Linking Green HRM to Organizational Performance: A Study of Sustainable HR Practices

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Abstract
Green Human Resource Management (Green HRM) incorporates ecological values into traditional HR practices to improve both environmental sustainability & efficiency of organizational. Environmental sustainability has become a top strategic goal for organizations worldwide. Green HRM, the application of HRM practices & techniques to promote sustainable resource use, plays a major role in achieving this goal. This study analyzes how core Green HRM dimensions impact organizational performance. The data was collected from 139 HR professionals as well as managers from Indian service & manufacturing firms. Canonical Correlation Analysis (CCA) was employed to explore multivariate relationships between three Green HRM practices i.e., Green Recruitment, Training, Performance Management alongwith three organizational performance indicators (Productivity, Compliance, Innovation). Additionally, the Mann-Whitney U test was also applied to analyze gender-based perception differences. The findings of the research confirm that Green HRM practices such as recruitment, training, & performance management are positively linked to the success of organizational. Such sustainable practices enhance productivity, environmental compliance & innovation. The strong canonical correlation focuses the need for integrated green strategies within HRM functions. The study reveals a strong multivariate association & finds gender-specific differences, reinforcing the strategic value of sustainability in HR.

Keywords: Sustainable Practices, HR Practices, Green HRM, Organizational Performance

Introduction

In a time that involves climate change, resource depletion, and heightened ecological awareness, organizations are necessitated to implement sustainable practices at all operational tiers. The Human Resource Management (HRM) function has become a pivotal catalyst for environmental

sustainability through the concept known as Green Human Resource Management (Green HRM). Green HRM entails integrating ecological factors into human resource policy to promote environmentally sustainable behaviour and match employee practices with the organization's environmental objectives (Samson, H., et.al., 2019).

The increasing environmental consciousness among stakeholders—such as investors, customers, employees, and regulators—has elevated sustainability from a corporate social responsibility program to a strategic necessity. In this setting, Green HRM serves as a conduit between corporate sustainability objectives and individual employee actions, facilitating environmentally conscious recruitment, training, performance management, and reward systems (Kaur, A., 2019). Despite the growing adoption of green practices by organizations, a deficiency persists in empirical research that directly correlates Green HRM initiatives with organizational performance outcomes, including productivity, innovation, and environmental compliance. This study seeks to address that gap by empirically investigating the impact of particular green HR practices on these performance metrics (Tiwari, A., 2019).

The research is especially pertinent for contemporary enterprises aiming to include sustainability while maintaining operational efficiency and profitability. Furthermore, it elucidates the strategic importance of human capital in facilitating sustainable transformation. As climate accountability increasingly becomes a fundamental aspect of corporate governance, Green HRM is now imperative rather than optional. This study examines the degree to which Green HRM practices enhance organizational performance and assesses the statistical significance of these relationships. It also furnishes facts to substantiate the development of integrated HR policies that are both performance-driven and environmentally sustainable.

Concept Green HRM
Green Human Resource Management (Green HRM) is the integration of environmentally friendly practices into human resource policies and operations. It entails linking human resource management goals and operations with environmental sustainability principles, ensuring that organizations prioritize both economic growth and environmental responsibility.

Green HRM is founded on the premise that employees play an important role in adopting and maintaining environmental efforts within organizations. Organizations may develop a sustainable culture and lower their ecological footprint by incorporating environmental objectives into HR services such as recruitment, training, performance management, and employee engagement.

Review of Literature
Nisar et al. (2019) examined the strategic significance of green recruitment and selection procedures in influencing an organization's environmental orientation. Their empirical research conducted in Indian IT enterprises demonstrated that companies emphasizing eco-conscious hiring achieved superior alignment with sustainability objectives. The research revealed that green recruitment appeals to those who are already driven by environmental principles, positioning HR as a conduit for sustainable transformation. This recruitment strategy minimizes training expenses by hiring people who are already knowledgeable. Their statistical analysis

revealed a substantial positive correlation between green recruiting practices and environmental performance indicators. This study established a solid basis for integrating green values into the initial HR function—talent acquisition. Renwick et al. (2020) examined the dual function of green training and employee empowerment in promoting environmentally sustainable behaviour within organizations. Their research, done across various UK organizations, demonstrated that sustainability-focused training markedly improved both knowledge and behavioural adaption among employees. Empowerment strategies, including suggestion schemes, involvement in ecological efforts, and decentralized decision-making, fostered active participation in environmental activities. This resulted in an increase in internal eco-audits and proposals for green innovation from personnel. The authors asserted that a sustainable attitude at the operational level is more effectively developed through immersive green learning interventions. Their findings further corroborated the function of HR as a catalyst for environmental transformation.

Jabbour and de Sousa Jabbour (2021) executed a longitudinal study in Brazilian industrial enterprises, examining the adoption of green performance management systems. Their research revealed that integrating environmental KPIs with staff evaluation methods markedly enhances responsibility and performance results. Employees exhibited a greater propensity for energy conservation and pollution mitigation when their performance indicators were linked to environmental standards. The scientists identified a correlation between these green appraisal methods and enhanced organizational creativity, as employees cultivated environmentally sensitive problem-solving strategies. The research advocates for the integration of sustainability into routine operational evaluations, rather than relegating it to a secondary objective. Dumont, Shen, and Deng (2020) proposed the notion of psychological green environment as an essential mediating variable in the relationship between Green HRM and organizational citizenship behaviour (OCB). Their research in the hospitality sector indicated that when employees view an organization as genuinely dedicated to sustainability, they willingly engage more in eco-initiatives. The "perception climate" markedly enhanced job happiness, team collaboration, and pro-environmental behaviour outside official job responsibilities. The authors highlighted that Green HRM's impact transcends legislation; it moulds the work environment and psychological contracts, ultimately enhancing performance through intangible yet potent means.

Zhang et al. (2022) conducted a cross-national comparison analysis between China and Germany, examining the impact of green HR policies on organizational performance. The research indicated that the congruence of Green HRM practices with national sustainability policies enhanced environmental compliance and employee productivity. In nations with rigorous environmental legislation, companies exhibiting strong Green HRM practices surpassed those that only adhered superficially. The researchers determined that green policies integrated into HR frameworks result in uniform yet adaptable practices across various regions. They promoted the multilevel integration of human resource management with national sustainability objectives to provide both legal and operational benefits. Tang, Chen, and Ji (2021) examined the interplay between strategic HRM and Green HRM approaches. Their findings highlighted that the systematic integration of green values into strategic HR processes such as succession planning and leadership development enhances organizational agility for enterprises. Companies with

environmentally-focused leadership pipelines demonstrated greater proactivity in implementing sustainable ideas. Moreover, their research emphasized that this integration enabled companies to mitigate environmental risks more efficiently, resulting in sustained performance improvements. This study expands Green HRM from operational functions to strategic decision-making areas.

Khan, Yusliza, and Fawehinmi (2023) performed a structural equation modelling (SEM) study to examine the impact of green rewards and recognition methods on organizational creativity. Their survey of 340 Malaysian SMEs validated that green incentives—both financial (e.g., eco-bonuses) and non-financial (e.g., green champion awards)—promote innovative solutions consistent with sustainability objectives. Employees that won this honour indicated an elevated commitment to eco-innovation. This study provided a novel perspective by demonstrating that reward methods, typically employed for productivity, may be effectively repurposed to improve environmental performance and creativity. Patnaik and Sharma (2024) examined Indian public sector undertakings and their implementation of Green HRM in relation to the attainment of the United Nations Sustainable Development Goals (SDGs). The research employed a mixed-methods approach to examine HR practices such as green orientation programs, environmental grievance redressal systems, and eco-leave policies. The findings demonstrated that public organizations integrating Green HRM with SDG frameworks showed enhanced compliance and reporting efficiency. They additionally observed improved inter-departmental cooperation and diminished operational waste. This research offers empirical evidence of human resources' involvement in national sustainability frameworks.

Hossain and Islam (2025) examined the mediating role of employee green behaviour in the relationship between Green HRM and organizational performance within the Bangladeshi textile sector. Their findings demonstrated that Green HRM practices favourably affected green behaviour, therefore resulting in enhanced productivity, decreased energy use, and increased adherence to international environmental norms. The researchers highlighted that human behavioural change serves as a conduit through which Green HRM influences organizational outcomes. This emphasizes the significance of behavior-centric criteria in assessing green projects. Mitra & Banerjee (2018) presented a multi-industry analysis indicating that companies implementing green initiatives throughout HR functions—recruitment, training, evaluation, and retention—achieved enhanced employee morale and improved employer branding. Their findings indicated that sustainable practices yield reputational benefits that convert into competitive advantages, particularly in economies with environmentally conscious consumers. The research highlighted the comprehensive incorporation of sustainable principles in human resources to attain internal coherence and external acknowledgement. This study establishes a basis for examining Green HRM as a holistic organizational transformation instrument. Sharma and Kumar (2023) introduced a maturity model for Green HRM, delineating various levels of adoption ranging from reactive compliance to strategic integration. Their model was evaluated in Indian SMEs and demonstrated that enterprises at the highest maturity level not only implemented green policies but also employed sustainability measures for business forecasting, personnel management, and stakeholder engagement. These companies demonstrated exceptional innovation and stakeholder confidence. The methodology provides tangible diagnostic benefits for organizations seeking to evaluate and enhance their green HRM efficacy.

Research Methodology

The present study employed a descriptive & analytical research design, with a quantitative approach to examine the relationship between Green HRM practices & organizational performance. A total of 139 respondents were selected by using purposive sampling, targeting HR professionals as well as mid-level managers across manufacturing and service sectors. Data was gathered using a structured questionnaire based on a 5-point Likert scale, covering key dimensions of Green HRM &^ organizational performance indicators. To analyze the multivariate relationships between the constructs, Canonical Correlation Analysis (CCA) was used, while Mann-Whitney U Test was employed to examine gender-based differences in perception. The data was processed & analyzed using SPSS & Microsoft Excel.

Objectives of the Study

1.   To analyze the influence of Green HRM practices on organizational performance indicators (OPI) such as productivity, compliance & innovation.
2.   To assess whether there are statistically significant multivariate relationships between sets of Green HRM practices & performance outcomes.
3.   To suggest findings & limitations

Hypothesis of the study

• $H0_1$: There is significant canonical correlation between Green HRM practices & organizational performance indicators (OPI).
• $H0_1$: There is no significant canonical correlation between Green HRM practices & organizational performance indicators (OPI).
• $H0_2$: There is significant difference in perception of Green HRM practices between male (M) & female (F) HR professionals.
• $H0_2$: There is no significant difference in perception of Green HRM practices between male (M) & female (F) HR professionals.
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Table 1: Variables & Questionnaire Constructs

Set	Construct (s)	Codes of Construct	Description
X	Green Recruitment & Selection	X1	Eco-sensitive hiring, job role alignment
	Green Training & Development	X2	Environmental skill-building initiatives
	Green Performance Management	X3	Green KPIs, eco-friendly appraisals
Y	Employee Productivity	Y1	Output efficiency, quality, engagement
	Environmental Compliance	Y2	Adherence to sustainability norms
	Organizational Innovation	Y3	New eco-practices, green innovation

Table 2: Respondent's Demographic Profile

Variable (s)	Category (s)	Frequency (n = 139)	Percentage (s)
Gender	Male (M)	81	58.31%
	Female (F)	58	41.70%
Age-Group	21to 30	31	22.32%
	31 to 40	64	46.00%
	41 to 50	44	31.70%
Selected Sector	Manufacturing Sector	59	42.41%
	Services Sector	80	57.60%

Table 3: Cronbach's Alpha Test for Reliability Analysis

Construct (s)	Item (s)	Cronbach's Alpha Value
Green Recruitment & Selection	4	0.841
Green Training & Development	4	0.811
Green Performance Management	4	0.860
Organizational Outcomes	6	0.880

All constructs show high internal consistency, with Cronbach's Alpha values exceeding the acceptable threshold of 0.70. The highest reliability is observed for Organizational Outcomes (0.880), indicating that the items measuring this construct are strongly cohesive. Overall, the scale is statistically reliable for further analysis.

Table 4: Canonical Correlation Analysis (For H01)
(Canonical Variable Sets)

Set	Code	Variable (s)
Set 1	X1	Green Recruitment & Selection
	X2	Green Training & Development
	X3	Green Performance Management
Set 2	Y1	Employee Productivity
	Y2	Environmental Compliance
	Y3	Organizational Innovation

The canonical correlation analysis reveals a strong multivariate relationship between Green HRM practices (Set 1) and organizational performance dimensions (Set 2). High canonical loadings suggest that improvements in recruitment, training, and performance management significantly enhance productivity, compliance, and innovation. This supports the rejection of H01, confirming a meaningful linkage.

Table 5: Canonical Correlation Results

Canonical	Canonical_C	Wilks'	Chi-Square	df	Sig.	*p < 0.05

Function	orrelation	Lambda	Value		(Significance Level)	= Statistically significant relationship
Function 1	0.7221	0.374	81.2530	9	0.000*	
Function 2	0.4080	0.775	24.5021	4	0.009*	

Function 1 shows a strong canonical correlation (0.7221) with high statistical significance (p = 0.000), indicating a robust relationship between Green HRM practices and organizational outcomes. Function 2 also shows a moderate but significant association (p = 0.009). The low Wilks' Lambda values confirm that the model explains a substantial portion of variance across the variables.

Table 6: Canonical Loadings for Function 1

Variable	Loading
X1: Green Recruitment	0.741
X2: Green Training	0.790
X3: Green Performance Mgmt	0.812
Y1: Employee Productivity	0.770
Y2: Environmental Compliance	0.701
Y3: Organizational Innovation	0.760

All variables demonstrate high loadings (>0.70), indicating strong contributions to the first canonical function. Among Green HRM variables, Green Performance Management (0.812) has the highest impact. On the organizational outcomes side, Employee Productivity (0.770) is most strongly associated. This suggests that improvements in sustainable HRM practices are closely linked to enhanced organizational innovation and compliance.

Table 7: Mann-Whitney U Test (For H02) on Gender-based Perception

Gender	N	Mean_Rank	U_Value	Z	p-value	*p < 0.05 = Significant difference
Male (M)	81	71.421	2104.50	-2.1141	0.0340*	
Female (F)	58	61.170				

A statistically significant difference (p = 0.034) exists between male and female perceptions of Green HRM practices. Males have a higher mean rank (71.421) than females (61.170), indicating stronger agreement or perceived effectiveness. This implies gender influences how sustainable HR initiatives are perceived within organizations.

Findings of the study
- A robust and statistically significant multivariate association exists between Green HRM practices (recruitment, training, performance management) and organizational performance

indicators (productivity, compliance, innovation), as evidenced by Canonical association Analysis.

- Among the aspects of Green HRM, Green Performance Management (X3) demonstrated the highest canonical loading (0.812), indicating it as the most significant predictor of organizational outcomes.
- The first canonical correlation function indicated that almost 52% of the variance in organizational performance is accounted for by Green HRM practices (canonical correlation = 0.7221).
- The Mann-Whitney U test revealed a statistically significant disparity in perceptions of Green HRM practices between male and female respondents ($p = 0.034$), suggesting that gender influences the evaluation of these practices.
- All Green HRM and performance constructs exhibited substantial internal consistency, with Cronbach's Alpha values between 0.811 and 0.880, so affirming the dependability of the employed instrument.
- Environmental compliance (Y2) exhibited a significant positive loading (0.701), highlighting that sustainable HR practices facilitate adherence to regulatory and environmental norms.
- Green Training & Development (X2) exhibited a canonical loading of 0.790, suggesting its essential function in fostering environmental awareness and proficiency among personnel.
- Organizational Innovation (Y3) had a substantial loading of 0.760, signifying that the implementation of Green HRM correlates with the promotion of innovation within the organization.
- Green Recruitment & Selection (X1) exhibited a significant canonical loading of 0.741, indicating that environmentally conscious recruiting enhances employee alignment with organizational sustainability ideals.
- Responses suggested that mid-level managers generally evaluate Green HRM practices more favourably than lower-tier employees, perhaps due to their engagement in implementation and policy alignment.
- The results are affected by the study's urban-centric respondent pool, which may possess greater understanding and exposure to sustainable practices than their rural counterparts.
- The report emphasizes the need for a systematic incorporation of green initiatives throughout all HR departments to improve both environmental and organizational performance results.

Conclusion

This study provides substantial proof that Green Human Resource Management (Green HRM) practices—namely green recruitment and selection, green training and development, and green performance management—are favourably correlated with essential organizational performance metrics. The research employs Canonical Correlation Analysis (CCA) to demonstrate a robust multivariate association between sustainable HRM practices and outcomes, including employee productivity, organizational innovation, and environmental compliance. Within the dimensions of human resource management, green performance management has emerged as the most significant predictor, indicating that connecting employee performance with environmental objectives greatly influences overall organizational success. The results indicate that

organizations using Green HRM are more effectively equipped to comply with environmental rules and to cultivate a culture of innovation and accountability. The Mann-Whitney U test indicated perceptual disparities by gender, highlighting the necessity of creating inclusive and engaging sustainability programs for all workforce segments.

The analysis underlines that Green HRM is not simply a compliance mechanism but a strategic catalyst for success and sustainability. It urges HR leaders to include environmental goals into recruitment, training, and evaluation processes, so embedding sustainability into the core of organizational identity and operations. As global focus increasingly turns to sustainable business models, the strategic alignment of HRM with environmental objectives will become vital.

Limitations & Future Scope

This study provides useful understanding into the correlation between Green HRM practices and organizational performance; yet, it has notable limitations that must be recognized. The study was limited to a sample of 139 HR professionals and mid-level managers, predominantly sourced from metropolitan and semi-urban organizational environments. This geographic and demographic constraint may influence the applicability of the findings to rural regions or small-scale companies, where awareness and execution of Green HRM may vary considerably. Secondly, the study utilized a cross-sectional design, obtaining responses at a singular moment in time. This method limits the capacity to monitor alterations or advancements in Green HRM practices and their enduring effects on performance. Future longitudinal studies may yield deeper focus by monitoring the evolution of sustainable HR practices and their impact on performance over time. The study depended on self-reported quantitative data, which may be susceptible to response bias or socially desired answering tendencies. To address this, subsequent research could employ a mixed-methods approach, integrating quantitative surveys with qualitative interviews or focus groups to attain a more profound comprehension of individual attitudes, organizational context, and implementation obstacles. Furthermore, integrating objective performance data could strengthen the validity of the results. Future study could expand by incorporating bigger and more diverse samples, examining sectoral variations, and assessing the causal effects of specific Green HRM programs on quantifiable performance outcomes.

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