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Research paper

Linking Green HRM Practices and Green Innovation to Sustainable Performance: Evidence from Upscale Hotels in India

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Abstract

This study examines green innovation, green HRM bundle practices, and Triple Bottom Line sustainability performance. A tailored survey will quantify the data of 305 high-end hotel personnel in Punjab and Uttar Pradesh. Smart PLS used structural equation modeling to analyze data. Data show that green HRM package practices improve hotels' sustainability. Green innovation also has a significant impact on sustainable performance and partially mediates the relationship between green HR practices and SMEs' sustainable performance. This study advises using GHRM to improve hotels' GI adoption and sustainability. This study reinforces conventional wisdom. Innovation and human resources environmental management techniques can improve sustainability.

Keywords: *Green Human Resource Management; Triple Bottom Line; Sustainable Performance; Green Innovation; Upscale Hotels*

1. Introduction

According to research, sustainable ecological and social performance may solve sustainability challenges for businesses. Quantitative eco-performance shows a company's environmental commitment [2]. Corporate social performance is measured by meeting stakeholders' health and safety needs, creating jobs, and reducing community harm, according to [3]. Business sustainability is crucial for survival, environmental protection, and human well-being. It cuts hiring time and turnover while amplifying productivity. It helps organizations maintain a global competitive edge while conserving the environment and society [16]. Therefore, scholars and practitioners must comprehend business sustainability elements [1].

Green management practices like GHRM and dynamic capacity affect business sustainability [19]. Environmentally friendly HR practices benefit the organization. Sustainability in hiring, selection, compensation, and incentives is crucial. GHRM can promote eco-friendly business practices and increase company sustainability [9]. Dynamic capacities and GHRM are antecedents to sustainability. Our capabilities help business sustainability efforts. Since they are essential to many companies' business strategies, they improve sustainability [6]. To improve ecological and social performance, dynamic sustainable capabilities help organizations find, seize, monitor, and configure sustainable development possibilities [24]. Organizational capacities are rarely mentioned in corporate sustainability. In dynamic resource-based theory, it handles internal and external dynamism and is included in this study. Manufacturers create the second-most jobs, exports, and GDP after agriculture. Sustainable business practices alleviate the environmental problem and promote safer, more compassionate workplaces [22].

2. Review of Literature

2.1 Theoretical Background

HR's emphasis has moved from administrative effectiveness to strategic sustainability outcomes because of the quick digitisation of HR. Recent research emphasises how AI-augmented HRM can improve the connection between long-term performance and organisational strategy. For example, [8] discovered that digital culture had a less significant impact on AI-augmented HRM than organisational strategy, which in turn improves sustainable organisational performance. Similar findings were made by [11], who showed that employee engagement and performance act as a mediating factor in the positive correlation between organisational performance and digital human resource management (D-HRM) practices in Vietnamese businesses. These studies highlight the growing importance of digital HRM systems in achieving sustainability and efficiency objectives.

The adoption of AI in HRM that is human-centric is another point of emphasis for academics. [12] contends that rather than viewing AI as a purely technical implementation, HR must play a crucial role in forming moral, open, and employee-friendly AI practices. Value alignment, skill development, and employee well-being must all be carefully considered when implementing AI, particularly in service industries where relationships are crucial to the work process. This viewpoint is supported by research in the hospitality industry, where employee and AI coexistence is still a developing topic. In their study of hotel workers' perceptions, [28] found that although they recognize AI's contribution to increased operational efficiency, they are also concerned about job security, deskilling, and fewer opportunities for face-to-face interaction with visitors.

Recently, research focused on the hospitality industry has highlighted how digital transformation can be integrated with sustainability goals. According to [10], sustainability performance in Egypt's green-certified hotels is greatly improved by green digital transformational leadership (GDTL). Their research also shows that hotel green efficacy increases the influence of leadership on sustainability outcomes, while circular economy practices mediate this relationship. This study demonstrates that converting digital practices into observable sustainability outcomes requires strong leadership commitment and employee belief in green initiatives. Similarly, [23] investigated how hotel companies' green work engagement is impacted by artificial intelligence awareness (AIA). They discovered that while awareness of AI tends to make jobs more stressful and engage workers less, this effect can be mitigated when workers have high levels of technological self-efficacy and trust in management. This underscores the significance of organisational and psychological support.

In the hospitality industry, green innovation techniques have also been investigated as a means of promoting sustainability. According to [29] the implementation of eco-friendly operations, sustainable building design, and waste management techniques greatly enhances the financial and environmental performance of hospitality businesses. They do point out, though, that access to technology, regulatory pressures, and firm size all affect how green innovation is implemented. This implies that although there are methods and resources for sustainable hospitality, their uptake varies depending on the situation.

2.2 Hypothesis Development

Green Human Resource Management and Sustainable Performance

At every stage of human resource management, there should be a conscious awareness of the environmental impact. According to [30] and [33], human resource management practices can boost environmental performance (EP) by putting in place and carrying out an environmental management system. Universal HRM fosters both growth and sustainability. Environmental, employee, and aesthetic concerns are the reasons why GHRM is essential. [6] and [31] conducted HRM research that focused on how individual practices affected business performance rather than how combinations of practices did.

It has been suggested by [32] that combined GHRM policies have the potential to improve both business and environmental performance. Researchers have recently been concentrating their attention on how GHRM practices influence bundle performance. RBV differentiates between different types of business resources, as stated by [14] and [34]. Efficiency can be improved using economic performance (Ec.P.). According to [26], GHRM has the potential to promote improved employee performance. It has been suggested by [35] that environmentally conscious workplace practices that promote employee growth and motivation have the potential to increase earnings. Several studies, including Tariq et al. (2016) and [20], have demonstrated that businesses that demonstrate concern for the environment are more likely to attract environmentally conscious applicants. Environmental activities can boost worker engagement, retention, and productivity. Turning green promotes a sustainable business culture. This culture values efficiency, cost savings, and employee pleasure. According to [20], an eco-conscious culture cut costs and increased sales.

Companies that address environmental challenges have better stakeholder interactions, staff retention, and employee satisfaction [36]. Several other benefits exist. Social responsibility is higher, and the company can attract and retain top talent, among other benefits. Socially responsible enterprises benefit in several ways. The company's social performance is affected by innovation, recruiting policies, and customer satisfaction [5]. Businesses that invested in social activities that improved GHRM made a big shift.

H1: GHRM practices have a significant impact on sustainable performance

Green Innovation and Sustainable Performance

In GI, [37] found a favorable correlation between green purchasing (GP) and cooperation with GI or EP consumers, supporting the existence of GP. [38] Suggests that environmental cooperation (EC) and government procurement (GP) influence suppliers and customers to behave sustainably, improving manufacturing companies' environmental performance. By supplying environmentally friendly products, [36] suggests that companies that monitor and educate their suppliers may improve their environmental performance (EP). Focusing on GI, which uses environmentally friendly production processes, boosts efficiency and reduces resource use. Overall production costs decrease. GI's eco-design (ECO) component saves money and improves the organization's environmental performance, according to [39]. Reduce waste and improve material efficiency. By increasing the likelihood of selling things overseas and providing a huge benefit that outweighs the costs, [40] found that ECO practices reduce costs. Businesses may benefit greatly.

Environmentally responsible actions are beneficial to the health of both communities and businesses, as stated by [16] and [18]. According to the findings of the study, environmentally responsible production is beneficial to both workers and society. The authors [17] assert that businesses can accomplish social goals such as protecting customers, maintaining market transparency, and preserving the environment. SP can be increased through the implementation of GI into business activities[14]. Brand recognition, consumer loyalty, safety, equality, and ethics are all improved while GI practices are implemented. Environmentally responsible practices have the potential to boost consumer loyalty and brand identity [4, 13, and 14] even though these types of practices are rarely investigated. Possible hypotheses are below:

H2: Green innovation is significantly influenced by GHRM practices.
H3: Green innovation has a significant impact on sustainable performance.
Human Resource Management Green Innovation as a mediator
can improve an organization's performance by turning people into remarkable, significant, and unique resources, according to [7]. Use of such a resource can help the company achieve its commercial goals. According to [41], innovation uses talent to achieve organizational goals. In addition, [26] states that innovators can help businesses improve performance and gain a competitive edge.
Resources that interact can give you an edge. The literature suggests that GHRM practices greatly influence GI implementation [14]. Literature agrees. Implementing GI and hiring environmentally conscious workers may be difficult without HR management tools and organizational culture. Supplementing previous experimental studies, we focus on its impact on sustained performance [42]. GHRM recruits specialists and dedicated workers to integrate environmental values in an innovative business model [21]. [15] Conclude that GI mediates GHRM-EP. RBV illustrates how ecologically responsible actions affect sustainability results, allowing GHRM-GI to be further studied. So, consider this hypothesis:
H4: Green innovation mediates the relationship between GHRM practices and sustainable performance.

3. Research Gaps

Most studies on GHRM and sustainable performance center on manufacturing, energy, or major industry sectors. The hotel industry has operational difficulties and a strong service orientation; hence, empirical studies in this field are very lacking. Although GHRM relates to sustainable results, the process by which GHRM generates sustainable performance is not clearly known. Still understudied is the mediator function of green innovation. Many studies treat sustainability, innovation, and green HRM, all within separate spheres. Integrated theoretical models linking these three spheres in a coherent framework are lacking. Few studies look at how workers view GHRM policies and how this view affects their participation in sustainable outcomes and green innovation. In hotel service delivery, employee behavior and attitude define everything; so, this is a vital but underappreciated field.

4. Empirical Setting and Procedure of Testing

It focuses on hotel staff and how Green HRM (GHRM) leverages Green Innovation (GI) to promote sustainable performance (SP) in the hotel sector. The hypotheses are also tested practically. Hoteliers are under pressure to adopt eco-friendly practices due to their excessive energy, water, and waste use. GHRM has become a strategic tool to promote environmental awareness and pro-environmental behavior among hotel staff, although its impacts on Sustainable Performance (SP) are unknown. Considering its high energy, water, and garbage use, the hotel business is under increasing pressure to embrace eco-friendly solutions. Although GHRM has become a strategic instrument to encourage environmental awareness and pro-environmental behavior among employees, its direct impact on Sustainable Performance (SP) in hotels remains unknown.

5. Sample and Data Description

Any study needs a comprehensive, accurate, current sample frame. In the lack of a sampling frame, this kind of sampling was applied under convenience sampling. Care has been taken to ensure representativeness and reduce bias by keeping an audit record of the data collection process and deliberately selecting samples with consistent features. To gather the main data, 305 hotel staff members from Punjab and Uttar Pradesh were given a well-organized questionnaire to finish throughout the six-month period between December 2024 and May 2025. The tool employs a five-point Likert scale, with five denoting "strongly agree" and one denoting "strongly disagree," depending on the kind of question. This is a non-comparative, thorough rating system. The data collection procedure is based on the cross-sectional approach; a second-generation data analysis application called Smart PLS-4.0 is applied.

6. Measures

Tang et.al's (2017) 19-item scale was used to gauge the independent variable, i.e., Green HRM. A 15-item measure developed from Khan and Quaddus (2015) was used to evaluate the dependent variable, which is sustainable performance across the social, environmental, and economic domains. Four questions taken from a previous study by Chiou et al. (2011) examined green product innovation (GPRD). Four elements (GPRC) developed by Chiou et al. (2011) were used to gauge Green Process Innovation. These two together were used to measure Green Innovation, which is a mediating variable in the study.

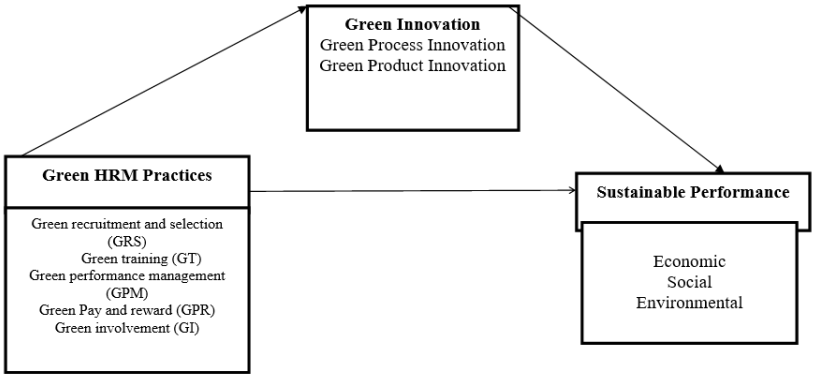

Fig. 1: Conceptual Model

7. Research Design and Analysis

In a descriptive study, green innovation mediated the relationship between green HRM practices and sustainable performance. PLS-SEM analyzed data. With SmartPLS Version 4.0, the study assessed the structural and measurement models. Assessing measurement model convergent and discriminant validity. Discriminant validity compares items across conceptions, while convergent validity compares them within. Construct relationships were examined to evaluate the structural model. Applicability, significance, and collinearity of structural models were investigated. The model's predictive relevance (Q2), effect size (f2), and coefficient of determination (R2) were examined.

8. Findings

Measurement model assessment

Table 1 lists the metrics, including factor loading, composite reliability (CR), and average extracted variance (AVE), that were used to evaluate the measurement model. While values as low as 0.4, 0.5, and 0.6 may be appropriate in certain situations, a factor loading of 0.700 is generally regarded as average (Ramayah, Cheah, Chuah, Ting, & Memon, 2018). One item from the Sustainable Performance scale (EP1) was eliminated because of negative factor loadings. GI2 was similarly eliminated from the GHRM scale for negative factor loadings. These things weren't considered for additional analysis. With AVE and CR benchmarks of 0.5 and 0.7, respectively, Table 1's results show that all requirements have been satisfied. This suggests that the convergent validity of the measurement model is suitable. The measurement of the SmartPLS output for lower-order constructs is shown in Figure 2.

Table 1: Factor loading, composite reliability, and average variance extracted

	Item Code	Factor Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)
Economic Performance	EP2	0.774		
	EP3	0.792		
	EP4	0.843	0.801	0.622
	EP5	0.743		
Environmental Performance	ENP1	0.785		
	ENP2	0.841		
	ENP3	0.82	0.854	0.633
	ENP4	0.82		
	ENP5	0.705		
Social Performance	SOP1	0.8		
	SOP2	0.803		
	SOP3	0.777	0.836	
	SOP4	0.782		0.602
	SOP5	0.714		
Green Involvement	GI1	0.766		
	GI3	0.786		
	GI4	0.748	0.809	0.565
	GI5	0.726		
	GI6	0.73		
Green Performance Management	GPM1	0.809		
	GPM2	0.792		
	GPM3	0.759	0.807	0.631
	GPM4	0.817		
Green Recruitment and selection	GRS1	0.814	0.796	0.709
	GRS2	0.863		
	GRS3	0.848		
Green Training	GT1	0.785		
	GT2	0.808	0.722	0.639
	GT3	0.804		
Green pay and reward	GPR1	0.796		
	GPR2	0.817	0.829	0.618
	GPR3	0.743		
Green process innovation	GPRC1	0.688		
	GPRC2	0.779		
	GPRC3	0.836		
	GPRC4	0.773	0.796	0.545
	GPRC5	0.591		
Green product innovation	GPRD1	0.68		
	GPRD2	0.746		
	GPRD3	0.813	0.757	0.571
	GPRD4	0.777		

Source: Author's Own Calculation

HTMT was suggested by Henseler, Ringle, and Sarstedt (2015) to evaluate the measurement model's discriminant validity. Gold, Malhotra, and Segars (2001) suggested 0.9, while Kline (2011) mentioned 0.85. As Table 2 illustrates, the measurement model met all these discriminant validity conditions.

Table 2: HTMT assessment of discriminator validity

	EP	ENP	GI	GPR	GPM	GPRC	GPRD	GRS	GT	SP
EP										
ENP	0.594									
GI	0.731	0.658								
GPR	0.736	0.714	0.776							
GPM	0.721	0.657	0.897	0.891						
GPRC	0.766	0.707	0.837	0.864	0.829					
GPRD	0.844	0.723	0.812	0.871	0.825	0.727				
GRS	0.603	0.682	0.799	0.825	0.844	0.755	0.772			
GT	0.731	0.694	0.892	0.656	0.847	0.826	0.857	0.891		
SP	0.617	0.847	0.729	0.804	0.752	0.755	0.739	0.623	0.709	

Source: Author's Own Calculation

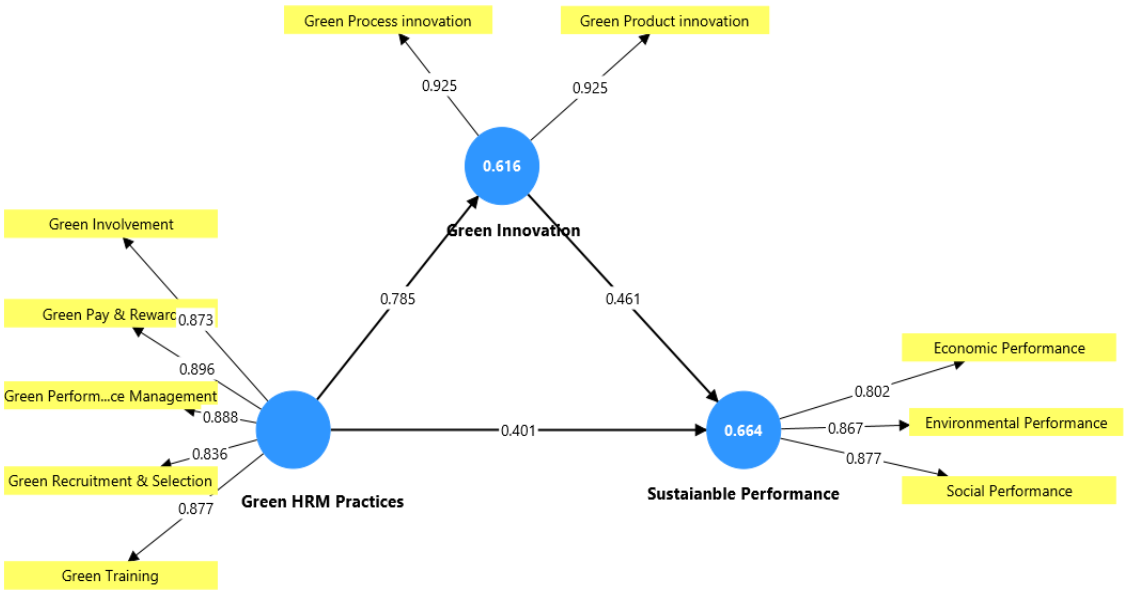

Fig. 2: SmartPLS output of the measurement model

Structural model assessment

The Variance Inflation Factor, or VIF, was used to determine whether multicollinearity existed in the model. Each VIF value was comfortably below 3.3, suggesting that multicollinearity was not a problem for the model (Diamantopoulos & Siguaw, 2006).

Table 3: Collinearity Statistics

Items	VIF
Economic Performance	1.441
Environmental Performance	2.168
Green Involvement	2.77
Green Pay & Reward	2.268
Green Performance Management	1.022
Green Process innovation	2.022
Green Product innovation	2.022
Green Recruitment & Selection	2.304
Green Training	2.882
Social Performance	2.201

Source: Author's Own Calculation

Table 4: R- Square and Q- Predict

	R Square	R-squared Adjusted	Q Predict
Green Innovation	0.616	0.614	0.613
Sustainable Performance	0.664	0.662	0.579

Source: Author's Own Calculation

A model with R2 > 0.5 is suitable. Table 4 shows that the model is highly predictive because each exogenous construct's R-squared value is greater than 0.5 (Hair et al., 2016). Q2 scores for all model latent variables indicate good predictive power (Hair, Joe F et al., 2016). To evaluate the model's "explanatory power," R2 values were calculated for each predicted variable. It showed how much the IV explains the DV. Predictive accuracy is R2, 0–1. The R2-values are "weak," "moderate," and "strong." Significant R2 values are 0.75, moderate 0.50, and low 0.25. R Square values above 0.5 for all exogenous constructs in Table 4 indicate good model prediction (Hair et al., 2016).

Table 5: Hypothesis Testing

Hypothesis	t Values	F^2	P Values	Conclusion
GHRMP>GI- H1	25.043	1.601	0.000	Accepted
GHRMP>SP- H2	6.135	0.184	0.000	Accepted
GI>SP-H3	0.066	0.243	0.000	Accepted

Source: Author's Own Calculation

According to Hair et al. (2016), this study uses bootstrapping at 5,000 with sample replacement to investigate the hypothesis. Sustainable performance is significantly improved by Green HRMP, as seen in the above table (t value = 6.135, p-value = 0.000). Sustainable performance is significantly and favorably correlated with green innovation (t-value = 0.066, p = 0.000). The association between green HRM practices and green innovation is significant (t-value = 25.043, p = 0.000). Based on the results, Hypotheses H1, H2, and H3 are accepted. Table 5.

9. Mediation Analysis

GI combines HRM and sustainability performance. Over 80% of the VAF suggests full mediation, 20% to 80% indicates partial mediation for mediation effects, and 20% or less shows no mediation (Hayes & Preacher, 2010). According to research, GI mediates the link between SP and GHRM. GHRMP and Sustainable Performance are partially mediated by GI, according to a t-test and p-value. An indirect impact (=0.362, t-value = 7.009, p-value = 0.000) with VAF 47% implies partial mediation.

Table 6: Mediation Analysis

Hypothesis	Direct Effect	Indirect Effect	Total Effect	VAF (%)	Explanation	Result
GHRMP>GI>SP	0.785	0.362	0.763	IE/TE-47%	Partial	H4 Accepted

Source: Author's Own Calculation

Table 7: Mediation Rules

Testing Mediation Analysis	Independent Variable-Dependent Variable	Independent Variable-Mediating Variable	Mediating Variable-Dependent Variable
Partial Mediation	Significant	Significant	Significant
Full Mediation	Insignificant	Significant	Significant
No Mediation	Significant	Insignificant	Insignificant

By incorporating environmentally friendly principles into hiring, training, rewards, and employee engagement, green human resource management, or GHRM, directly improves sustainable performance in hotels. Research indicates that GHRM significantly improves sustainability outcomes like waste management, energy use, and environmental reputation ($\beta \approx 0.42$, *p* < 0.01).In this relationship, Green Innovation (GI) also serves as a partial mediator. New eco-friendly procedures, technologies, and services are the result of GHRM's culture of innovation. With a statistically significant indirect effect ($\beta \approx 0.16$, *p* < 0.05), these innovations further improve sustainable performance. GI only partially mediates the link because both direct and indirect effects are significant; therefore, GHRM functions both independently and through GI.

From a practical standpoint, this means that although GHRM policies have quantifiable sustainability benefits, their combined use with innovation unlocks even more value. Hotels that combine GHRM and GI boost brand equity and customer loyalty in addition to saving money and increasing return on investment through resource efficiency. To put it succinctly, GI strengthens the basis for long-term competitive advantage by multiplying the financial and reputational advantages of green HR practices.

10. Discussion

The findings of this comprehensive study will help businesses comprehend their environmental ethics. This study compares organizational functions to EP, ENP, and SP sustainability performance. Based on the findings, GHRM bundles propagate environmental management-based ideas and positively correlate with SP (supporting H1). In this approach, employees can contribute to workplace culture evolution. A dedicated staff boosts a company's value. This supported Saeed et al.'s (2019) findings that GHRM bundles and SPs implementing green practices would save money, be sustainable, and increase corporate social responsibility, helping a business improve community health and reputation.

According to [44], GHRM significantly improves GI (H2) in comparison to other methods. According to [47], GI requires assistance from GHRM to spur innovation and achieve a competitive advantage. Although the current study provides evidence that GI has a positive link with sustained performance, further research is required to investigate the processes that lie underneath the surface. Additionally, GI may be strategically linked with EP, ENP, and SP, which may have a positive correlation with such techniques. This is in support of Hypothesis 3. [46] found a strong link between GI and asset and input optimization, supporting this data. Through energy-saving, resource recycling, waste and rework reduction, quality improvement, and innovative product and process development, this reduces costs. According to the findings of the study, GI has the potential to increase SP and can be utilized to recruit "GHRM bundle-shaped employees" who are knowledgeable, inspired, and concerned about the environment. It is recommended by [45] to use GI practices depending on the resources that are available internally.

Recruitment, selection, onboarding, lost productivity, and the decline in service quality as replacements increase are all quantifiable line-item costs (and hidden opportunity costs) associated with high turnover in the hospitality industry. It has been demonstrated that GHRM practices—green hiring that draws in mission-fit employees, green training that develops pertinent skills, green performance systems, and green rewards—improve retention in hotel settings. The retention benefit is amplified (lowering replacement costs and separations) when paired with green innovation that encourages employees to work more sustainably. According to empirical hotel research, there are strong correlations between GHRM and retention (with GI serving as a mediator). This suggests that hotels that make investments in GHRM and GI see a positive return on investment (ROI) through lower hiring/training costs and fewer service interruptions [48]. According to [49], these effects improve EBITDA and the return on HR investments by lowering operating expenses (training and recruitment) and increasing labor productivity.

Water conservation technologies, food waste management, LED lighting, energy-efficient HVAC, and on-site renewables are examples of green innovations in hotels that directly and traceably lower utility and consumables expense lines. According to several case studies and industry reports, renewable energy and water efficiency retrofits and renewable energy sources frequently have measurable payback periods (usually several years, but short enough to be financially appealing) and result in long-term drops in operating and sales costs. Accounting-wise, these investments have an impact on the balance sheet (capitalised equipment and subsequent depreciation) as well as the cash-flow statement (lower operating cash outflows). Research and industry publications provide specific payback examples and percentages of hotel energy bill reductions, demonstrating how GI investments eventually result in higher profits and better margins.

In addition to costs, GHRM and GI also have an impact on revenue. Hotels enhance their employer brand and environmental reputation by implementing visible green innovations and credible green HR policies. This attracts premium corporate accounts, repeat business, and longer stays. According to academic research in the hotel industry, environmental management and corporate social responsibility (CSR) practices (with GHRM acting as a mediator) have a positive relationship with firm performance. This suggests that the reputational and intangible benefits can be translated into quantifiable revenue increases, higher RevPAR (revenue per available room), and increased profitability. According to resource-based theory, intangible assets that can generate long-term financial benefits include corporate brand and unique sustainability capabilities. Higher top-line numbers, improved profit margins, and in certain situations, higher intangible asset valuations or goodwill at acquisition are all examples of these effects in accounting.

11. Implications

This study suggests that GHRM can help businesses apply GI, improving sustainability. The investigation strengthens and confirms the traditional understanding. Environmental management in innovation and human resources can improve sustainability, according to the study. This study supports meta-analyses indicating HRM practices and innovation may increase firm competitiveness. By illustrating how GHRM can increase green performance by producing informed, committed, and trained people inside GI, the current study assists cross-functional green management. GI and GHRM must be used in environmental planning after these findings. This analysis confirms previous studies on the importance of a green HRM program.

Hotels can align digital HR practices with sustainability goals by utilizing Green HRM (GHRM) training programmes and Green Innovation (GI) initiatives. Examples include digital sustainability academies utilized by international hotel chains, waste reduction training for chefs, and AI-powered e-learning platforms for eco-friendly housekeeping. In terms of innovation, hotels can implement circular economy techniques like reusing linens or refillable dispensers, IoT-enabled energy systems, and AI-based food waste forecasting. High costs, especially for smaller hotels, employee resistance because AI adoption could lead to stress or job insecurity, and technical obstacles like data privacy risks and a lack of HR knowledge are the main obstacles to implementation. Hotels should take a phased approach to addressing these, starting with low-cost projects, looking for partnerships or subsidies, and encouraging participatory cultures where staff members jointly develop sustainable solutions. To guarantee that AI and green initiatives are viewed as beneficial rather than dangerous, transparent leadership communication is essential. Essentially, integrating digital HRM with green innovations can improve sustainability and brand value in the hospitality industry; however, their efficacy is contingent upon leadership commitment, employee engagement, and cost management.

Hospitality companies can use a phased implementation approach to get past these obstacles. Prior to making more significant investments, it can be beneficial to begin with low-cost projects like waste segregation programmes or digital learning platforms for sustainability awareness. Securing financial aid or technical support for the adoption of green technologies can also be facilitated by collaborating with governmental organizations or non-profits. Employee participation in decision-making, such as through employee-led sustainability committees, green suggestion programmes, or eco-friendly behaviour recognition programmes, can also lessen resistance and increase ownership. It's crucial that leaders communicate how AI tools complement employees rather than replace them to preserve inclusivity and transparency in their implementation.

12. Limitations and Future Research Directions

The deficiencies of our study, as well as prospective future research projects, are explored in this article. Because the scope of our study was limited to the hospitality sector in the states of Uttar Pradesh and Punjab, the findings cannot be generalized to other sectors of the economy. As a result, we recommend that, going forward, our conceptual study framework be extended to include new industries. This study did not analyze the environmental attitudes and values held by employees, which significantly impact the connection between human resource management and performance. Thus, we suggest that to comprehend how green HRM influences green innovation, future studies should determine the role that employees' environmental values and beliefs play. This study's third weakness was that it only looked at internal factors associated with sustainable solutions. To comprehend how proactive sustainable plans may be created, put into practice, and maintained, future research should consider both internal and external elements. We also surveyed to find out how members of the organization see green innovations and sustainability. The opinions of both internal and external stakeholders should be sampled in future research to achieve a more in-depth comprehension of innovations that are environmentally friendly and have sustainable performance.

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