Research Paper

Green HRM and Environmental Performance in Hospitality Sector: The Roles of Employee Innovation and Environmental Regulation

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Received: January 25, 2025	Revised: September 12, 2025	Accepted: September 15, 2025	Online: January 31, 2026

Abstract

Human resources are crucial to an organization's environmental success. Green HRM practices and green innovative work behavior provide a foundation for enterprises to manage their environmental performance effectively. This study aims to promote environmentally conscious green HRM and innovative work behavior to enhance the environmental performance of hospitality sector firms in Salatiga through the role of environmental regulation as a moderator. The number of samples is 271 employees in the hospitality sector. Additionally, data collection was conducted via a survey, and the analysis tool used was partial least squares-based mediating and moderating structural equation modeling. The result showed that in the hospitality sector, Green Innovative Work Behavior (GIWB) acts as a crucial mediator between Green Human Resources Management (GHRM) and environmental performance. Furthermore, environmental regulation moderates the relationship between Green Human Resources Management (GHRM), Green Innovative Work Behavior (GIWB), and environmental performance in the hospitality sector. When environmental regulations are stringent, they strengthen the impact of GHRM on GIWB, leading to enhanced environmental performance. Enhancing GHRM practices to foster GIWB can be crucial for achieving compliance and excelling in environmental performance. Even in less regulated environments, organizations can use GHRM to foster a culture of innovation that anticipates future regulatory changes, ensuring they remain ahead of the curve in environmental sustainability.

Keywords *Green Human Resources Management; Green Innovative Work Behavior; Environmental Performance; Environmental Regulation; Sustainability*

INTRODUCTION

The implementation of the sustainable development paradigm in the industry has fundamentally transformed companies' daily operations, especially regarding the environmental dimension. Corporate social development has become a crucial corporate strategy focused on meeting the needs of business stakeholders while preserving resources and promoting the local community's well-being. As defined by Chow and Chen (2012), corporate social development refers to the degree to which firms incorporate social, economic, and environmental development into their operational strategies. Environmental performance (EP) is one of the components of corporate sustainability development. EP is a strategic organizational goal aimed at managing operations to ensure that final products have minimal environmental impact—encompassing land, air, and water—while also reflecting the organization's effectiveness and efficiency in addressing environmental issues and resource management (Ong et al., 2019). Environmental performance also refers to an organization's efficacy and efficiency in managing environmental issues and resources. This encompasses the organization's ability to reduce environmental impact, generate less waste, conserve resources, and operate sustainably (Aggarwal & Agarwala, 2023; Helander et al., 2019). GHRM is one factor that may influence an organization's environmental performance. Prior research indicates that implementing GHRM practices provides an effective framework for efficiently managing an organization's environmental impacts, resulting in enhanced environmental performance (Islam et al., 2021; Roscoe et al., 2019).

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GHRM promotes environmentally friendly behavior among employees, contributing to waste reduction, social responsibility, and the development of competitive advantage through sustainable learning and the implementation of environmental strategies (Aboramadan et al., 2022). Hence, the human resource's function performs a crucial role in determining an organization's performance in addressing environmental concerns. Implementing GHRM practices is the most effective approach for achieving positive environmental performance. These practices establish a foundational framework that enables firms to effectively handle their environmental impact (Yusoff et al., 2018). GHRM is a strategic strategy that incorporates environmental sustainability into several human resources roles and practices inside an organization. The objective is to ensure that human resource management operations are in accordance with environmental sustainability concepts, including reducing carbon footprints, minimizing waste, conserving resources, and promoting environmentally friendly practices (Aboramadan, 2022; Dumont et al., 2017; Suharti & Sugiarto, 2020). Furthermore, the practice of GHRM is crucial for enhancing organizational performance, thereby requiring the ability to improve sustainability in this field (Yusoff et al., 2018).

Organizations can foster a culture that supports sustainable, environmentally friendly, innovative behavior by adopting a holistic, innovation-focused GHRM approach. This not only improves the environment, but it also has the potential to boost organizational performance and business reputation over time. Previous research has found that GHRM practices can promote pro-environmental behavior among employees, leading to the establishment of environmentally friendly innovative work behavior (Saeed et al., 2019). Then, Aboramadan (2022) applied social exchange theory to offer a model that investigates the impact of GHRM on environmentally friendly innovative work behavior, emphasizing the relevance of employee engagement and creativity in supporting environmentally friendly activities. Employees can use GIWB to raise environmental consciousness within the organization. This can motivate all organization members to embrace sustainable practices, improving overall environmental performance. Hence, Pham et al. (2020) suggest that more study is needed to investigate the impact of GHRM practices on environmentally friendly employee work behavior, employee satisfaction, innovative behavior, and employee attrition.

In addition to internal factors, external factors significantly impact increasing environmental performance, according to Ramanathan et al. (2017). Environmental rules play a vital role in determining environmental performance in businesses. Ramanathan et al. (2017) found that organizations that respond innovatively to environmental regulations are likely to achieve better environmental performance, underscoring the need for a dynamic strategy and resource allocation to realize these advantages. In keeping with this opinion, the findings of Qiu and Wang's (2020) study reveal that in order to improve a company's environmental performance, external help is required, one of which is government environmental regulation (ER). ER is a government regulation that prevents enterprises from operating through administrative legislation, market processes, and environmental preservation propaganda. This legislation protects the ecological environment through mandatory and informal regulations. Thus, environmental rules significantly impact the development and improvement of an organization's environmental performance by establishing standards, promoting innovation, and shaping public perceptions of corporate environmental responsibility.

When analyzed within the current industrial sector, the hospitality industry, which includes hotels, travel and tourist attractions, and food and beverage businesses, is identified as a significant contributor to environmental damage. The adverse consequences of the hospitality industry include the accumulation of vast quantities of waste, encompassing food waste, plastic, and paper waste. Consequently, the issue of environmental crises, particularly within the

hospitality sector, necessitates urgent consideration. This study focuses on the hospitality business in Salatiga City, Central Java Province. According to the salatiga.go.id page, Salatiga, as a gastronomic city, is dealing with environmental issues, particularly in the hospitality sector, specifically waste, so the implementation of GIWB and improving environmental performance in this sector is required to reduce the impact of environmental damage. The research will be carried out in Salatiga City, focusing on workers employed in the hospitality industry as research participants. The hospitality industry was selected for its significant contribution to environmental degradation, including the generation of food waste, plastic waste, and paper trash. Statistical data from BPS indicates that in 2023, Salatiga City had 38 hotels and 339 eateries. The hospitality industry has a workforce capacity of around 1,341 employees.

This study aims to explore the influence of Green Human Resource Management (GHRM) on Environmental Performance within the hospitality sector in Salatiga. Specifically, it investigates whether GHRM practices directly enhance environmental outcomes and how they may foster Green Innovative Work Behavior (GIWB) among employees. Furthermore, the research examines the potential mediating role of GIWB in the relationship between GHRM and Environmental Performance. Recognizing the importance of external factors, the study also considers how Environmental Regulation might moderate the effects of both GHRM and GIWB on Environmental Performance. By addressing these interrelated questions, the research seeks to provide a comprehensive understanding of the mechanisms through which internal organizational practices and external regulatory frameworks collectively impact environmental sustainability in the hospitality industry. Furthermore, the future growth of the hospitality industry should prioritize environmental sustainability, emphasizing green investment and the necessity of highly skilled human resources as key drivers of success. The significance of this study lies in its potential to help firms overcome environmental challenges, comply with regulations, and ensure long-term sustainability by enhancing their environmental performance.

LITERATURE REVIEW

Green Human Resources Management

GHRM is a modern management strategy that incorporates environmental considerations into human resources practices within organizations. GHRM is a comprehensive management system designed to foster sustainable organizational development. It employs HRM measures, including green recruitment, training, and performance, to establish environmentally favorable values for all employees, as per Pham et al. (2020). This entails the conversion of employees into environmentally conscious individuals who are actively engaged in the pursuit of environmental sustainability objectives (Liu et al., 2021). GHRM encompasses a variety of activities, including recruitment, selection, training, development, motivation, and performance evaluation, all designed to cultivate an environmentally favorable organizational culture and enhance environmental outcomes (Hooi et al., 2022). Islam et al. (2021) suggest that GHRM requires organizations to incorporate environmental management concepts into their HRM processes to enhance environmental outputs and achieve their strategic environmental objectives. Concurrently, Tang et al. (2018) asserts that GHRM is a comprehensive management system that endeavors to attain sustainable development for the organization. It implements HRM measures, including green recruitment, green training, and green performance, to cultivate green values among all employees.

Several foundational studies have established the link between GHRM and EP. Jabbour and Santos (2008) were among the first to examine how HRM practices influence environmental management within organizations. They emphasized that integrating green HR initiatives, such as training, employee involvement, and environmental awareness programs, can significantly

enhance environmental performance by fostering pro-environmental behaviors among employees. Expanding on this foundation, Renwick et al. (2013) provided a comprehensive framework for GHRM, categorizing it into three key areas: green recruitment and selection, which focuses on hiring employees with sustainability values; green training and development, which enhances employees' environmental knowledge; and green performance management and rewards, which link environmental achievements to incentives. Their study highlighted the critical role of HRM in embedding sustainability into organizational culture, ultimately driving environmental performance. These works laid the theoretical groundwork for understanding the mechanisms by which HRM strategies contribute to environmental sustainability, influencing subsequent research on the long-term, industry-specific, and cross-cultural applications of GHRM to improve environmental outcomes.

Traditional HRM approaches associated with environmental goals and strategic HRM are still used in GHRM (Novianti & Rumijati, 2023). Aggarwal and Agarwala (2023) believe GHRM initiatives can boost employee loyalty. Company personnel are more inclined to accept environmentally beneficial and sustainable activities if they are environmentally conscious. If these employees participate in environmentally beneficial initiatives that meet their social and psychological requirements to safeguard the environment, their commitment to the company will rise (Pham et al., 2020); Renwick et al., 2013) list four components of GHRM: developing environmentally friendly capabilities (recruitment and selection, training and development, job descriptions); motivating environmentally friendly employees (performance management/appraisal; salary and reward systems); and providing environmentally friendly opportunities.

The relationship between GHRM and EP has been widely studied, but several research gaps remain. First, the mechanisms linking GHRM to EP, such as the roles of employee engagement, green organizational culture, and sustainability-oriented leadership, and green innovative work behavior, are not well understood. Second, most research focuses on large corporations and manufacturing industries, while the impact of GHRM on service sectors like hospitality and SMEs remains underexplored. Third, studies often lack cross-cultural perspectives, particularly in developing countries, where regulatory and institutional factors may shape this relationship differently.

Green Innovative Work Behavior

The notion of GIWB is based on the concept of creative work behavior (Putra et al., 2024; Scott & Bruce, 2018), which defines employee behavior that includes idea generation, promotion, and implementation in the workplace. GIWB is an employee's physical and cognitive work behavior aimed at researching, promoting, and implementing environmentally friendly ideas in the workplace (Aboramadan et al., 2022). Several prior studies have found that inventive work behavior is an important component in businesses to boost competitive advantage, innovation, and long-term sustainability (Bos-Nehles et al., 2017; Hosseini & Haghighi Shirazi, 2021; Muchiri et al., 2020). With the development of environmental-based management and green HRM, environmental management has been applied to innovative work behavior, resulting in the definition of GIWB as employee behavior aimed at producing, promoting, and implementing environmentally friendly ideas (Aboramadan et al., 2022). According to another research result (Wang et al., 2021), GIWB refers to the development and implementation of new and helpful ideas that have an ecologically friendly impact on the organization's products, services, processes, and practices. Because GIWB is a relatively new concept in the field of green HRM, there has been little research into it.

Environmental Performance

A company's EP is a measure of its environmental capabilities achieved through environmental initiatives (Ong et al., 2019). Environmental performance refers to the assessment of an organization's activities and results concerning environmental sustainability and environmental accountability. Corporate environmental management refers to the evaluation of a company's ability to handle its environmental effects effectively, adhere to rules, and adopt eco-friendly measures. EP refers to the assessment of an organization's activities and results concerning environmental sustainability and accountability (Aftab et al., 2023). The significance of assessing environmental performance through certain systems and indicators has been emphasized in several studies. Now, virtually all industries are adopting strategic environmental performance plans to achieve a competitive edge (Aggarwal & Agarwala, 2023).

Hence, in response to the growing societal expectations for environmental outcomes, companies are adopting strategic environmental management practices to enhance their competitiveness. Consequently, the number of organizations incorporating and advancing the notion of environmental performance into their business strategies is on the rise (Wang, 2019). Certain stakeholders maintain the belief that environmentally conscientious organizations incur high costs. Nevertheless, certain stakeholders retain the belief that consumers and capital markets highly appreciate environmentally sustainable enterprises. Consequently, they argue that enhancing environmental performance should improve business performance (Sihombing & Murwaningsari, 2022). Furthermore, the proliferation of environmental regulations and market demands has heightened the consciousness of organizational and managerial stakeholders on environmental performance. Drawing on the preceding discussion, the significance of environmental performance is regarded as a favorable prospect for enhancing the competitiveness of firms in a mutually beneficial scenario by integrating environmental performance concerns into corporate strategies and implementing innovation.

Hypotheses Development

The Relation of Green Human Resources Management and Environmental Performance

Several environmental performance indicators have been studied. Previous research on financial reporting's environmental disclosure has shown that these statistics reveal an organization's exposure to green rules and activities on environmental performance (Aftab et al., 2023). Others show that systematic risk, price-earnings ratio, and scale affect environmental performance (Ramanathan et al., 2017). The management strategy of adopting GHRM techniques to improve environmental performance is examined by Pramudita and Gunawan (2023). A management strategy is crucial for studying the relationship between environmental and economic performance, according to Pramudita and Gunawan (2023). Critical boundary conditions include system modifications to environmental performance programs and infrastructure to lower the organization's environmental effect and employee responses (Tang et al., 2018). Organizations are also employing employee behavioral modification to reduce energy, water, and greenhouse gas emissions, increase recycling, and increase energy use through public transit. To improve the company's environmental performance, GHRM combines green practices with human resource management. GHRM creates a work climate that supports sustainability goals and steers the company toward greener operations. Therefore, the two are closely related. GHRM can help firms reduce carbon footprints, enhance waste management, and use resources more efficiently, improving their environmental performance (Pham, et al., 2020). The hypothesis that can be formulated from the previous explanation is as follows:

H_1: Green human resources management positively influences the environmental performance of hospitality companies in Salatiga City.

The Relation of Green Human Resources Management and Green Innovative Work Behavior

Interactions between GHRM and GIWB are crucial for organizational sustainability. GHRM prioritizes employee growth by implementing training and development initiatives that specifically target environmental practices. These initiatives aim to enhance employee awareness and understanding of environmental concerns. GHRM promotes the cultivation of imaginative and groundbreaking concepts that align with the environmental objectives of the organization (Aboramadan, 2022). In addition, the inclusion of a reward and incentive system within GHRM can effectively encourage employees to engage in creative initiatives that promote sustainability. As an illustration, providing incentives to employees who innovate and devise novel, ecologically sustainable procedures or who minimize corporate waste (Aggarwal & Agarwala, 2023). According to Anwar et al. (2020), GHRM contributes to establishing an organizational culture that emphasizes innovation and sustainability. Furthermore, via the establishment of a professional atmosphere that appreciates novel and inventive environmental concepts, GHRM promotes the manifestation of GIWB among personnel (Saeed et al., 2019). Implementing GHRM principles, such as employee engagement in environmental decision-making and the establishment of green teams, fosters cooperation and active participation in Green Industrial Water Management. There is a positive correlation between employees who perceive themselves as being heard and engaged and their motivation to provide new ideas. Therefore, by providing ongoing training and development specifically targeted at green skills, GHRM guarantees that staff possess the necessary abilities to create and execute creative solutions that promote sustainability (Wang, 2019). Based on this explanation, the hypothesis that can be derived is:

H_2: The Green Innovative Work Behavior of companies in the hospitality sector in Salatiga City is positively impacted by Green Human Resources Management.

The Mediating Role of Green Innovative Work Behavior

GIWB can mediate the impact of GHRM on environmental performance. GHRM encompasses a variety of practices, including incentives for innovative behaviour, environmentally-based performance appraisals, green recruitment, and green training and development. The objective of these practices is to enhance employee motivation, awareness, and skills in implementing and supporting environmental initiatives (Wang, 2019). Subsequently, the implementation of GHRM results in employees becoming more informed and motivated to engage in environmentally friendly innovative work behaviours. For instance, green training is implemented to enhance employees' competence in the environmental sector, while incentives encourage active participation in developing innovative solutions that promote sustainability. Innovative and proactive employee activities are incorporated into GIWB to identify novel ways to enhance resource efficiency and mitigate negative environmental impacts. Employees are considerably more inclined to generate and execute substantial innovations in environmentally favourable operational procedures when they participate in GIWB (Aboramadan, 2022; Song et al., 2020). The implementation of more efficient resource management strategies, the development of new green technologies, and the enhancement of work processes to reduce emissions and pollution are all potential innovations that could result from GIWB. Consequently, GIWB serves as a critical link between GHRM practices and improved environmental performance outcomes, guaranteeing that environmentally focused HRM policies and practices are translated into tangible actions that enhance corporate sustainability and environmental performance. Based on this explanation, the hypothesis that has been developed is as follows:

H_3: The environmental performance of companies in the hospitality sector in Salatiga City is influenced by Green Innovative Behavior.

H_4: GHRM influences the environmental performance of companies in the hospitality sector in Salatiga City through the mediation of Green Innovative Behavior.

The Moderating Role of Environmental Regulation

Environmental regulation can moderate the impact of GHRM and GIWB on environmental performance. Strict environmental regulations can improve the efficiency of GHRM by pushing businesses to be more serious about implementing environmentally conscious practices (Qiu & Wang, 2020; Ramanathan et al., 2017). When environmental restrictions get stronger, companies are more inclined to embrace and implement GHRM practices more broadly in order to comply with regulations and avoid punishment. Strict environmental regulations can help raise staff understanding and dedication to the organization's environmental aims. Employees may feel more accountable and encouraged to participate in GIWB when they understand that the organization must adhere to severe environmental rules (Suharti & Sugiarto, 2020). Companies may face pressure to discover inventive solutions to comply with rigorous environmental standards while maintaining operational efficiency. This can motivate staff to be more proactive and creative in producing innovative green solutions, enhancing the partnership between GHRM and GIWB. Strict environmental rules are frequently complemented by incentives for green innovation, such as subsidies, tax breaks, or recognition for ecologically beneficial company activities. This incentive can encourage employees to participate in GIWB, increasing the impact of GHRM. In a rigorous regulatory environment, businesses may be more likely to devote more resources to environmental initiatives, such as employee training and development. This added help may improve employees' ability to participate in GIWB. Environmental legislation mitigates the impact of GIWB on EP by increasing incentives, commitment, and available resources for green innovation. Strict regulation can focus companies' and employees' efforts on meeting and exceeding established environmental standards, strengthening the link between GIWB and environmental performance (Chow & Chen, 2012; Novianti & Rumijati, 2023; Sihombing & Murwaningsari, 2022; Wang, 2019). Based on this explanation, the formulated hypothesis is:

H_5: Environmental regulation moderates the impact of GHRM on the environmental performance of hospitality enterprises in Salatiga City.

H_6: Environmental regulation moderates the mediating influence of GIWB on the environmental performance of hospitality enterprises in Salatiga City.

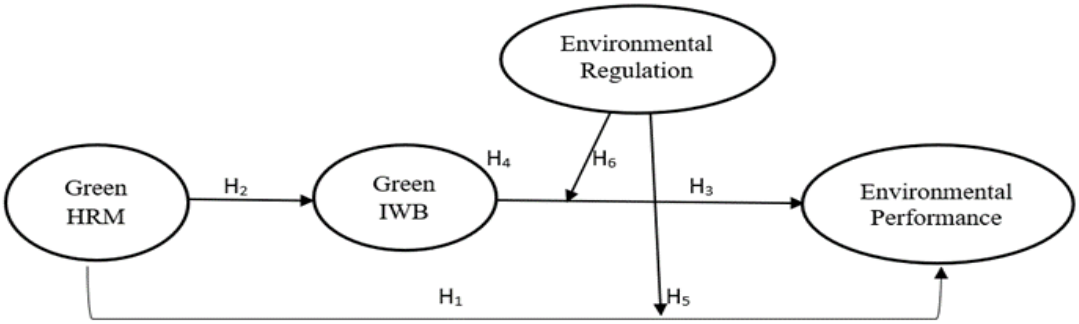

Figure 1. Conceptual framework

RESEARCH METHOD

This research was conducted in Salatiga, where hospitality industry employees served as research participants. In 2024, Salatiga City had 38 hotels and 339 restaurants, as indicated by BPS data. This sector contributed approximately 7.76% of Salatiga City's economic structure and experienced a 10% increase from the previous year. The hospitality sector can take on

approximately 1,341 employees, the number of samples. Therefore, the Slovin formula determined a sample size of 308. Although the Slovin formula determined a required sample size of 308 for purposive sampling, the final number of respondents was 271 employees from the hospitality sector. This discrepancy is due to some potential participants declining to participate and others not responding to the survey. The data were collected through a survey questionnaire with closed-ended responses ranging from strongly agree to strongly disagree (scale 1-4). The questionnaire was created following the design of the research variables. According to Pham and Hoang (2020), GHRM was measured using 16 items adapted from Pham et al. (2020), which covered four categories: Green recruitment and selection, Green training and development, Green performance appraisal, and Green compensation. Aboramadan (2022) adopts a measurement that determines GIWB by evaluating the intention of fostering friendly ideas and innovations towards the environment, funding them, making detailed plans for them, and innovating with the environment in mind. For EP, Aftab (2023) indicators were applied to measure performance, including averting workplace air pollution, saving water, reducing waste, curbing the use of hazardous materials, reducing workplace accidents, and improving workplace health. Furthermore, environmental regulation was assessed using the indicators proposed by Ramanathan et al. (2017), which include factors such as the company's generation of waste or pollution, the existence of company policies regarding hazardous materials or plastics, government regulations on environmental conservation, and the enforcement of sanctions for environmental violations. The collected answers from respondents achieved a response rate of approximately 87.8%.

The analysis tool that will be used is mediating and moderating Structural Equation Modeling with (PLS) Structural Equation Modeling (SEM) is used to test the correlation between constructs with the Partial Least Squares (PLS) approach. PLS was chosen because it is the right method for small sample sizes and in models with more complex causality (Dibbern et al., 2010). PLS consists of three sets of relationships: (1) inner model, (2) outer model, and (3) weight relation.

FINDINGS AND DISCUSSION

Table 1 presents the demographic distribution of respondents based on gender. The results show that 142 respondents (52.4%) were male, while 129 respondents (47.6%) were female. This relatively balanced proportion indicates that the perspectives captured in the study are represented by male and female respondents almost equally, minimizing potential gender bias in the findings.

Table 1. Characteristics of Respondents (Gender)

Characteristics	Amount	Percentage
Male	142	52.4
Female	129	47.6

Table 2. Characteristics of Respondents (Business Sector)

Characteristics	Amount	Percentage
Hotels	112	41.3
Restaurants	159	58.7

Table 2 illustrates the distribution of respondents based on business sector. The majority of respondents, 159 employees (58.7%), were engaged in the restaurant sector, while 112 respondents (41.3%) operated in the hotel sector. This distribution suggests that the study sample is more heavily represented by restaurants, which may influence the interpretation of

results, particularly regarding sector-specific practices and environmental performance.

Table 3. Questionnaire Measurement Value

Score	Lower limit	Interval	Upper limit	Description
1	1.00	0.75	1.74	Strongly disagree
2	1.75	0.75	2.49	Disagree
3	2.5	0.75	3.24	Agree
4	3.25	0.75	4.00	Strongly agree

Table 3 outlines the measurement scale used in the questionnaire. Scores between 1.00–1.74 are categorized as "Strongly Disagree," 1.75–2.49 as "Disagree," 2.50–3.24 as "Agree," and 3.25–4.00 as "Strongly Agree." This scale provides a clear basis for interpreting participants' average responses.

Table 4. Descriptive Statistic Output

Variables	Mean	Min	Max	St. Deviation	Result
Green HRM	3.22	1	4	0.4812	Agree
Green IWB	2.65	1	4	0.7025	Agree
Environmental Regulation	2.78	1	4	0.6679	Agree
Environmental Performance	2.91	1	4	0.5896	Agree

Table 4 presents the descriptive analysis results of the four research variables, including mean, minimum, maximum, and standard deviation. The findings indicate that all variables achieved average scores within the "Agree" category, suggesting respondents generally held favorable perceptions of the measured constructs. The Green HRM variable obtained the highest mean score of 3.22, emphasizing its crucial contribution to enhancing environmental performance. This implies that employees and managers recognize the importance of environmentally oriented HR practices in fostering sustainability and improving organizational ecological outcomes.

At the same time, the two factors with the lowest mean scores were Green IWB (2.65) and Environmental Regulation (2.78), indicating that pro-environmental innovative behaviors among employees and compliance with environmental regulations are still relatively limited and require further improvement. Green IWB also recorded the largest standard deviation (0.7025), reflecting substantial variation in respondents' perceptions, which may stem from differences in organizational culture, individual awareness, and prior experience with sustainability initiatives. The mean score for Environmental Performance was 2.91, suggesting that organizations generally assessed their ecological outcomes as moderate but relatively positive. These findings imply that while Green HRM has been effective in supporting sustainability, stronger efforts are still needed to stimulate innovative green behaviors and ensure compliance with environmental regulations to optimize overall environmental performance.

Outer Model Analysis

The structural model findings in Figure 1 indicate that the resulting Structural Equation Modeling (SEM) model has successfully passed the rigorous model quality test. Variance Inflation Factor (VIF) is used to assess multicollinearity among predictor variables. The VIF value from the analysis is below 5. The result indicates that multicollinearity is not a concern, meaning the model is free from collinearity issues. Several indicators from GHRM and EP were eliminated from the original model due to their failure to meet the criteria for validity and reliability. After retesting, a valid and reliable Structural Equation Modeling (SEM) model was obtained, as depicted in the figure that follows.

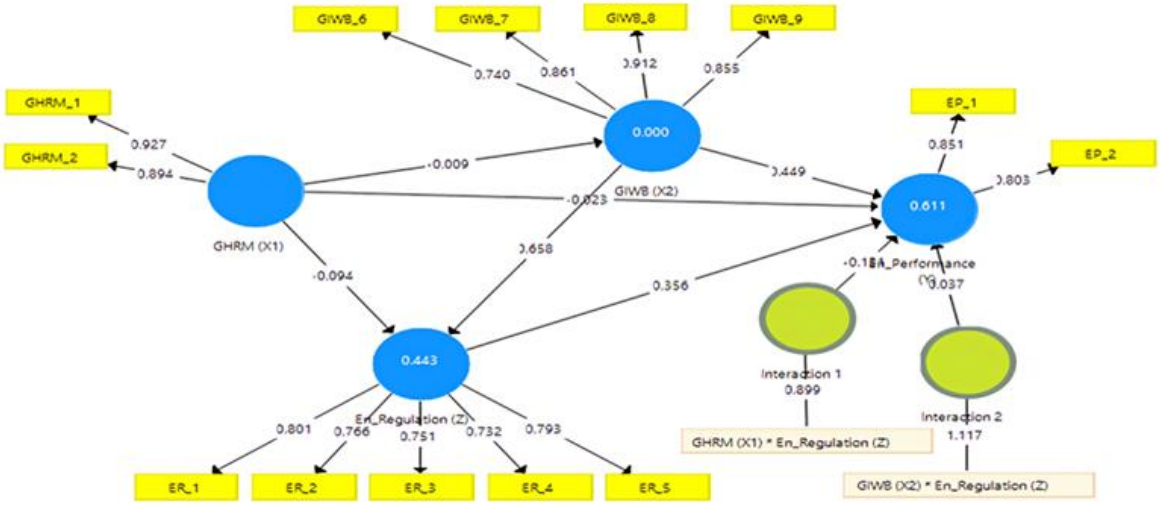

Figure 2. Structural Research Model

Figure 2 demonstrates how factor loading indicates convergent validity. The factor loading of each latent variable is more than 0.70. Additionally, the outcomes of the tests for convergent validity and reliability are presented in Table 5. The outer loadings and Average Variance Extracted (AVE) values indicate convergent validity, while the Cronbach's alpha and composite reliability measures indicate reliability. Elaborately, the test results are presented in the subsequent table:

Table 5. Validity and Reliability Test

Variables	Cronbach Alpha	Rho_A	Composite Reliability	AVE
GHRM	0.795	0.813	0.906	0.829
GIWB	0.866	0.891	0.908	0.713
Env. Regulation	0.829	0.844	0.879	0.591
Env. Performance	0.742	0.848	0.813	0.685

Each variable has an average variance extracted (AVE) exceeding 0.5. Consequently, it is possible to conclude that all variables exhibit robust convergent validity. Reliability testing was implemented to evaluate the internal consistency of the measuring instrument, as illustrated in Table 1. The composite reliability value was compared to the Cronbach alpha value, which must be greater than 0.7, to conduct the reliability test. The composite reliability value of each variable was also greater than 0.6, and the Cronbach alpha values for each research variable were all greater than 0.7. Consequently, the variable measurement instrument employed in this study is reliable. The sample mean of 0.231 represents the average path coefficient derived from multiple bootstrapped subsamples, demonstrating consistency in the estimated effect. The standard deviation is 0.028, indicating minimal variation and suggesting that the bootstrapped estimates are tightly clustered around the mean, enhancing the reliability of the results.

Table 6. Heterotrait Monotrait Ratio (HTMT)

Variables	EP	ER	GHRM	GIWB
Environmental Performance				
Environmental Regulation	0,998			

Variables	EP	ER	GHRM	GIWB
Green HRM	0.219	0.119		
Green IWB	0.012	0.748	0.084	
Interaction1	0.316	0.207	0.033	
Interaction2	0.528	0.429	0.088	0.261

Source: Primary data processed, 2024.

A discriminant validity test is also required to assess the correlations among constructs. The discriminant validity test in Table 2 indicates that all variables have an HTMT ratio below 0.9, which is consistent with the principle that distinct constructs should not be highly correlated. The HTMT results are based on the rule-of-thumb criterion <0.9. It is also possible to infer that the construct has high discriminant validity.

Inner Model Analysis

R^2 tests the structural model in PLS. The R^2 value assesses the degree of variation in changes in exogenous factors relative to endogenous variables. The research model's prediction model improves as the R^2 value increases. The table below shows the R^2 values.

Table 7. R^2 Result

Variable	R^2	Adjusted R^2
Environmental Performance	0.611	0.604

Source: Primary data processed, 2024.

The analysis results indicate that the adjusted R^2 value is 0.604, suggesting that 60.4% of the variation in environmental performance can be accounted for by green human resources management, green innovative work behavior, environmental regulation, and their interactions. These findings indicate that the structural model is highly robust. Furthermore, 39.6% of the variance is attributed to other factors not considered in this study. The informed consent was embedded within the questionnaire, where the study's purpose was clearly explained. Respondents were assured of the confidentiality of their data, as stated in the questionnaire, emphasizing that all collected information would be used solely for research purposes.

Hypotheses Testing

Hypothesis testing is conducted by evaluating the direct impact of independent variables on dependent variables. The direct influence hypothesis is tested by the T statistic value being greater than the T table value, or by the p-value being <0.05. The subsequent table illustrates the findings of the hypothesis testing analysis:

Table 8. Direct Effect Result

Variable	Original sample	Sample mean	T Statistic	P Values	Conclusion
GHRM →EP	0.356	0.351	6.822	0.000	H_1: supported
GHRM →GIWB	-0.094	-0.092	2.121	0.034	H_2: supported
GIWB →EP	0.449	0.455	9.751	0.000	H_3: supported

Table 8 displays the p-values indicating a direct influence between variables, with a significance level of less than 0.05. Therefore, the direct hypothesis-testing findings indicate that Green human resources management positively influences the environmental performance of hospitality companies in Salatiga City (H_1 supported). The result strongly supports the assertion that GHRM positively impacts organizational environmental performance. Implementing green recruiting and selection, as well as green training and development, positively correlates with

environmental performance in the hotel business. This implies that these practices effectively encourage employees to participate in sustainability initiatives (Roscoe et al., 2019). The organizational level revealed a broader range of determinants, with GHRM practices being the most influential factor (Kusumastuti & Herachwati, 2024). Furthermore, it has been emphasized that adopting GHRM strategies improves the pro-environmental conduct of employees, which is essential for attaining the company's environmental objectives.

Moreover, green human resource management has been increasingly recognized for its positive impact on employee green innovative work behavior (H_2 supported). GHRM has emerged as a pivotal strategy for organizations seeking to enhance sustainability while fostering innovative employee behaviors. At the individual level, green innovative work behavior has been identified as the primary factor influencing environmental performance (Kusumastuti & Herachwati, 2024). This relationship is supported by a growing body of literature highlighting how GHRM practices foster an environment conducive to innovation and sustainability (Dwivedi et al., 2021). The results of hypothesis testing also indicate that GIWB positively impacts environmental performance in hospitality sector companies (H_3 supported). Green, innovative work behavior refers to employees' proactive efforts to develop and implement environmentally friendly practices and innovations within their organizations. This behavior is critical to improving environmental performance, including an organization's ability to reduce its environmental footprint and achieve sustainability goals.

Mediating and Moderating Analysis

The findings of hypothesis testing for indirect effects are presented in Table 9. In this specific case, the variable of GIWB serves as a mediator between GHRM and environmental performance. Additionally, environmental regulation acts as a moderator of both the direct impacts of GHRM on environmental performance and the mediating effect of GIWB on environmental performance.

Table 9. Indirect Effect Result

Variables	Original sample	Sample mean	T Statistic	P Values	Conclusion
GHRM⟶GIWB⟶EP	0.234	0.231	6.168	0.000	H_4: supported
Interaction 1⟶EP	0.027	0.028	1.913	0.002	H_5: supported
GHRM ⟶ GIWB⟶ Interaction 2 ⟶EP	0.234	0.233	5.823	0.000	H_6: supported

Table 9 illustrates the indirect influence of GIWB in mediating the connection between GHRM and EP. These findings are substantiated by the p-values below 0.05, therefore offering valid support for hypothesis 4 (H_4 supported). Prior research indicates that green innovative work behavior significantly contributes to environmental performance through various mechanisms. For instance, it demonstrates that human resource management positively influences environmental performance by mediating the effects of green, innovative work behavior (Rakin et al., 2020). This suggests that when organizations adopt GHRM practices, they foster an environment conducive to innovation, enhancing their overall environmental performance. The relationship between GHRM and EP is complex and can be influenced by various factors, including environmental regulations. Table 9 shows that environmental regulations can moderate this relationship, shaping how GHRM practices translate into improved environmental performance (H_5 supported). Research indicates that environmental regulations

can enhance the effectiveness of GHRM practices. According to Zhang et al. (2020), the intensity of external environmental regulation positively moderates the relationship between GHRM and corporate green innovation. It suggests that stricter regulations compel organizations to adopt more robust GHRM practices, leading to better environmental performance.

Table 9 also showed that environmental regulation is a moderating variable that influences the indirect effect of GHRM on environmental performance via GIWB, as evidenced by a p-value of less than 0.05 (H_6 supported). The moderating role of environmental regulation in the relationship between GHRM and GIWB towards environmental performance is an important area of research that highlights how external regulatory frameworks can influence organizational practices and outcomes. Environmental regulations can create a structured environment that compels organizations to adopt GHRM practices, thereby enhancing GIWB and ultimately improving environmental performance. Al-Swidi et al. (2022) explained that when organizations face stringent regulations or consumer expectations regarding environmental performance, they are more likely to implement GHRM practices that foster GIWB, leading to better environmental outcomes.

The Relation of Green Human Resources Management and Environmental Performance

GHRM positively and significantly influences environmental performance in the hospitality industry. This result aligns with the systematic research by Susanto et al. (2022), which highlights the importance of GHRM practices in predicting environmentally sustainable performance within the hotel industry. The research indicates that implementing green recruitment, training, and evaluation strategies significantly improves environmental performance. GHRM facilitates the adoption of green policies, such as reducing single-use plastics, implementing energy-efficient systems, and promoting sustainable sourcing. In the hospitality industry, these policies lead to more efficient operations, lower energy consumption, and reduced waste, all contributing to better environmental performance. Through GHRM, hotels and hospitality companies can implement water-saving measures in housekeeping, eco-friendly laundry practices, and energy-efficient lighting. These practices not only reduce costs but also improve the environmental sustainability of operations. Another study explained that the organizational level revealed a broader range of determinants that can enhance environmental performance, with green human resources management practices being the most influential factor (Kusumastuti & Herachwati, 2024). By fostering employee engagement, implementing sustainable practices, enhancing guest participation, and aligning strategic goals with sustainability, GHRM helps hospitality businesses achieve better environmental outcomes. This improves the industry's environmental footprint and strengthens its market position and long-term viability.

The Role of Green Innovative Behavior and Environment Regulation

GIWB can mediate the relationship between environmental performance and GHRM. In the hospitality sector, GHRM includes specialized training that equips employees with the knowledge and skills to implement eco-friendly practices, such as energy-saving techniques, waste reduction, and water conservation. GHRM practices in hospitality often involve recruiting staff with a strong commitment to sustainability and rewarding employees who contribute to green initiatives. This fosters a capable, motivated workforce that engages in environmentally responsible behavior. However, the actual improvements in environmental performance are often realized through employees' innovative behaviors. For example, a hotel might implement a GHRM policy to reduce water usage. However, employees find ways to optimize this policy in day-to-day operations, such as by designing more efficient housekeeping routines or suggesting guest engagement programs to encourage towel reuse. GIWB amplifies the effects of GHRM by turning policy into practice.

When hospitality employees are encouraged to innovate, they can develop creative and effective solutions that significantly enhance environmental performance. Moreover, a prior study highlights that GHRM has a significant indirect impact on environmental performance through proactive pro-environmental behaviors, including GIWB (Aboramadan et al., 2022). This finding suggests that GHRM practices facilitate the sharing of green knowledge and the development of green behaviors among employees, ultimately leading to enhanced environmental performance.

Environmental regulation refers to laws, rules, and guidelines imposed by governments or regulatory bodies to control activities that impact the environment. These regulations may include limits on emissions, waste management requirements, energy efficiency standards, and obligations for sustainable practices. Environmental regulation can enhance the effectiveness of GHRM by creating a regulatory framework that supports and enforces the organization's green initiatives. With strict regulations, organizations may be more motivated to implement effective GHRM practices to ensure compliance, leading to better environmental performance. In environments with stringent environmental regulations, organizations are often compelled to innovate and adopt best practices to meet regulatory requirements. GHRM is critical in facilitating this innovation by training employees, fostering green innovation, and ensuring the workforce is aligned with regulatory demands. Research suggests that environmental regulations can improve the efficacy of GHRM practices. To illustrate, the intensity of external environmental regulation positively moderates the relationship between GHRM and corporate green innovation. This implies that organizations are compelled to adopt more robust GHRM practices under stricter regulations, thereby improving environmental performance (Zhang et al., 2020). This research shows how environmental regulation moderates the relationship between GHRM and GIWB, and environmental performance shows how external regulatory frameworks can affect organizational practices and outcomes. Environmental rules can structure organizations to adopt GHRM practices, thereby improving GIWB and environmental performance.

CONCLUSIONS

The evidence suggests that GHRM positively and significantly influences environmental performance in the hospitality industry. By fostering a culture of sustainability and encouraging environmentally friendly behaviors among employees, GHRM practices can substantially improve environmental outcomes. Integrating GHRM practices will be crucial for achieving long-term sustainability goals as the hospitality sector evolves. The GHRM framework facilitates the attainment of improved environmental results for hospitality companies. These improvements not only enhance the sector's environmental impact but also bolster its market position and long-term sustainability.

The relationship between environmental performance and green innovation work behavior is multifaceted and influenced by organizational factors, including HRM practices, organizational culture, and perceived support. Organizations can improve their environmental performance and contribute to broader sustainability objectives by cultivating a supportive environment that promotes green innovation. In the hospitality sector, GIWB is a crucial mediator between GHRM and environmental performance. While GHRM lays the foundation by promoting sustainability through policies, training, and incentives, employees' innovative work behavior turns these initiatives into practical, impactful actions that improve environmental performance. This mediation highlights the importance of fostering a culture of innovation in the hospitality industry to achieve significant, sustained environmental improvements. In conclusion, environmental regulation significantly moderates the relationship between GHRM and GIWB towards environmental performance. By creating a framework that encourages organizations to adopt and enhance their GHRM practices, regulations can facilitate the development of GIWB among

employees, leading to improved environmental outcomes. Future research should continue to explore this dynamic, particularly in various regulatory contexts, to better understand how GHRM can be optimized for environmental performance.

Environmental regulation moderates the relationship between GHRM, GIWB, and environmental performance in the hospitality sector. When environmental regulations are stringent, they strengthen the impact of GHRM on GIWB, leading to enhanced environmental performance. This moderation underscores the importance of aligning GHRM and GIWB with regulatory frameworks to achieve optimal environmental outcomes in the hospitality industry. Regarding the hospitality sector in Salatiga and the hospitality sector in general, they need to tailor their GHRM practices to the level of environmental regulation they face. Enhancing GHRM practices to foster GIWB can be crucial for achieving compliance and excelling in environmental performance. Even in less regulated environments, organizations can use GHRM to foster a culture of innovation that anticipates future regulatory changes, ensuring they remain ahead of the curve in environmental sustainability.

LIMITATION & FURTHER RESEARCH

This study provides significant insights into problems and options to promote environmentally awareness innovative work behavior to enhance the environmental performance of hospitality sector firms. However, more research is needed to expand the applicability of the findings. Future research might broaden the geographic scope to examine green innovation behavior in other regions and sectors. Furthermore, cross-sectoral and interdisciplinary collaborations could lead to a broader perspective of the complex and multifaceted issues surrounding green human resources management in the industry, leveraging insights from fields such as employee' behavior and policy development.

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