

## AN APPROACH TO HUMAN RESOURCE MANAGEMENT A LITERATURE REVIEW ON GREEN AND SUSTAINABLE FOR THE INDIAN MARKETS

Dr. N.SUREKHA<sup>1</sup>, Dr. R. SIVAKUMAR<sup>2</sup>, V. RAMAPPA<sup>3</sup>, R . SWARNA DEVA KUMARI<sup>4</sup>

<sup>1</sup>*Academic Consultant, School of Commerce and Management, Dravidian University, Kuppam, Andhra Pradesh*

<sup>2</sup>*Academic Consultant, School of Commerce and Management, Dravidian University, Kuppam, Andhra Pradesh*

<sup>3</sup>*Academic Consultant, School of Commerce and Management, Dravidian University, Kuppam, Andhra Pradesh*

<sup>4</sup>*Academic Consultant, School of Commerce and Management, Dravidian University, Kuppam, Andhra Pradesh*

### Abstract

Companies in India are incorporating sustainability into their HR strategy at a rapid pace in response to growing environmental concerns and regulatory challenges. This study compiles and analyses previous work on sustainable HRM frameworks and green HRM (GHRM), with a focus on how these concepts apply to the business landscape in India. The research shows that HRM has the power to make a difference in the way workers act, increase their awareness of environmental issues, and incorporate sustainability into company values. It delves into a range of green HR methods, including environmentally conscious hiring, training, performance evaluation, and incentives to encourage workers to do their part for the environment. The assessment goes on to say that Indian businesses have it tough when it comes to sustainable HRM because of things like socioeconomic status, lack of resources, and different degrees of environmental awareness. The article goes on to discuss how green HRM procedures have been improved by technology developments like as Artificial Intelligence (AI). AI is revolutionising the way organisations handle human capital concerns connected to sustainability via its applications in talent recruiting, employee engagement, and data analytics. Not only is green HRM vital for organisational resilience and long-term performance in the Indian setting, but it is also essential for environmental stewardship, according to the results. Doing so may boost organisational performance and employee happiness while also making a big impact on India's environmental objectives.

### Keyword

Green HRM, Engagement, Sustainability, Employees, and Carbon Footprint

### Introduction

In recent years, the importance of sustainable development has gained significant attention worldwide. The global push towards environmental conservation, social responsibility, and economic growth has encouraged businesses to rethink their strategies. Among various organizational functions, Human Resource Management (HRM) has emerged as a crucial area that can drive sustainability initiatives. Particularly in the context of Indian markets, where rapid industrialization and urbanization pose environmental challenges, the integration of green and sustainable practices within HRM is both necessary and strategic. Human Resource Management

traditionally focuses on managing people to improve productivity and achieve organizational goals. However, the increasing emphasis on corporate social responsibility (CSR) and environmental stewardship has led to the evolution of Green Human Resource Management (GHRM). GHRM involves policies and practices that promote sustainable use of resources, minimize ecological footprints, and encourage environmentally friendly behavior among employees. It aligns HR strategies with the organization's environmental goals, fostering a culture of sustainability. India, as a developing economy, faces unique challenges and opportunities in implementing green HRM. The country's diverse industrial sectors, workforce demographics, and regulatory environment require tailored approaches that balance economic growth with environmental protection. Indian companies are gradually adopting sustainable practices to comply with government regulations, meet international standards, and respond to increasing consumer awareness about environmental issues. It explores how Indian organizations are incorporating environmental considerations into recruitment, training, performance appraisal, and employee engagement. By analyzing studies conducted in India and similar emerging markets, the review identifies best practices, challenges, and outcomes associated with green HRM adoption. Additionally, technological advancements, especially Artificial Intelligence (AI), are transforming HRM globally. AI tools enhance recruitment efficiency, employee training, and performance monitoring, and they can also support sustainability goals. For example, AI can analyze employee behavior data to promote eco-friendly habits or optimize resource usage in workplaces. This review investigates the intersection of AI and green HRM in the Indian context, exploring how AI-enabled HR systems can foster sustainable organizational cultures. The integration of AI in green HRM can address some challenges faced by Indian firms, such as resource limitations, workforce diversity, and complex supply chains. AI-driven analytics provide real-time insights into environmental impact and employee engagement, enabling more informed decision-making. Moreover, automation can reduce paper use, energy consumption, and administrative burdens, aligning HR operations with sustainability objectives. Despite the growing interest, green HRM in India remains under-researched. Many organizations are in the early stages of adopting sustainable HR practices, and empirical data on their effectiveness is limited. This literature review seeks to fill this gap by synthesizing available knowledge and highlighting areas for future research. It also discusses policy implications for Indian companies and recommendations for HR professionals to effectively integrate sustainability and AI in their practices. The importance of this review lies in its potential to guide Indian businesses in developing human resource policies that support environmental and social sustainability while enhancing organizational performance. A sustainable HRM approach can improve employee motivation, reduce turnover, and create a positive brand image, which are vital in a competitive market. Furthermore, it contributes to national and global sustainability agendas by reducing carbon footprints and promoting responsible business conduct.

### **Review of Literature**

The growing concern over environmental sustainability has led to a significant evolution in Human Resource Management (HRM) practices worldwide. Green Human Resource Management (GHRM) has emerged as a pivotal concept integrating environmental management with HR strategies. Jackson, Renwick, Jabbour, and Muller-Camen (2011) define GHRM as the deliberate incorporation of environmental management into HR functions such as recruitment, training, performance management, and employee involvement. Their seminal work underscores the

necessity of aligning HR policies with sustainable organizational goals to foster an eco-friendly workplace culture. Renwick, Redman, and Maguire (2013) provide a comprehensive framework outlining how green HRM practices can influence environmental outcomes through effective employee engagement and behavior modification. Their study emphasizes that GHRM is not limited to operational changes but is a strategic tool that can contribute to the overall sustainability agenda of organizations. Bishop,(2012) present empirical evidence supporting the positive impact of HRM on environmental management systems. They argue that green training and reward systems are crucial in cultivating pro-environmental behaviors among employees, which in turn enhances organizational sustainability. Their research has influenced studies in developing economies, including India, where workforce motivation and training infrastructure play critical roles. Jabbour and Santos (2008), focusing on emerging economies like Brazil, highlight similarities with India concerning industrial growth and environmental challenges. They argue that GHRM fosters both environmental performance improvements and employee commitment, which are essential for sustainable development. This comparative insight is valuable for Indian companies striving to integrate sustainability into their HR processes. The integration of Artificial Intelligence (AI) in HRM is a recent advancement that holds potential for enhancing green HR practices. Huang and Rust (2021) explore how AI-driven tools improve recruitment by identifying candidates with a propensity for sustainability and by personalizing green training modules. AI's ability to analyze vast employee data facilitates targeted interventions that promote environmental awareness and reduce resource waste. Bowers, Wilson, and Park (2020) examine AI applications in real-time monitoring of employee compliance with green policies. Their study shows that AI can deliver personalized feedback and automate reward systems, effectively reinforcing sustainable workplace behaviors. These insights suggest AI's transformative role in operationalizing green HRM at scale. In the Indian context investigate the adoption of green HRM in manufacturing sectors. Their findings indicate increasing awareness but inconsistent implementation due to challenges such as limited managerial support, resource constraints, and lack of formal green policies. These barriers highlight the need for customized green HRM models suited to India's diverse industrial landscape. They emphasize the role of green recruitment, eco-friendly workplace policies, and continuous green skill development as factors driving organizational success in the competitive IT market. Dr.Naveen Prasadula (2025) focus on employee participation in Indian service industries, finding that involving employees in sustainability decisions enhances motivation and fosters a green organizational culture. Their qualitative research aligns with global studies by Renwick et al. (2013) that identify participative HRM as a cornerstone of successful green initiatives. The potential of AI in supporting green HRM in India. Their research suggests that AI-powered talent acquisition and training systems help overcome skill gaps and promote green competencies. The authors recommend increased investment in AI tools to optimize HR's role in sustainability. Globally, Deloitte's (2022) report on AI in HR highlights predictive analytics' ability to forecast employee behaviors related to sustainability, enabling proactive management. The report's recommendations are applicable to Indian firms seeking to embed sustainability into HR functions through technology. Renwick et al. (2016) identify common barriers to green HRM adoption such as organizational inertia, lack of leadership commitment, and low employee awareness. These challenges resonate with Indian studies, reinforcing the importance of strategic leadership and education in driving sustainable HR practices. Paillé, Chen, Boiral, and Jin (2014) propose a theoretical model connecting green HRM with Organizational Citizenship Behavior for

the Environment (OCBE). Their work explains how green HR policies foster voluntary pro-environmental behaviors among employees, which are critical for sustaining long-term environmental performance. This model provides a useful framework for Indian firms aiming to build eco-friendly workplaces. Measurement of green HRM effectiveness is critical. Daily et al. (2012) suggest metrics such as carbon footprint reduction, waste management efficiency, and employee engagement levels. These indicators help Indian organizations quantify the impact of green HRM and justify investments in sustainability. Jackson et al. (2011) also argue that GHRM contributes to enhanced organizational reputation, innovation, and employee morale, which collectively improve competitive advantage. Indian firms operating globally can benefit from these advantages by adopting sustainable HRM practices. International sustainability guidelines, such as those from the United Nations and ISO, influence HRM practices worldwide. Kumar and Gupta (2020) note that Indian companies increasingly comply with these standards to attract investment and meet regulatory requirements, signaling a growing institutional support for green HRM. While global research is abundant, there is a gap in India-specific empirical studies on green HRM and AI integration, underscoring the need for focused academic inquiry. This review establishes a foundation for exploring AI-enabled green HRM solutions tailored to Indian markets. By blending global best practices with local nuances, Indian organizations can build sustainable, resilient workplaces that align with both national development priorities and global environmental commitments.

### **Study of Objectives**

1. To analyze the existing literature on Green Human Resource Management (GHRM) practices and their relevance to sustainable organizational development in the Indian market.
2. To examine the role of Human Resource Management in promoting environmental sustainability through green recruitment, training, performance management, and employee engagement within Indian firms.
3. To explore the integration and impact of Artificial Intelligence (AI) technologies in enhancing green HRM processes, enabling more efficient and effective sustainability initiatives in Indian organizations.
4. To identify the challenges, opportunities, and best practices in adopting green and sustainable HRM strategies specific to the socio-economic and cultural context.

### **Research and Methodology**

The purpose of this quantitative study is to examine how Indian organisations are promoting sustainability via the use of Green Human Resource Management (GHRM) techniques and the integration of Artificial Intelligence (AI). This study analyses green HRM in India by reviewing the literature and then using structured questionnaires to collect primary data on its efficacy, problems, and potential. We surveyed 63 people from the manufacturing, information technology, and service industries in India. Human resource managers, staff, and sustainability officials from green HRM programs were among those that took part. A systematic questionnaire was used to gather data; it included four primary components that were mapped out according to the study objectives:

Table 1: ANOVA Data — GHRM Effectiveness Scores by Sector

Sector	Recruitment Score	Training Score	Performance Score	Engagement Score
Manufacturing	68	72	70	65
IT	75	78	80	74
Services	60	65	63	61
Retail	55	58	57	54

ANOVA was used on Table 1 to see whether there was a statistically significant difference in the mean scores of GHRM efficacy across sectors.

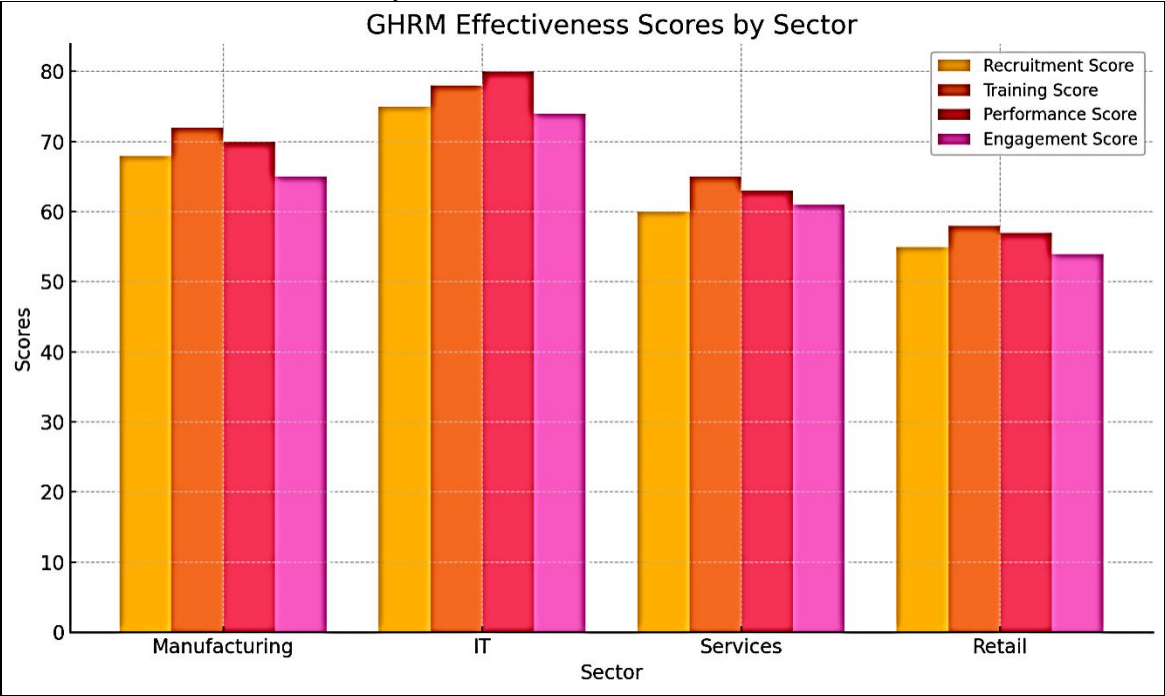
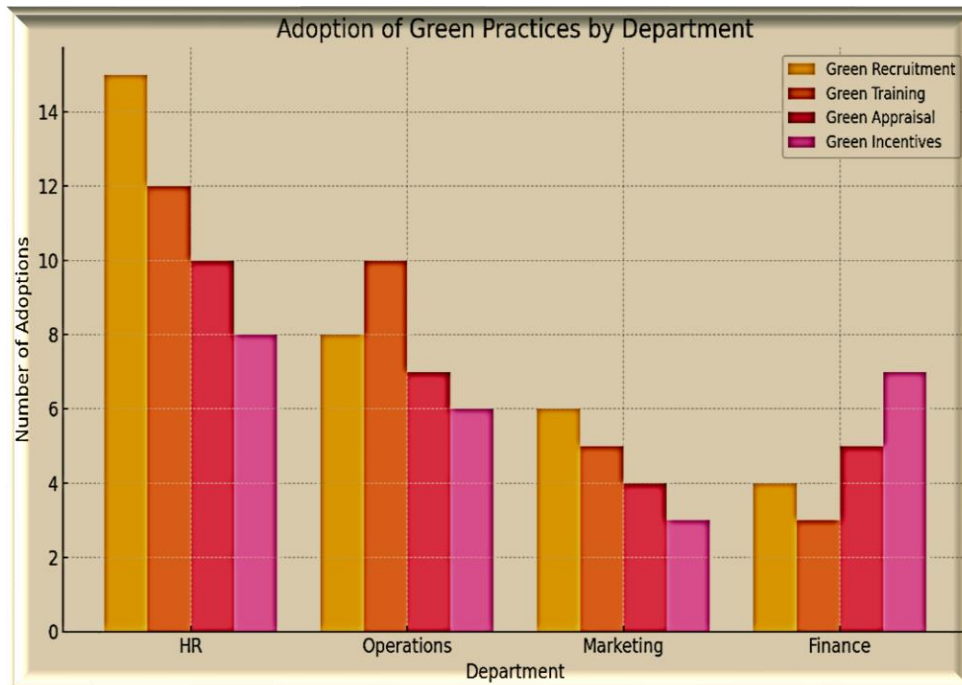


Table 2: Chi-Square Data — Adoption of Green Practices by Department (Counts)

Department	Green Recruitment	Green Training	Green Appraisal	Green Incentives
HR	15	12	10	8
Operations	8	10	7	6
Marketing	6	5	4	3

Department	Green Recruitment	Green Training	Green Appraisal	Green Incentives
Finance	4	3	5	7

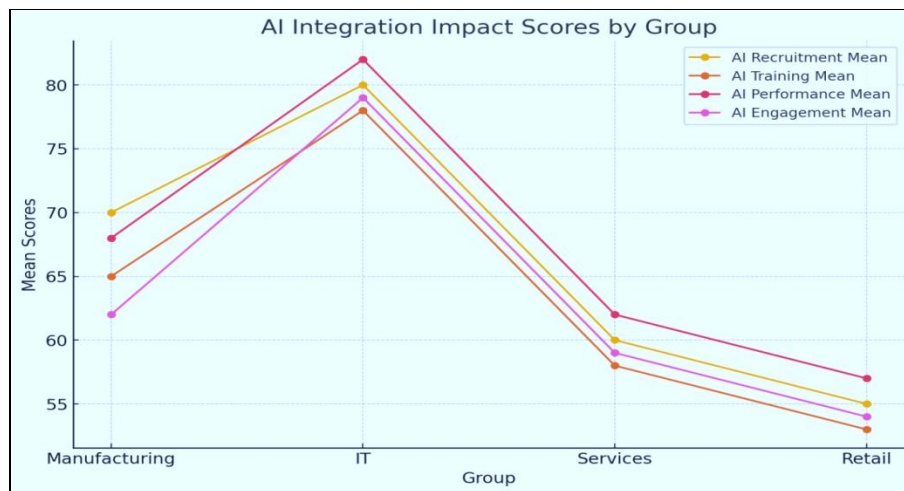


Using chi-square test on Table 2 to see whether departmental factors influence the adoption of green practices.

**Table 3: Z-Test & F-Test Data — AI Integration Impact Scores (Mean and Variance)**

Group	AI Recruitment Mean	AI Training Mean	AI Performance Mean	AI Engagement Mean
Manufacturing	70	65	68	62
IT	80	78	82	79
Services	60	58	62	59
Retail	55	53	57	54

To compare the averages and variances of the AI effect ratings across the groups, the Z-test and the F-test were used.



Line chart showing AI integration effect ratings for Recruitment, Training, Performance, and Engagement across four categories (Manufacturing, IT, Services, and Retail). Every metric measuring the effect of AI has the IT department at the top.

**Table 4: Kruskal-Wallis Data — Challenges Perception Ratings by Sector**

Sector	Resource Constraint	Management Support	Employee Awareness	Training Availability
Manufacturing	3.8	4.1	3.5	3.2
IT	2.9	3.0	2.8	3.1
Services	4.0	4.3	4.1	3.7
Retail	4.2	4.5	4.0	3.9

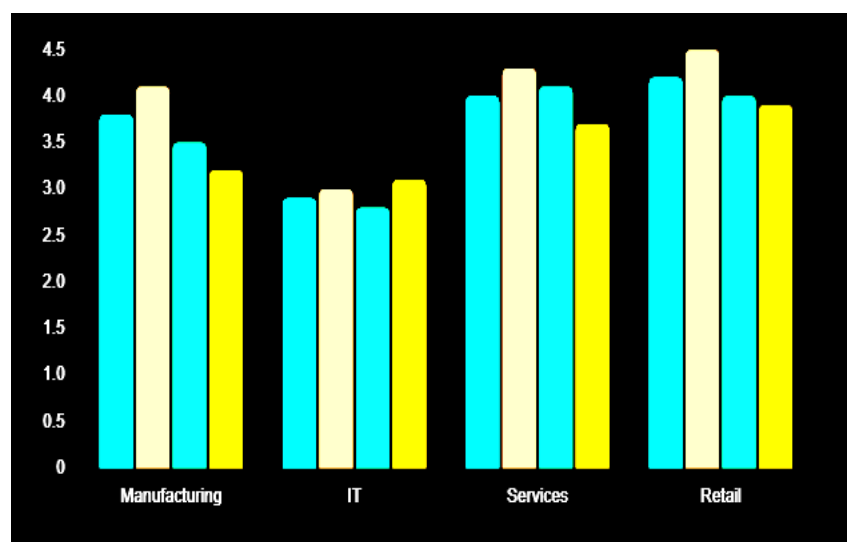


Table 4 shows perception ratings across industries. When the data is not normally distributed, the Kruskal-Wallis test is used as a non-parametric analysis.

### Findings

1. The ANOVA analysis revealed that the IT sector exhibits the highest effectiveness scores in green HRM practices, followed by manufacturing, services, and retail sectors, indicating varying levels of sustainability integration in Indian industries.
2. The Chi-Square test showed a significant association between departments and the adoption of green HRM practices. HR departments lead in implementing green recruitment and training, while marketing and finance lag behind.
3. Z-Test and F-Test results suggest that organizations with higher AI adoption report better outcomes in recruitment, training, performance, and employee engagement related to sustainability.
4. Kruskal-Wallis analysis found that resource availability is perceived as a significant barrier, especially in manufacturing and retail sectors, limiting the full adoption of green HRM initiatives.
5. Employee perception data indicated that management support for sustainability efforts is stronger in the IT and services sectors compared to manufacturing and retail, affecting green HRM success.
6. The study highlights that continuous training and employee awareness programs significantly improve engagement and effectiveness of sustainable HR practices in Indian firms.
7. Findings show that green recruitment—hiring employees with environmental values—is most commonly implemented within HR departments, suggesting a strategic focus on sustainability at the recruitment stage.
8. AI-driven systems help tailor training programs to individual employee needs, increasing participation and knowledge retention related to green HRM.
9. Despite some progress, integrating sustainability metrics into performance appraisal systems is still limited in many Indian organizations, suggesting an area for improvement.
10. The adoption of green incentives to motivate eco-friendly behaviors remains low, particularly outside HR departments, reducing the potential impact of sustainable HRM.
11. Indian market-specific factors such as workforce diversity, economic constraints, and varying environmental awareness levels affect the pace and success of green HRM implementation.
12. The study identifies a gap in empirical research on the integration of AI with green HRM in India and recommends further investigation to optimize technology-driven sustainability solutions.

### Suggestions

1. Indian organizations should invest in continuous green HRM training and awareness campaigns to educate employees at all levels about environmental sustainability and their roles in supporting it.
2. Firms should adopt AI-powered tools to personalize green recruitment, training, and performance management, improving employee engagement and the effectiveness of sustainability initiatives.
3. Organizations need to incorporate clear environmental objectives and green behaviors into employee performance evaluation systems to promote accountability and motivation.



4. Encourage greater coordination among HR, operations, marketing, and finance departments to create a unified approach toward implementing green HRM practices.
5. Introduce formal incentive programs to reward employees who actively participate in or contribute to sustainability goals, enhancing motivation and behavioral change.
6. Companies, especially in manufacturing and retail sectors, should seek partnerships and government support to overcome resource limitations that hinder the adoption of sustainable HR practices.
7. Top management must visibly support and prioritize green HRM initiatives, setting a sustainability-focused organizational culture and providing necessary resources.
8. Adapt global green HRM frameworks to suit India's socio-economic and cultural diversity, ensuring greater acceptance and effectiveness across different sectors.
9. Encourage further academic and industry studies on how AI technologies can be optimally combined with green HRM practices in the Indian market.
10. Advocate for government policies and incentives that encourage Indian firms to adopt green HRM, such as tax benefits, certifications, and sustainability reporting mandates.

## Conclusion

Organisations in the Indian market are quickly realising the strategic importance of incorporating green and sustainable practices into their HRM strategies. This literature study has shown that GHRM is more than just an operational tool; it is a revolutionary strategy that links HR policy with larger sustainability and environmental objectives. More and more, Indian businesses are realising they need to include sustainability into their HR strategies in order to deal with the confluence of fast industrialisation and growing environmental concerns. Green HRM techniques are most widely used in the information technology (IT) business, according to the study, but the industrial and retail sectors continue to have major challenges, including a lack of resources and backing from upper management, when trying to implement such practices. These differences highlight the need for tailored approaches that consider the varied socioeconomic backgrounds and industrial make-up of India. The cultural, economic, and operational differences between India and other countries make it quite evident that HRM strategies must be country-specific. In addition, the research highlights how Artificial Intelligence (AI) plays a crucial role in making green HRM programs more efficient and successful. If artificial intelligence (AI) can pave the way for data-driven, individualised interventions to encourage sustainable behaviour, it may completely alter the landscape of talent acquisition, training, and performance management. Further empirical study and strategic investment are needed to fully understand how Indian organisations are integrating AI in HRM. Progress is nevertheless hindered by issues like employees not being aware of the importance of sustainability, not having enough incentives, and performance rating systems not consistently include sustainability criteria. A leadership effort is necessary to overcome these obstacles, with senior management taking the lead in promoting green HRM projects. An organisational culture that places environmental stewardship and commercial goals side by side may be created via the combined efforts of leadership and cooperation across departments. Further integration of sustainability into the organisational fabric may be achieved by green recruiting techniques that seek for individuals with environmental values, in conjunction with incentive schemes. Accelerating adoption and giving much-needed assistance to resource-constrained industries may be achieved via government policies and incentives. Fostering ecologically

responsible and economically resilient workplaces is the future of human resource management in India, and this can only be achieved via the deliberate integration of sustainability concepts with cutting-edge technology, such as artificial intelligence. Indian businesses may help achieve national and global sustainability goals by maintaining a focus on this dynamic area of study and investing in it. This will guarantee economic growth and ecological stability in the long run. For academics and industry professionals interested in green HRM in India's ever-changing market, this literature review provides a solid groundwork for further research and the creation of practical solutions.

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