

The Influence of Green Human Resource Management (Green Hrm) on Environmental Performance Mediated by Green Motivation and Green Innovation

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ABSTRACT: This study aims to investigate the influence of Green Human Resource Management (Green HRM) on Environmental Performance, mediated by Green Motivation and Green Innovation at PT PLN NP UP Sebalang. The research is essential due to the critical role of Green HRM practices in addressing global demands for environmental sustainability, especially in the electricity generation industry, which is currently transitioning towards clean energy. The research was conducted through a survey method utilizing questionnaires involving 126 respondents from the company's employees. The collected data were analyzed using Structural Equation Modeling (SEM) with SmartPLS software. The findings of this study support the proposed hypotheses, demonstrating that Green HRM positively and significantly affects Environmental Performance. Additionally, Green Motivation and Green Innovation mediate the effect of Green HRM on Environmental Performance. Thus, effective Green HRM implementation not only directly enhances environmental performance but also actively motivates employees to engage in environmentally friendly activities and fosters eco-friendly innovations. Based on these results, it is recommended that companies seeking to enhance their environmental performance should strengthen and integrate Green HRM practices with strategies focused on boosting employee motivation and promoting green innovations.

KEYWORDS: Green Human Resource Management, Green Motivation, Green Innovation, Environmental Performance, Electricity Generation, Sustainability

I. INTRODUCTION

Over the past few decades, issues of sustainable development and environmental responsibility have become central to global business strategies. Climate change and environmental degradation have emerged as critical concerns on international agendas, compelling organizations to reform their operational practices, including human resource management (Fang et al., 2022; Kim et al., 2019). As a developing country with a significant industrial sector, Indonesia—particularly its power generation industry—faces serious challenges related to carbon emissions and ecological impacts. This compels companies to integrate environmentally sustainable practices, such as renewable energy utilization (solar, wind, biomass), to reduce dependency on fossil fuels.

Alongside growing public awareness of environmental issues, there is an increasing demand for environmentally responsible companies and environmentally conscious employees (Din et al., 2024). The implementation of robust environmental management systems supports organizations in monitoring and minimizing their ecological footprints. In this context, environmental performance has become a critical metric not only for operational effectiveness but also for broader social and ecological accountability.

Achieving strong environmental performance requires the active participation of human resources. Green Human Resource Management (Green HRM) has emerged as an integrative approach aligning HR practices with environmental sustainability initiatives (Renwick et al., 2013). The aim is to cultivate a green organizational culture, enhance environmental performance, and ensure that operations are carried out in an eco-efficient manner (Ahmed et al., 2021). Green HRM encompasses environmentally-oriented recruitment, training, performance appraisal, and reward systems, all of which contribute to cultivating employee awareness and commitment to sustainability (Hajj Hussein & Bou Zakhem, 2024). In the era of climate change and environmental degradation, Indonesia's power generation sector—such as PT PLN Nusantara Power UP Sebalang (PT PLN NP UPSB), a sub-holding of PT PLN (Persero)—faces the urgent challenge of minimizing its environmental footprint. Aligned with its mission to accelerate the renewable energy business portfolio and support carbon neutrality targets, PT PLN NP UPSB has committed to

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implementing environmentally friendly operational practices. In practice, the company has adopted several Green HRM initiatives, implementation of international environmental management standards (ISO 14001:2014), assignment of personnel with environmental expertise, regular environmental training and awareness programs, integration of environmental performance into organizational KPIs, adoption of sustainable behavioral practices, including 3R (Reduce, Reuse, Recycle) principles in daily operations, greening initiatives, such as tree planting around office premises.

While these practices indicate a conceptual acceptance of Green HRM, questions remain regarding their effectiveness in improving organizational outcomes—particularly in achieving superior environmental performance. Environmental performance is increasingly recognized as a strategic asset that enhances corporate image and public trust, contributing to long-term business success (Markey et al., 2019). In Indonesia, environmental performance is formally assessed through the Ministry of Environment and Forestry's PROPER program, which evaluates companies based on various environmental management criteria. The rating ranges from Gold (highest) to Black (lowest), providing transparency on corporate environmental stewardship. Despite PT PLN NP UPSB's efforts, PROPER assessments from 2018–2022 indicate that the company has consistently remained at the “Blue” level, reflecting regulatory compliance but falling short of proactive excellence. This performance gap underscores the need for a deeper evaluation of internal human resource contributions—particularly in driving environmental innovation and employee-led green initiatives.

Green Innovation, defined as the development of environmentally friendly products, processes, or technologies, is crucial in achieving sustainability goals. It aims to minimize environmental impact while enhancing resource efficiency (Chen et al., 2006; Soewarno et al., 2019). PT PLN NP UPSB has implemented green innovations such as co-firing (partial substitution of coal with biomass in steam power plants) and the repurposing of combustion waste (FABA) into useful construction materials. These efforts demonstrate the company's commitment to environmental stewardship through technological innovation. Crucially, the success of Green HRM and green innovation is heavily influenced by employee motivation—specifically Green Motivation. Environmentally motivated employees are more likely to engage in sustainable practices, contribute innovative ideas, and support corporate environmental goals (Kim et al., 2019). However, empirical data within the company indicates that employee-driven green innovation remains limited, and performance outcomes are yet to reach their full potential..

II. LITERATURE REVIEW

The Ability-Motivation-Opportunity (AMO) Theory

The Ability-Motivation-Opportunity (AMO) framework posits that employee performance is influenced by three interrelated components: ability, motivation, and opportunity. First proposed by Appelbaum et al. (2000), the theory asserts that organizations must ensure employees possess the right skills, are highly motivated, and are provided opportunities to utilize their competencies at work. Within the domain of Green Human Resource Management (Green HRM), the AMO model serves as a valuable theoretical lens to explore how environmentally oriented HR practices can enhance organizational environmental performance. “Organizations must ensure that employees have appropriate abilities, high motivation, and opportunities to apply their skills in their work” (Appelbaum et al., 2000). Green HRM operationalizes this by enhancing employee competencies through targeted training, motivating them through incentives and a sustainability-driven culture, and offering platforms for engaging in green initiatives. This approach not only contributes to sustainability goals but also enhances job satisfaction and career development, thus fostering a mutually beneficial relationship between employees and organizations. Ability, in the Green HRM context involves the knowledge and skills required to carry out environmentally responsible practices (Renwick et al., 2013). Motivation, Motivational approaches that encourage pro-environmental behavior can increase employee involvement in environmental initiatives (Renwick et al., 2013). Opportunity, Equally important is the provision of opportunities for employees to engage in sustainability-related practices. Policies and systems that support green participation empower employees to act on their environmental competencies. As noted by Appelbaum et al. (2000), “providing sufficient opportunities enables employees to optimize their roles in improving organizational performance.”

Green Human Resource Management (Green HRM)

Green HRM refers to human resource strategies that encourage eco-friendly behavior in the workplace. It includes activities such as setting environmental objectives for employees, providing environmental training, and incorporating environmental performance into appraisal, rewards, and promotion systems (Dumont & Shen, 2016). This integration of environmental aspects into HRM has led to the emergence of Green HRM as a strategic response to environmental concerns. Renwick et al. (2013) define Green HRM as “the integration of environmental management into human resource practices.” The concept builds on the Resource-Based View (RBV) of the firm, as proposed by Barney (1991), which posits that internal resources, particularly human

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capital, can serve as sources of sustained competitive advantage. Green HRM, therefore, allows organizations to cultivate unique capabilities for managing environmental challenges (Hart, 1995). Additionally, Green HRM contributes to employee engagement and productivity by aligning sustainability practices with social and psychological well-being. According to Dumont et al. (2017), “green practices improve employee engagement and productivity by aligning HR functions with environmental goals.” The implementation of green HRM activities such as Green Recruitment and Selection (GRS), Green Training (GTR), and Green Compensation (GCO) can reinforce environmental commitment across sectors (Govindarajulu & Daily, 2004).

Green Human Resource Management (GHRM) practices have been shown to positively influence organizational environmental performance by fostering employee awareness, commitment, and pro-environmental behaviors (Renwick et al., 2013; Roscoe et al., 2019; Gilal et al., 2019). GHRM encompasses green recruitment, training, evaluation, and environmentally linked compensation that align with corporate sustainability strategies. Drawing upon the Resource-Based View (RBV) and the Ability–Motivation–Opportunity (AMO) framework, GHRM equips organizations with competent, motivated, and empowered human resources capable of achieving environmental objectives (Wiredu et al., 2023).

Hypothesis 1: Green HRM has a positive and significant effect on Environmental Performance. Environmental Performance

Environmental performance refers to organizational practices that go beyond mere regulatory compliance to actively meet and exceed societal expectations for environmental responsibility. According to Din et al. (2024), it involves “assessing organizational activities, products, and resource use to ensure compliance with environmental standards and mitigate associated impacts.” Key objectives of environmental management are to control pollution levels and improve environmental quality. Organizations are increasingly adopting such practices to gain competitive advantage, driven by ethical, economic, legal, and commercial imperatives. These include fulfilling moral obligations to preserve the environment, conserving resources to reduce costs, avoiding legal repercussions, and responding to market demands for sustainability.

Green Motivation

Green motivation refers to the internal and external drives that lead employees to engage in eco-friendly workplace behaviors. It includes both intrinsic factors—such as personal satisfaction from engaging in green practices—and extrinsic factors like rewards and recognition (Ahmed et al., 2021). According to Gilal et al. (2019), employees exhibit distinct motivational orientations: “intrinsic motivation, where employees derive pleasure and fulfillment from their tasks,” and “extrinsic motivation, driven by external rewards such as financial benefits and recognition.” Intrinsic motivation fosters proactive engagement and skill development (Amabile & Pillemer, 2012), while extrinsic incentives strengthen environmental behavior and performance (Li et al., 2020).

Green Motivation serves as a key psychological mechanism mediating the influence of GHRM on environmental performance. GHRM practices such as green training, rewards, and performance management enhance employees’ intrinsic and extrinsic motivation to engage in environmentally responsible behavior (Renwick et al., 2013; Singh et al., 2020). In the hospitality sector, empirical evidence confirms that Green Motivation significantly mediates this relationship (Ahmed et al., 2021). The AMO theory highlights that motivation stimulated through GHRM contributes to achieving sustainability goals by fostering environmentally proactive behaviors.

Hypothesis 2: Green Motivation mediates the effect of Green HRM on Environmental Performance. Green Innovation

Green innovation refers to the development of environmentally friendly processes, products, and practices that reduce environmental harm while enhancing organizational performance. According to Chen et al. (2006), it encompasses improvements in technology that both “prevent pollution and conserve energy.” The dual components of green innovation include green product innovation—such as recyclable or sustainable products—and green process innovation, which optimizes operations to reduce waste and environmental degradation. Empirical findings show that “green innovation is positively associated with environmental performance in large manufacturing firms” (Rehman et al., 2021). Furthermore, Wong et al. (2013) emphasize that green innovation not only minimizes industrial pollution but also enhances corporate environmental responsibility. Strategically, green innovation is seen as a core element of sustainable development, helping businesses mitigate environmental risks while delivering value to consumers. Green innovation plays a crucial role in reducing greenhouse gas emissions and environmental degradation. “It serves as a main driver of sustainable development aimed at minimizing the negative environmental impact across all product life cycle stages.”

Green Innovation strengthens the link between GHRM and environmental performance, particularly when training and incentives are directed toward fostering environmentally sustainable innovation (Rehman et al., 2021). These innovations include the development of green products, processes, and work practices that contribute to resource efficiency and the mitigation of negative environmental impacts. In this regard, GHRM not only has a direct influence but also an indirect effect through the

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creation of a work environment that supports continuous green innovation.

Hypothesis 3: Green Innovation mediates the effect of Green HRM on Environmental Performance.

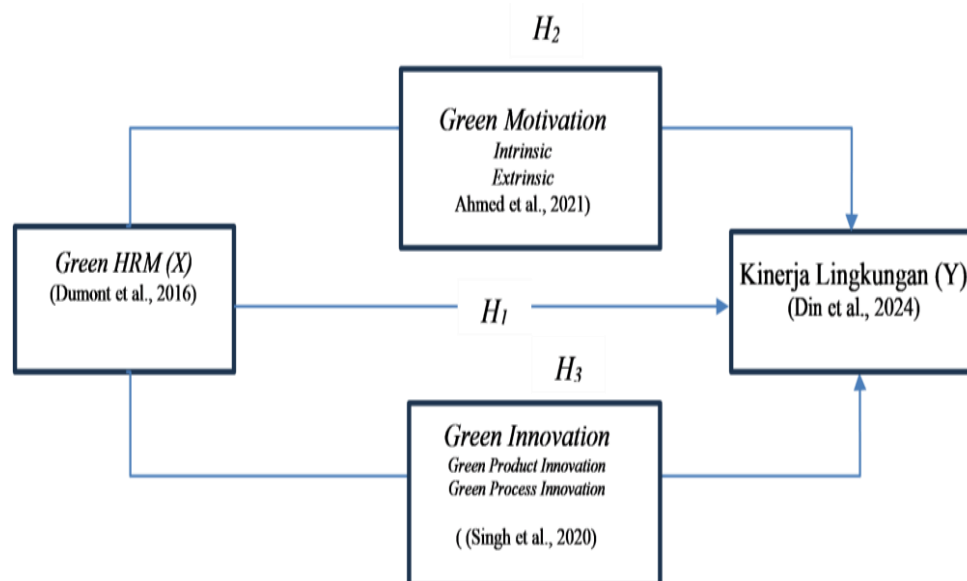


Figure 1. Framework

III. METHODOLOGY

The research employed a quantitative approach aimed at testing theory-based hypotheses through statistical analysis. This method was chosen due to its deductive and causal reasoning, as it allows for systematic examination of relationships between variables using numerical data. The findings are presented through tables and graphs, with interpretations aligned to existing theoretical frameworks (Neuman, 2014). According to Malhotra (2010) the target population is a collection of elements or objects that have the information sought by the researcher and about which conclusions will be drawn. The target population of this study consisted of all 126 employees of PT PLN Nusantara Power UP Sebalang, a steam power generation unit under PT PLN Nusantara Power. This unit plays a critical role in sustaining the electricity supply within the interconnected Sumatra power system and Lampung Province. The entire population was involved as the research sample, categorized by department or division within the organization, to ensure comprehensive data representation (Sekaran & Bougie, 2018; Malhotra, 2010). Primary data were collected by employing a census technique, which means that all members of the population were included as respondents. This approach enhances the reliability of the findings by avoiding sampling bias and capturing a complete picture of the organization's workforce.

Data analysis in this study involved the systematic organization and interpretation of data obtained through interviews, field notes, and documentation, aligning with Sugiyono (2019). The software SmartPLS was employed to perform Structural Equation Modeling (SEM), specifically using the Partial Least Squares (PLS) technique, which allows for the simultaneous assessment of measurement and structural models. According to Gaston (2009) in Ghazali (2015), PLS serves both confirmatory and exploratory purposes, enabling hypothesis testing and construct relationship exploration. The approach emphasizes theoretical grounding, appropriate variable selection, analytical strategy, and result interpretation. The PLS analysis consists of three core stages: parameter estimation, measurement model (outer model), and structural model (inner model).

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IV. RESULT AND DISCUSION

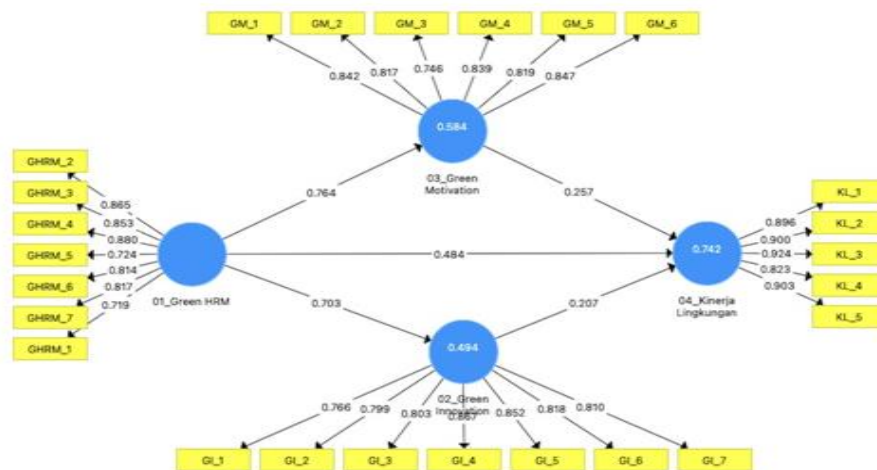


Figure 2. Outer Model Result

A. CONVERGENT VALIDITY

Convergent validity refers to the principle that manifest variables (i.e., measurement indicators) of a given construct should be highly correlated with one another. This validity is typically assessed through the loading factor of each indicator within the construct. In confirmatory research, a loading factor exceeding 0.70 is considered acceptable, while in exploratory studies, values between 0.60 and 0.70 are generally permissible. For early-stage scale development, loading factors ranging from 0.50 to 0.60 may still be deemed adequate. Based on the results presented in Table 1, all indicators in this study exhibit loading factor values greater than 0.70, thereby meeting the criteria for convergent validity and confirming that the indicators are both valid and reliable.

Table 1. Outer Loading Result

VARIABLE	ITEM	OUTER LOADING	DECISION
Green HRM	GHRM_1	0,719	Accapted
	GHRM_2	0,865	Accapted
	GHRM_3	0,853	Accapted
	GHRM_4	0,880	Accapted
	GHRM_5	0,724	Accapted
	GHRM_6	0,814	Accapted
	GHRM_7	0,817	Accapted
Green Innovation	GI_1	0,766	Accapted
	GI_2	0,799	Accapted
	GI_3	0,803	Accapted
	GI_4	0,867	Accapted
	GI_5	0,852	Accapted
	GI_6	0,818	Accapted
	GI_7	0,810	Accapted
Green Motivation	GM_1	0,842	Accapted
	GM_2	0,817	Accapted
	GM_3	0,746	Accapted
	GM_4	0,839	Accapted
	GM_5	0,819	Accapted
	GM_6	0,847	Accapted
Environmental Performance	KL_1	0,896	Accapted
	KL_2	0,900	Accapted
	KL_3	0,924	Accapted
	KL_4	0,823	Accapted
	KL_5	0,903	Accapted

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In addition, Table 2 displays the Average Variance Extracted (AVE) values for all constructs, each exceeding the minimum threshold of 0.50. These results further support the presence of strong convergent validity among the constructs. Specifically, the AVE value for Environmental Performance is 0.792, indicating a particularly high level of shared variance among its indicators and thus a robust degree of convergent validity.

Table 2. Average Variance Extracted (AVE) Result

VARIABLE	AVERAGE VARIANCE EXTRACTED (AVE)
01_ <i>Green HRM</i>	0,660
02_ <i>Green Innovation</i>	0,667
03_ <i>Green Motivation</i>	0,671
04_ <i>Environmental Performance</i>	0,792

B. DISKRIMINANT VALIDITY TEST

Table 3. Fornell-Larcker Criterion Result

Keterangan	01_ <i>Green HRM</i>	02_ <i>Green Innovation</i>	03_ <i>Green Motivation</i>	04_ <i>Environmental Performance</i>
01_ <i>Green HRM</i>	0,813			
02_ <i>Green Innovation</i>	0,703	0,817		
03_ <i>Green Motivation</i>	0,764	0,642	0,819	
04_ <i>Environmental Performance</i>	0,826	0,712	0,760	0,890

Discriminant validity assesses the extent to which different constructs in a measurement model are distinct and do not share significant variance. This was tested using the Fornell-Larcker Criterion by comparing the square root of the Average Variance Extracted (AVE) for each construct with the correlations between constructs. As shown in Table 3, all constructs exhibited higher AVE square roots than their inter-construct correlations, indicating strong discriminant validity. the AVE square root for Green HRM (0.813) was higher than its correlation with Green Innovation (0.703), Green Motivation (0.764), and Environmental Performance (0.826). Likewise, Green Innovation (0.817), Green Motivation (0.819), and Environmental Performance (0.890) also showed greater AVE values than their correlations with other constructs. These results affirm that each construct is empirically distinct and measured reliably by its corresponding indicators.

Table 4. Heterotrait-Monotrait Ratio (HTMT) Result

Keterangan	01_ <i>Green HRM</i>	02_ <i>Green Innovation</i>	03_ <i>Green Motivation</i>	04_ <i>Environmental Performance</i>
01_ <i>Green HRM</i>				
02_ <i>Green Innovation</i>	0,758			
03_ <i>Green Motivation</i>	0,837	0,689		
04_ <i>Environmental Performance</i>	0,894	0,754	0,820	

Furthermore, the Heterotrait-Monotrait Ratio (HTMT) test was conducted to confirm discriminant validity, with results summarized in Table 4. All HTMT values among constructs were below the recommended threshold of 0.90, supporting strong discriminant validity. For instance, the HTMT values between Green HRM and Green Innovation, Green Motivation, and Environmental Performance were 0.758, 0.837, and 0.894, respectively. Similarly, HTMT values between Green Innovation and other variables ranged from 0.689 to 0.754, and between Green Motivation and Environmental Performance it was 0.820. These findings confirm that the constructs in the study are well-differentiated and that their indicators accurately represent distinct

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latent variables in the model.

C. RELIABILITY TEST RESULT

Table 5 presents the results of the reliability test using both Cronbach's Alpha and Composite Reliability methods. The findings indicate that all constructs in this study—Green HRM, Green Innovation, Green Motivation, and Environmental Performance—achieved Cronbach's Alpha and Composite Reliability values above the recommended threshold of 0.70. These results demonstrate that each construct possesses a high level of internal consistency, confirming that the measurement instruments used in this study are reliable.

Table 5. Reliability Test Result

Variable	Cronbach's Alpha	Composite Reliability	Decision
01_ Green HRM	0,913	0,931	Reliable
02_ Green Innovation	0,917	0,933	Reliable
03_ Green Motivation	0,902	0,924	Reliable
04_ Environmental Performance	0,934	0,950	Reliable

D. R SQUARE TEST RESULT

Table 6. R Square Test

Variable	R Square	R Square Adjusted
02_ Green Innovation	0,494	0,490
03_ Green Motivation	0,584	0,581
04_ Environmental Performance	0,742	0,736

Table 6 shows the results of the R-Square test (coefficient of determination) conducted through SmartPLS 3.2.9 analysis. Based on these results, the variables Green Innovation, Green Motivation, and Environmental Performance have good predictive ability, especially for the Environmental Performance variable which is classified as strong (>0.67), and Green Innovation and Green Motivation which are classified as moderate (>0.33 to ≤ 0.67). Overall, these results indicate that this research model is quite effective in explaining the influence between the variables studied.

E. PREDICTIVE RELEVANCE (BLINDFOLDING) RESULT

Table 7. R Square Test

Variable	SSO	SSE	Q ² (=1-SSE/SSO)
01_ Green HRM	882,000	882,000	
02_ Green Innovation	882,000	606,376	0,312
03_ Green Motivation	756,000	472,899	0,374
04_ Environmental Performance	630,000	263,765	0,581

Based on table 7, Green Innovation has a Q² value of 0.312, Green Motivation has a Q² value of 0.374, and Environmental Performance has a Q² value of 0.581. Since all of these Q² values are greater than zero, it can be concluded that this research model has good predictive relevance.

F. HYPOTHESIS TESTING

Table 8. Path Coefficients Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Ket
01_ Green HRM -> 04_ Environmental Performance	0,484	0,493	0,078	6,184	0,000	Didukung

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Green Human Resource Management (Green HRM) on Environmental Performance

The structural model analysis confirms that Green HRM has a significant and positive influence on environmental performance, with a path coefficient of 0.484, a t-statistic of 6.184, and a p-value of 0.000, thus supporting the first hypothesis. This suggests that companies implementing Green HRM practices are more likely to achieve enhanced environmental outcomes. The highest-rated item in the descriptive analysis reflects employees' strong agreement that the organization sets environmentally supportive goals—an indicator of the firm's deep commitment to sustainability values. These findings align with prior studies that highlight the role of Green HRM in improving environmental performance through the integration of green values in HR policies and practices (Fang et al., 2022; Renwick et al., 2013). As noted by Roscoe et al. (2019), such practices lead to waste reduction and operational efficiency, while Gilal et al. (2019) emphasize that green-based training, rewards, and performance evaluations foster ecological performance. Moreover, Green HRM at PT PLN NP UP Sebalang demonstrates substantial alignment with the Ability-Motivation-Opportunity (AMO) framework, wherein training (ability), green-oriented incentives (motivation), and participatory opportunities (opportunity) collectively empower employees to contribute effectively to environmental goals.

Table 9. Specific Indirect Effect Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
01_Green HRM -> 02_Green Innovation -> 04_ Environmental Performance	0,145	0,137	0,055	2,654	0,008	Accepted
01_Green HRM -> 03_Green Motivation -> 04_ Environmental Performance	0,196	0,196	0,053	3,672	0,000	Accepted

The Mediating Role of Green Motivation in the Relationship between Green HRM and Environmental Performance

The second hypothesis, which tests the mediating role of green motivation, is also supported by the structural model. The indirect path coefficient of 0.196, a t-statistic of 3.672, and a p-value of 0.000 indicate a significant mediation effect. These results imply that while Green HRM directly impacts environmental performance, it also indirectly contributes through enhanced green motivation among employees. The highest mean score (4.159) in the descriptive analysis supports the notion that corporate environmental initiatives enhance the organization's reputation, which in turn bolsters employees' intrinsic motivation to engage in sustainable practices. This finding is consistent with Renwick et al. (2013), who argue that green performance appraisals and rewards can drive pro-environmental behavior, and with Singh et al. (2020), who emphasize the mediating role of green motivation in strengthening the Green HRM–performance nexus. Partial mediation, confirmed by both significant direct and indirect effects (Hair et al., 2017), suggests that motivation not only complements but also enhances the impact of Green HRM practices on environmental outcomes. From the AMO perspective, motivation stimulated by green training, rewards, and evaluations serves as a catalyst for sustainable behavior, leading to improved organizational environmental performance.

The Mediating Role of Green Innovation in the Relationship between Green HRM and Environmental Performance

The third hypothesis, testing the mediating effect of green innovation, is supported by an indirect path coefficient of 0.145, a t-statistic of 2.654, and a p-value of 0.008. These results confirm the partial mediation effect of green innovation, which complements the direct influence of Green HRM on environmental performance. Descriptive findings show that the use of low-emission raw materials, such as biomass and biodiesel, received high agreement from respondents (mean = 4.040), highlighting the successful operationalization of green innovations. These innovations—spanning sustainable materials and environmentally friendly products—demonstrate the transformative potential of Green HRM when paired with innovation-oriented implementation. This finding echoes the conclusions of Rehman et al. (2021), who assert that environmental performance improvements stem not only from awareness and policy but also from the organization's capacity for eco-innovation. Under the Resource-Based View (RBV), green innovation represents a firm capability shaped by sustainable HR practices, while within the AMO framework, it emerges from the synergy of ability, motivation, and opportunity. Thus, green innovation acts as a crucial conduit that translates HRM strategies into tangible ecological impact.

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CONCLUSIONS

Based on the analysis and discussion of the research findings, this study affirms all proposed hypotheses. It provides empirical evidence that Green Human Resource Management (Green HRM) has a positive and significant effect on environmental performance. Moreover, both Green Motivation and Green Innovation are found to partially mediate the relationship between Green HRM and environmental performance. These results highlight the critical role of environmentally focused HR practices in driving organizational sustainability outcomes, demonstrating that internal mechanisms such as motivation and innovation act as pathways through which HR practices influence broader environmental goals.

In light of these findings, several recommendations can be made for organizations seeking to enhance their environmental performance. Companies are encouraged to deepen the implementation of Green HRM practices, such as environmentally oriented training, compensation, and promotion systems. It is also advisable to integrate environmentally friendly performance indicators, such as energy efficiency and waste reduction, into individual employee evaluations. Enhancing green innovation through internal competitions and investment in sustainable technology and energy management systems can also drive progress. Furthermore, organizations should foster Green Motivation by recognizing and rewarding employees or teams that contribute to eco-friendly initiatives. This can be achieved through bonuses, promotions, or formal acknowledgments that reinforce pride in sustainability achievements.

Nonetheless, the study is not without limitations. The scope of the research was confined to a specific sector, limiting generalizability. Future research should expand the sample to include various industries, such as manufacturing or banking, to provide a cross-contextual understanding of Green HRM effectiveness. Additionally, the inclusion of other relevant variables—such as Green Transformational Leadership—could enrich the conceptual model and offer a more comprehensive explanation of the mechanisms linking HRM practices to environmental performance.

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