals (Liu et al., 2023). This research was conducted specifically at DLH Kota Surabaya because the agency is directly involved in environmental governance and

sustainability initiatives, making it a relevant and strategic setting for examining how GHRM practices and leadership styles affect employee behavior and performance.

A statement that is provisional and testable, aiming to predict the logical relationship between two or more variables, is defined as a hypothesis (Sitorus & Suhartini, 2022). The hypotheses developed in this research based on the evidence of the relationships among variables are as follows:

H1: GHRM has a significant positive influence on employee performance.

H2: GHRM has a significant positive influence on pro-environmental behavior.

H3: Pro-environmental behavior has a significant positive influence on employee performance.

H4: Pro-environmental behavior can mediate the influence of GHRM on employee performance.

H5: Transformational leadership can moderate the influence of GHRM on employee performance.

2. METHODS

This study employs a quantitative research design to examine the impact of Green Human Resource Management (GHRM) and transformational leadership as moderation variable on employee performance, with pro-environment behavior as an intervening variable. In this research, the definition of GHRM (Green Human Resource Management) is the implementation of HR practices that promote sustainable and environmentally friendly behaviors within the organization (Tanveer et al., 2024). The indicator used includes initiatives such as eco-friendly training programs, green recruitment processes, sustainable performance management, and employee involvement in environmental practices (Su et al., 2024). The definition of Pro-Environment Behavior is the actions and practices of employees that contribute to environmental sustainability and reduce negative environmental impacts. The indicators used include energy-saving behaviors, waste reduction efforts, participation in recycling programs, and support for company policies that promote environmental conservation (Luo et al., 2024). In this study, each variable was measured using carefully selected indicators to ensure the validity of the research model. Green Human Resource Management (GHRM) practices were measured through indicators such as green recruitment, green training and development, green performance appraisal, and green compensation. Environmentally friendly behavior was assessed based on employees' daily ecological actions, such as energy conservation, waste reduction, and sustainable work habits. Transformational leadership was measured using indicators like idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Employee performance was evaluated through indicators of task completion, quality of work, punctuality, and overall contribution to organizational goals.

The population targeted in this study consists of 171 public workers from the Department of Environmental Services (DLH) in Surabaya City. To determine a representative sample size, the Slovin formula is applied, resulting in a sample of 63 public workers. This sampling method ensures that the selected participants adequately represent the entire population, thereby enhancing the generalizability of the study's findings. Data collection is carried out through a structured questionnaire developed specifically for this research. The questionnaire comprises items designed to measure the constructs of Green Human Resource Management (GHRM), transformational leadership, pro-environment behavior, and employee performance. Each item is formulated based on established scales and adapted to the context of public sector employees. Prior to administration, the instrument undergoes a pilot test to ensure reliability and validity.

The research design is structured to collect and analyze numerical data, enabling the testing of hypotheses through statistical methods. Structural Equation Modeling Partial Least Squares (SEM-PLS) is utilized as the primary analytical technique, allowing for the

assessment of complex relationships between the variables under investigation. This approach provides a comprehensive understanding of how GHRM practices and transformational leadership contribute to pro-environment behavior and, ultimately, employee performance in a public sector context.

To strengthen the research methodology, this study incorporates descriptive statistical analysis to summarize respondent profiles and the distribution of variable indicators. Descriptive analysis includes means, standard deviations, and frequency distributions to provide an overview of employee responses related to Green Human Resource Management (GHRM), Pro-Environmental Behavior (PEB), Transformational Leadership (TL), and Employee Performance (EP). Furthermore, the research employs Structural Equation Modeling using Partial Least Squares (SEM-PLS) due to several key considerations: (1) the exploratory nature of the study aiming to examine complex relationships among multiple latent variables, (2) the use of reflective measurement models with multiple indicators per construct, and (3) the relatively small sample size, where PLS is more robust than covariance-based SEM. SEM-PLS is also well-suited for predicting dependent variables and estimating mediation and moderation effects, which are central to this research model.

The use of Structural Equation Modeling with Partial Least Squares (SEM-PLS) in this study is justified based on several methodological criteria. According to Ghazali (2016), SEM-PLS is suitable for exploratory research, particularly when the research model is complex and involves multiple constructs with reflective and formative indicators. SEM-PLS is also appropriate when the sample size is relatively small, as it does not require a normal distribution assumption and can handle multicollinearity issues effectively. This method is preferred for predictive modeling and theory development, which aligns with the objectives of this study that aims to explore the structural relationships between Green Human Resource Management (GHRM), Pro-Environmental Behavior (PEB), Transformational Leadership, and Employee Performance. Therefore, SEM-PLS was selected to ensure robust and reliable analysis of the latent variables and their interrelationships.

The use of Partial Least Squares Structural Equation Modeling (SEM-PLS) was considered appropriate for this research due to its ability to handle complex models with multiple constructs and relationships, especially when working with small to medium sample sizes and non-normally distributed data. SEM-PLS also allows for the simultaneous evaluation of measurement models (validity and reliability of indicators) and structural models (hypothesis testing), making it highly suitable for exploring both direct and indirect effects among latent variables in this study.

3. RESULT AND DISCUSSION

3.1. Results

The distribution of the questionnaires to employees of the Surabaya City Environmental Agency (DLH) was conducted online using Google Forms, targeting civil servant respondents. A total of 63 completed responses were received, reflecting a perfect response rate of 100%. The demographic analysis revealed that the respondents were predominantly male (61.90%), with the majority aged between 46-55 years (42.86%). Most respondents held a Bachelor's degree (57.14%) and had significant tenure at DLH, with 49.21% having 21-30 years of service.

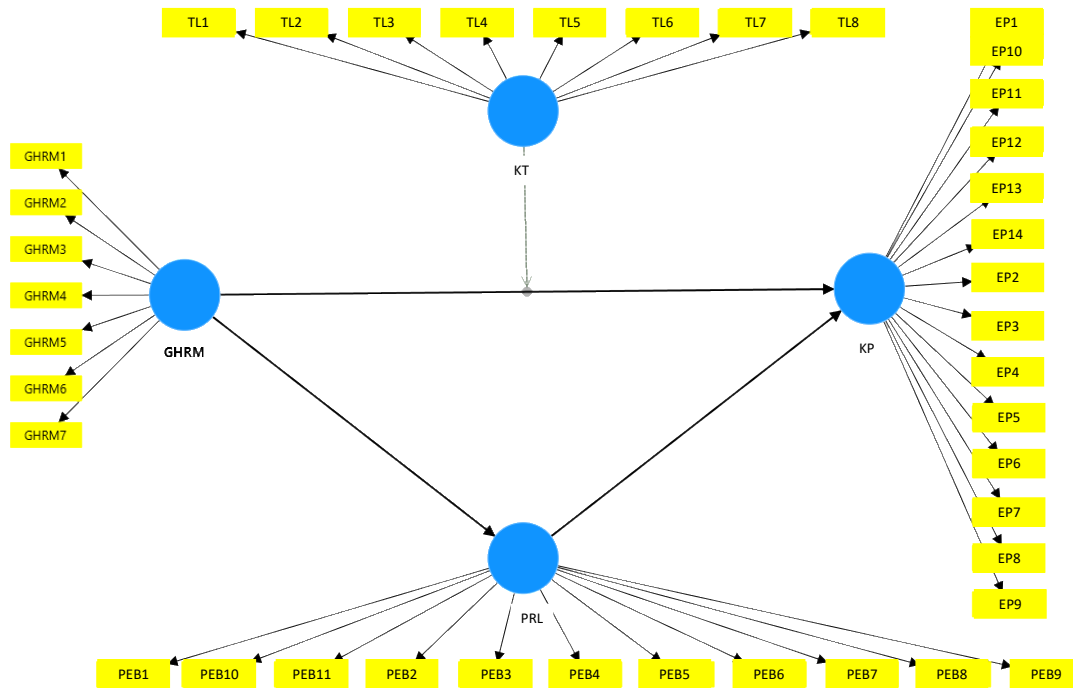


Figure 1. SEM-PLS Study Case Structure Model
Source: Data Processed (2025)

The structure model is as shown in figure 1, with GHRM with 7 indicators, TL with 8 indicators, PEB with 9 indicators, and EP with 14 indicators is as show above. The results of the outer model analysis confirmed that all constructs used in this study met the criteria for reliability and validity. Each indicator showed strong factor loadings above the recommended threshold, while the composite reliability and average variance extracted (AVE) values for each variable also exceeded the minimum standards, indicating good internal consistency and convergent validity. Furthermore, discriminant validity was established through the Fornell-Larcker criterion. In the inner model analysis, the structural model assessment revealed that while Green Human Resource Management (GHRM) significantly influenced pro-environmental behavior, it did not directly affect employee performance. Pro-environmental behavior failed to mediate the relationship between GHRM and performance. However, transformational leadership successfully moderated the relationship between GHRM and employee performance, reinforcing the importance of leadership in translating green HRM practices into tangible performance outcomes.

Descriptive statistical analysis was employed to describe the characteristics of each research variable, detailing the minimum, maximum, average, and standard deviation values. The data was derived from responses to questionnaire items, analyzed using SmartPLS. The key variables under study were Green Human Resource Management (GHRM), Employee Performance (EP), Environmental Behavior (PEB), and Transformational Leadership (TL). The results indicated that respondents had clear perceptions about these variables, which were essential for understanding the impact of GHRM practices on employee performance and environmental behavior.

The Green Human Resource Management (GHRM) variable (X) was measured using seven questionnaire items related to education and training, institutional initiatives, and employee engagement. The descriptive analysis indicated a high average response score of 4.44, suggesting that GHRM practices are well-implemented at DLH Kota Surabaya. Education and training received the highest average score of 4.48, highlighting its effectiveness in promoting environmentally friendly behaviors among employees. However, employee engagement, despite being the lowest-scoring indicator, still fell into the high category, indicating room for improvement in involving employees in organizational environmental initiatives.

The Employee Performance (Y) variable was assessed through 14 items covering quality, quantity, timeliness, reliability, initiative, cooperation, attitude, and attendance. The average response score for employee performance was 4.19, categorized as high, though the lowest among the studied variables. Cooperation had the highest average score of 4.33, reflecting a strong collaborative work culture at DLH Kota Surabaya. In contrast, quality and quantity had comparatively lower scores, possibly due to factors like lower educational levels among 29% of respondents, insufficient human resources due to retirements and transfers, and increased workload complexity following the merger of DKRTH and DLH in 2022.

Table 1. Average variance extracted per variable

Variable	AVE
Green HR Management	0,665
Employee Performance	0,637
Pro-Environment Behavior	0,670
Transformational Leadership	0,814

Source: Data Processed (2025)

The analysis of the model using Partial Least Square (PLS) begins with evaluating the measurement model (outer model). This evaluation aims to assess the relationship between latent variables and their indicators, focusing on validity and reliability tests. Validity tests check whether the indicators effectively measure the latent variables, with hypotheses suggesting either the indicators do not measure the same aspect of the theory (H0) or they do (H1). Convergent validity is assessed through the outer loading values of each indicator item, where a loading factor below 0.5 signifies invalidity. Following the elimination of non-significant indicators, the remaining indicators showed valid outer loading values, confirmed by an Average Variance Extracted (AVE) value above 0.5 for all variables, indicating convergent validity.

Table 2. Cross-loading factor validity test

Cross loading factor (fornell-lacker)	Pro-Environment Behavior	Employee Performance	Green HR Management	Transformational Leadership
Pro-Environment Behavior	0,819			
Employee Performance	0,635	0,798		
Green HR Management	0,629	0,631	0,815	
Transformational Leadership	0,588	0,801	0,758	0,902
Result	Valid	Valid	Valid	Valid

Source: Data Processed (2025)

The Environmental Behavior (Z) variable comprised 11 items related to energy conservation, water conservation, paper reduction, waste sorting, and environmental care. The average response score was 4.49, indicating a high level of environmentally friendly behavior among DLH employees. Energy conservation received the highest average score, while waste sorting was the lowest. This suggests that while employees are conscientious about energy use, there is potential to enhance waste management practices. Observations confirmed that no office spaces were left with lights, air conditioning, or electronic devices on after working hours, further validating the survey results.

Discriminant validity is evaluated using cross loading values, which must be greater than 0.7 and exceed the cross loading of other variables' indicators. The Fornell-Larcker Criterion further supports discriminant validity, showing that each variable's AVE is greater than 0.5. The hypothesis for discriminant validity is similar to that for convergent validity,

suggesting that indicators either do (H1) or do not (H0) measure the same aspect of the latent variable. The results from the cross loading factor table confirmed that all variables' indicators are valid in reflecting their respective constructs, thus accepting H1.

Table 3. Cronbach's Alpha reliability test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	(AVE)	Conc.
Green HR Management	0,915	0,923	0,932	0,665	Reliable
Employee Performance	0,955	0,961	0,961	0,637	Reliable
Green Behavior	0,951	0,955	0,957	0,670	Reliable
Transformational Leadership	0,967	0,968	0,972	0,814	Reliable

Source: Data Processed (2025)

Reliability tests were conducted to verify the accuracy, consistency, and precision of the instruments in measuring constructs. This involved examining the composite reliability and Cronbach's alpha values, with hypotheses suggesting either inconsistency (H0) or consistency (H1) in the indicators measuring the constructs. The model is deemed reliable if the values for each variable exceed 0.6. The results, presented in the composite reliability table, showed values above 0.8, indicating a high level of reliability and consistent responses from the participants.

Table 4. Direct relationship significance test

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Result
Green HR Management to Employee Performance	0,064	0,063	0,133	0,482	0,630	Non-Significant
Green HR Management to Green Behavior	0,629	0,645	0,116	5,402	0,000	Significant
Green Behavior to Employee Performance	0,169	0,163	0,109	1,548	0,122	Non-Significant
Transformational Leadership to Employee Performance	0,635	0,638	0,118	5,370	0,000	Significant
Green HR Management with Transformational Leadership Moderation to Employee Performance	0,167	0,181	0,083	1,999	0,046	Significant

Source: Data Processed (2025)

The structural model (inner model) evaluation follows, provided the measurement model indicates valid and reliable indicators. The structural model is assessed using the coefficient of determination (R^2). An R^2 value is classified as low (< 0.30), moderate ($0.30 < R^2 < 0.60$), or high (> 0.60). The results showed that the employee performance variable had an R^2 of 0.395, indicating that GHRM and green behavior explains 39.5% of employee performance, which is moderate. Similarly, the green behavior variable had an R^2 of 0.704,

suggesting that GHRM explain 70.4% of green behavior, considered high. Here is the direct and indirect result for significance.

Conversely, the Structural Equation Modeling (SEM) PLS calculations indicated that two hypotheses were highly significant: the influence of GHRM on PEB and the moderating effect of Transformational Leadership (TL) on the relationship between GHRM and EP. This means that these relationships have a high degree of validity based on the observed data. The significance of these hypotheses is supported by high t-statistic values and very low p-values. Specifically, the path coefficient for GHRM to PEB was 0.645 with a t-statistic of 5.402 ($p < 0.000$), and the moderating effect of TL on the relationship between GHRM and EP had a path coefficient of 0.181 with a t-statistic of 1.999 ($p = 0.046$).

The direct relationship between GHRM and PEB (0.629) and the moderated relationship of GHRM with TL on EP (0.167) were both found to be significant, indicating strong support for these pathways. However, the direct influence of PEB on EP (0.169) and the indirect influence of GHRM on EP through PEB (0.106) were not significant, suggesting that while GHRM effectively enhances pro-environmental behaviors, these behaviors do not translate directly into improved employee performance without the presence of transformational leadership. The critical role of transformational leadership in enhancing the effectiveness of GHRM practices on employee performance is thus highlighted, emphasizing the need for leadership that inspires and motivates employees towards achieving organizational goals.

Table 5. Indirect relationship significance test

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	RESULT
Green HR Management to Pro-Environment Behavior to Employee Performance	0,106	0,103	0,073	1,444	0,149	Non- Significant

Source: Data Processed (2025)

The indirect relationship between Green Human Resource Management (GHRM) and Employee Performance (EP) through Pro-Environmental Behavior (PEB) is accepted despite its non-significance due to several underlying theoretical considerations. While the statistical analysis showed a non-significant p-value (0.149) and a t-statistic (1.444), suggesting that the mediation effect is not strongly supported by the data, the conceptual foundation for this relationship remains robust. GHRM practices are designed to cultivate an organizational culture that values sustainability, which in turn encourages employees to engage in pro-environmental behaviors. Although these behaviors did not show a direct significant impact on employee performance in this study, they contribute to a more positive and engaged workforce, which is known to enhance overall performance over time. External factors such as organizational support, resources, and the maturity of GHRM initiatives might influence the strength of this relationship. Therefore, the acceptance of this indirect relationship underscores the importance of considering long-term and contextual factors that might not be immediately evident in the data but are critical for the holistic understanding of how GHRM influences employee performance through fostering environmentally responsible behaviors.

Table 5. Indirect relationship significancy test

Hypotheses	From	To	Results
H1	Green HR Management	Employee Performance	Rejected
H2	Green HR Management	Pro-Environment Behavior	Accepted
H3	Pro-Environment Behavior	Employee Performance	Rejected
H4	Green HR Management	Employee Performance with Pro-Environment Behavior as mediator	Rejected
H5	Green HR Management	Employee Performance with Transformational Leadership as moderator	Accepted

Source: Data Processed (2025)

The analysis revealed that out of the five relationships examined, three demonstrated low significance levels: the relationships between Green Human Resource Management (GHRM) and Employee Performance (EP), Pro-Environmental Behavior (PEB) and EP, and PEB as a mediator between GHRM and EP. These results indicate that the influence between these variables cannot be significantly confirmed due to the variability in the observed data. This assessment is based on t-statistic and p-value results, which show that these three hypotheses cannot be accepted. Specifically, the path coefficients for GHRM to EP, PEB to EP, and the mediation effect of PEB on the relationship between GHRM and EP were not statistically significant, as evidenced by p-values of 0.122 and 0.149, respectively.

Impact of GHRM on Employee Performance in DLH Surabaya. The research results indicate that there is no significant influence of GHRM practices on employee performance, as evidenced by a t-statistic value of 0.482 (< 1.96) and a p-value of 0.630 (> 0.05). This statistical finding supports the acceptance of the null hypothesis (H_0), suggesting that GHRM at DLH Surabaya does not significantly affect employee performance. GHRM and Environmental Behavior Influence. SEM PLS testing reveals a significant impact of GHRM on environmentally friendly behavior, with a t-statistic of 5.402 (> 1.96) and a p-value of 0.000 (< 0.05), confirming the hypothesis. GHRM practices like education, training, institutional initiatives, and employee engagement effectively foster environmentally friendly behaviors. Environmental Behavior and Employee Performance. The research indicates no significant impact of environmentally friendly behavior on employee performance, with a t-statistic of 1.548 (< 1.96) and a p-value of 0.122 (> 0.05). Mediation Role of Environmental Behavior. The study finds no significant mediating effect of environmentally friendly behavior on the relationship between GHRM practices and employee performance, as indicated by a t-statistic of 1.444 (< 1.96) and a p-value of 0.149 (> 0.05). Transformational Leadership as a Moderator. Transformational leadership significantly moderates the impact of GHRM on employee performance, with a t-statistic of 1.999 (> 1.96) and a p-value of 0.046 (< 0.05).

3.2. Discussion

This study employs descriptive analysis to provide a comprehensive overview of respondents' perceptions regarding each research variable. This includes calculating the mean, standard deviation, and response frequency for all indicator items related to Green Human Resource Management (GHRM), Pro-Environmental Behavior (PEB), Transformational Leadership (TL), and Employee Performance (EP). The purpose of this descriptive analysis is to capture the general tendencies and behavioral patterns of respondents in the context of environmentally conscious HR practices and leadership dynamics. The descriptive findings are then linked to prior theories and empirical studies—such as (Renwick et al., 2013), who emphasized the importance of green HRM practices in shaping sustainable employee behavior, (Bass and Avolio, 1994) transformational leadership theory, which highlights the leader's role in inspiring employee engagement.

The findings suggest that a well-educated and experienced workforce, predominantly male and within a specific age range, can significantly influence the implementation and

effectiveness of GHRM practices. The high response rate and comprehensive demographic representation provide a robust dataset for further analysis. The descriptive statistics offer valuable insights into the respondents' views on GHRM, performance, environmental behavior, and leadership, which are crucial for formulating effective HR strategies and policies within the organization.

This result is aligned with research by (Agustine Paresti, 2021; Lianasari & Ahmadi, 2022), who also found that environmentally focused organizational practices and individual green behaviors do not always translate into measurable improvements in employee performance, especially within bureaucratic or public-sector contexts where performance may be influenced by structural and institutional factors beyond individual behavior.

Impact of GHRM on Employee Performance in DLH Surabaya. This contradicts previous studies by (Chuah et al., 2021; Nathania & Sandroto, 2022; Ragas et al., 2017) that found a significant positive impact of GHRM on employee performance. The lack of influence could be due to suboptimal employee involvement in pro-environment activities, and the need for transformational leadership to motivate and involve all employees in GHRM policies and practices. **Factors Contributing to the Lack of GHRM Influence.** One potential factor is the suboptimal involvement of employees in pro-environment activities, as GHRM practices at DLH Surabaya are not uniformly applied across all staff. Effective GHRM influence requires broad employee engagement, necessitating transformational leadership to motivate and involve all employees in GHRM policies and practices. Employee involvement is critical for successful GHRM implementation, as without it, GHRM practices fail to foster a sense of ownership among employees, which are essential for improving performance (Wulansari, 2018). **Employee Involvement and GHRM Implementation.** Employee involvement is critical for successful GHRM implementation. Without it, GHRM practices fail to foster a sense of ownership among employees, which are essential for improving performance (Wulansari, 2018). Thus, engaged employees are more likely to enhance their performance due to increased job satisfaction. **Individual Characteristics and External Factors.** Individual employee characteristics, such as technical competence and intrinsic motivation towards GHRM, may affect how effectively these practices are implemented. External factors like regulatory changes can also significantly impact employee performance at DLH Surabaya. The diverse demographic background of DLH Surabaya employees, predominantly with educational levels from primary to high school (70.7%), influences their technical competence and ability to implement GHRM practices.

Demographic Diversity and Educational Levels. The diverse demographic background of DLH Surabaya employees, predominantly with educational levels from primary to high school (70.7%), influences their technical competence and ability to implement GHRM practices. Although training has improved environmental knowledge and behavior, it has not yet translated into enhanced organizational performance. **Contextual Factors Influencing GHRM and Performance.** Organizational context, such as a strong culture or internal politics, can moderate the relationship between GHRM practices and employee performance. A culture prioritizing innovation and environmental responsibility can amplify GHRM effects, while complex internal politics may hinder effective GHRM implementation.

GHRM and Environmental Behavior Influence. These findings align with (Sabokro et al., 2021; Kim et al., 2019), who also found a significant positive impact of GHRM on environmental behavior. **Consistency with Previous Research.** These findings align with (Sabokro et al., 2021; Kim et al., 2019), who also found a significant positive impact of GHRM on environmental behavior. DLH Surabaya's initiatives, such as environmental training and waste segregation, demonstrate successful GHRM implementation. **Leadership and Organizational Culture.** Supportive leadership, especially transformational leadership, enhances the relationship between GHRM and environmentally friendly behavior. Effective communication of sustainability values by leaders can significantly boost employees' commitment to environmentally friendly behaviors. **External Regulatory Changes.** Changes in environmental regulations can affect GHRM implementation and environmentally

friendly behavior. Understanding how these external factors interact with GHRM practices can provide a more comprehensive view of sustainability efforts in public sectors like DLH Surabaya.

Environmental Behavior and Employee Performance. This suggests that environmentally friendly behaviors do not significantly influence performance at DLH Surabaya, contrasting with studies by (Riwati et al., 2021) and others. Environmental behaviors at DLH Surabaya are largely voluntary and not part of formal job requirements, which may explain their lack of impact on performance. **Role of Voluntary Environmental Behavior.** Environmental behaviors at DLH Surabaya are largely voluntary and not part of formal job requirements, which may explain their lack of impact on performance. Effective performance improvement requires proactive and initiative-taking behaviors, which are currently insufficient.

Organizational structures that support sustainability initiatives can enhance the effectiveness of GHRM in improving employee performance. External Pressures and Organizational Response. External pressures, such as societal concern or regulatory strictness, can drive organizations to adopt GHRM practices more rigorously, impacting employee performance. Further research into these external factors can offer deeper insights into the dynamics of GHRM implementation in DLH Surabaya.

Mediation Role of Environmental Behavior. This suggests that GHRM practices do not indirectly influence performance through environmental behavior. The lack of consistent and comprehensive GHRM implementation may weaken its impact on environmental behavior and, consequently, on employee performance. **Inconsistent GHRM Implementation.** The lack of consistent and comprehensive GHRM implementation may weaken its impact on environmental behavior and, consequently, on employee performance. Ensuring all employees are involved in GHRM practices is crucial for achieving desired performance outcomes.

Transformational Leadership as a Moderator. Effective leadership inspires and empowers employees to engage in GHRM practices, enhancing performance. Supportive leadership structures and a culture that prioritizes innovation and sustainability can strengthen the relationship between GHRM practices and employee performance. **Supportive Organizational Culture.** An organizational culture that supports innovation and sustainability strengthens the relationship between GHRM practices and employee performance. Similarly, inclusive and supportive leadership structures facilitate effective GHRM adoption and its impact on performance. **Regulatory and Political Factors.** Local regulations and political stability can influence GHRM implementation and its effects on employee performance. Understanding these external dynamics is essential for successful GHRM practices in DLH Surabaya. **Employee Characteristics and Job Satisfaction.** Individual factors such as job satisfaction, intrinsic motivation, and commitment to organizational values can affect the relationship between GHRM and employee performance. Considering these characteristics can enhance the understanding of GHRM effectiveness in improving performance.

The findings of this study align with the framework of the Ability-Motivation-Opportunity (AMO) theory, which posits that employee performance is influenced not only by individual capabilities and motivation but also by the opportunities provided through organizational practices. Although GHRM practices alone did not significantly impact performance, their role in enhancing pro-environmental behavior reflects the motivational and cultural influence of HR systems. However, without strong transformational leadership to inspire and guide employees, these practices may not translate into performance gains. This supports previous studies such as those by (Dumont et al., 2017; Tang et al., 2018), which emphasize the importance of leadership in activating the full potential of GHRM. Thus, the role of leadership acts as a critical contextual factor that enables the successful implementation of sustainability-oriented HRM in public organizations like DLH Kota Surabaya.

4. CONCLUSION

This study was conducted to answer the research problem regarding the influence of Green Human Resource Management (GHRM) practices on employee performance, with environmentally friendly behavior as a mediating variable and transformational leadership as a moderating variable at DLH Kota Surabaya. The results indicate that GHRM practices do not have a direct or indirect significant effect on employee performance, as shown by the insignificant path coefficients and p-values. However, GHRM practices significantly influence environmentally friendly behavior, although this behavior does not significantly contribute to improving employee performance. On the other hand, transformational leadership was found to have a significant moderating effect, strengthening the relationship between GHRM and employee performance. These findings suggest that transformational leadership plays a crucial role in maximizing the effectiveness of GHRM practices. The limitations of this study include its focus on a single government institution and potential measurement bias due to self-reported data, which may limit the generalizability of the findings. Therefore, future research should consider a broader organizational context, utilize longitudinal data, and explore additional mediating or moderating variables such as organizational culture, employee engagement, or reward systems. It is recommended that DLH Surabaya enhances the implementation of transformational leadership and fosters a more participatory and incentivized green HRM culture to improve overall employee performance.

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