

Green Human Resource Management—A Synthesis

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Abstract: Green HRM involves a variety of organizational policies, practices, and processes that encourage the use of environmentally friendly methods that could be advantageous to the individual, business, and the environment. Based on the systematic review of empirical articles collected from Scopus, the study identified and analyzed 31 empirical studies published since 2010. The current study was undertaken to identify various factors and measuring tools of GHRM. Based on the Ability–Motivation–Opportunity (AMO) theory and the review methodology, the study identified various factors and measuring tools of GHRM. A few identified factors include Green Recruitment and selection, Green Training and Development, Green compensation management, Green performance management, Green Employee empowerment and participation, and Green Employee relations. The present research has thus opened fresh avenues for future studies. In addition, the study presents different perspectives and suggestions for future research that could facilitate the inclusion of sustainability initiatives in the organizational agenda.

Keywords: green human resource management (GHRM); environmental management; sustainability; green goals; environment

1. Introduction

In the current scenario, environmental problems are an immense challenge for humanity as the environment is degrading because of the industrial revolution throughout the world. Therefore, a business needs to adopt a proactive approach with environmental management practices at the workplace [1]. Furthermore, it is essential for organizations to feel a sense of responsibility toward the environment and its economic goals [2]. This environmental orientation leads the organization to adopt green policies and to produce environment-friendly products. Consequently, an organization needs to deploy a formal Environmental Management System (EMS) [3]. Paillé [4] revealed the association of Environmental Management with HRM and found “Organizational citizenship behavior for the environment fully mediates the relationship between strategic human resource management and environmental performance”. In line with this, other authors also mentioned that appropriate HRM practices lead to environmental performance attainment [5,6]. Several other authors have also highlighted the relationship of environmental management with HRM [7–10].

Green Human Resource Management (GHRM), identified as the integration of environmental management with Human Resource Management (HRM), is of recent origin [11]. It is a discipline that combines environmental aspects with HRM policies and practices, thereby facilitating sustainability [5,7,10,12–18].

With environmental issues plaguing humanity in all walks of life, businesses need to adopt a proactive approach at workplaces [19]. They need to have a sense of unqualified responsibility towards the environment [20]. Achieving environmental objectives involves the adoption of green policies in different functional aspects of HRM [3,10,11,21–27]. Integrating environment management and HRM practices has been identified to facilitate sustainability [4,7,11,28]. GHRM practices control the adverse environmental outcome as



Citation: Faisal, S. Green Human Resource Management—A Synthesis. *Sustainability* **2023**, *15*, 2259. <https://doi.org/10.3390/su15032259>

Academic Editors: Haider Mahmood and Najia Saqib

Received: 13 December 2022

Revised: 23 January 2023

Accepted: 23 January 2023

Published: 26 January 2023



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they create positivity among employees towards the environment. The end goal of GHRM is to enhance sustainable organizational performance [29].

GHRM calls for involving employees in environmental decisions, creating environmental awareness, and promoting environment-friendly behaviors. It makes employees more concerned about the environment, transforms them to “green employees”, and ensures their whole-hearted contributions toward attaining organizational goals [9]. To achieve organizational green goals, all HRM practices must be performed with green initiatives in mind [11,30,31] and reduce wastage [32,33].

There are significant gaps in the current literature that need to be addressed. A cursory look at the GHRM literature shows that conceptualizations are either narrow or not based on academic theory [34,35]. Theoretical papers have identified different GHRM practices with little or no convergence. Conversely, many theoretical papers have identified additional HRM practices that might support implementing environmental initiatives. They include recruiting, performance evaluation, pay/reward systems, employee empowerment/engagement, and organizational learning e.g., [5,10,36]. However, frameworks that integrate a more comprehensive set of GHRM practices with GSCM e.g., [37] still lack an overarching theory and empirical validation [38]. A few scholars and management experts have attempted to examine the current position of GHRM. For instance, Renwick et al. [10] studied research articles published from 1988 to 2011, categorized the existing literature systematically, and highlighted the role of GHRM in people management. They further highlighted the roadmap and future research agenda for GHRM. Similarly, Opatha and Arulrajah [9] provided a basic understanding of GHRM, highlighting the necessity of conceptualizing and operationalizing the numerous associated constructs. Ren et al. [39] reviewed literature from 2008 to 2017. They focused mainly on the conceptual foundations of GHRM and its working definitions. The above studies failed to address the recent trends and present the various scales used to measure GHRM. The present study addressed these shortcomings and has presented a broad-based review of the GHRM literature up to date. Another uniqueness of the present study is that it has also reviewed and presented an overall view of the available tools used to measure the concept. Thus, the present study has focused on exploring the various factors and measuring tools of GHRM based on available literature and different empirical studies conducted by other researchers in this field. The following sections present the review conducted by the researcher and attempt to accomplish the study’s objectives.

2. Review of Literature

2.1. What Is GHRM?

In the context of HRM, Green involves preserving and conserving the natural environment, avoiding or minimizing environmental pollution, and generating looking-like natural places. Therefore, if an employee acts upon these aspects, such an employee is considered a green employee [9]. Haden [40] and Saeed [17] stated that although GHRM includes different practices like HRM, it moves ahead as it is more specific about sustainability and waste reduction. According to Opatha [9], GHRM refers to:

“Policies, practices, and systems that make employees of the organization green for the benefit of the individual, society, natural environment, and the business”.

Ren [39] opines that when HRM involves different policies to protect the environment, it is termed “Green Human Resource Management”. Renwick [10] studied available literature based on the Ability–Motivation–Opportunity (AMO) theory and highlighted the role of GHRM in the people management process. They found that GHRM practices are strongly associated with three essential elements: developing green ability; motivating green employees; and providing green opportunities. Table 1 summarizes the definitions of Green HRM.

Table 1. Definitions of Green HRM.

Opatha [8] (p. 15).	“All the activities involved in development, implementation and ongoing maintenance of a system that aims at making employees of an organisation green. It is the side of HRM that is concerned with transforming normal employees into green employees so as to achieve environmental goals of the organisation and finally to make a significant contribution to environmental sustainability”
Jabbour [19] (pp. 147–148)	“Involves systemic, planned alignment of typical human resource management practices with the organizations environmental goals”
Opatha and Arulrajah, [9] (p. 104)	“the policies, practices and systems that make employees of the organization green for the benefit of the individual, society, natural environment, and the business.”
Masri and Jaaron [3] (p. 474)	“Human Resources Management (HRM) practices to reinforce environmentally sustainable practices and increase employees’ commitment on the issues of environmental sustainability.”
Renwick et al. [11]	“Management of human resources that integrates the aspects of corporate environmental management.”
Shah [26] (p. 771)	“The incorporation of green management elements into job design, staffing, training and development, motivation, and maintenance functions of human resource management (HRM) to improve employee pro-environmental behavior, meet employee expectations, and achieve organizational objectives.”
Shen et al. [41] (p. 594)	“A set of HRM practices that organizations adopt to improve employee workplace green performance.”
Zaid et al. [31] (p. 88)	“Bunch of human resource management practices which play vital role in performance of manufacturing firms with green hiring, green training and involvement and green performance and management and compensation.”
Kramar [42]	“HRM activities that enhance positive environmental outcomes.”

Based on the above table, it is clear that GHRM unifies different HRM practices to achieve environmental goals. It makes different policies to make employees more concerned about the environment and is vital in moving the organisation towards sustainability.

The above definitions emphasized that GHRM aims to develop green organizations, which is why different policies are designed and implemented to turn normal organizations into green organizations. Moreover, these green organizations require employees who can easily understand the organizational green requirement. Further, all these factors contribute towards the end goal of environmental sustainability.

2.2. The Present and Future of GHRM

Large companies, especially in developed nations, currently implement GHRM practices to attain green organizational objectives. GHRM ensures environmental sustainability and makes the organization more competitive as employees and organizations are involved in green initiatives [43]. Companies need to apply green practices effectively to achieve sustainability [44]. Though organizations of the developed world implement GHRM, developing countries need to integrate GHRM with HRM functions systematically. This would help deal with environmental and related issues effectively. The vast literature suggests

that companies can achieve environmental goals and deal with environmental problems by implementing GHRM [9–11,13–16].

There is a need for more research on GHRM in developed nations with a paramount focus on developing nations, as they comprise big manufacturing units with more water, electricity, and CO₂ emissions. With the help of GHRM practices, employees would have more environmental concerns through which the natural eco-system can be maintained effectively [43]. Thus, sustainability is a big issue that needs to be dealt with appropriately, and GHRM leads to developing organizational sustainability. Green HR practices reduce paperwork and promote the digitalization of documentation, online recruitment, and energy-efficient office spaces. Environmental protection awareness is increasing the world over, and as a result, governments have also enacted regulations to achieve environmental sustainability goals. Due to its potential to gratify environmental needs while simultaneously enabling businesses to have a win–win situation, GHRM has attracted a lot of professionals' attention, giving them a sustainable competitive edge over their opponents. In this context, there is excellent scope for GHRM.

2.3. Factors of GHRM (Green HRM Practices)

GHRM includes the most widely used functions and practices adopted to attain the organization's environmental objectives. A cursory examination revealed vast differences between the studies about the factors of GHRM. Based on these studies, the factors identified are presented in Table 2. The GHRM factors were identified after careful analysis of multiple empirical studies on GHRM.

Table 2. Factors of GHRM.

Sl No	Variables/Factors	Author
1.	Green Job Design and Analysis	Jabbour et al. [44], Jabbour [45], Masri and Jaaron [3], Shah [26]
2.	Green Recruitment and Selection	Gholami et al. [23], Gupta [20], Gureci et al. [24], Jabbour et al. [44], Jabbour [45], Longoni et al. [14], Masri and Jaaron [3], Mukherjee et al. [25], Shah [26], Tang et al. [27], Ercantan and Eyupoglu [46].
3.	Green Training and Development	Bangwal et al. [47], Dumont [48], Gholami et al. [23], Gupta [20], Gureci et al., [24], Jabbour et al. [44], Jabbour [45], Longoni et al. [14], Masri and Jaaron [3], Mukherjee et al. [25], Shah [26], Tang et al. [27], Yu et al. [49], Ercantan and Eyupoglu [46].
4.	Green Performance Management	Dumont [48], Gholami et al. [23], Gupta [20], Gureci et al. [24], Jabbour et al. [44], Jabbour [45], Longoni et al. [14], Masri and Jaaron [3], Mukherjee et al. [25], Shah [26], Tang et al. [27], Ercantan and Eyupoglu [46].
5.	Green Pay and Rewards	Dumont [48], Gholami et al. [23], Gupta [20], Jabbour et al., [44], Jabbour [45], Masri and Jaaron [3], Mukherjee et al. [25]. Tang et al. [27], Ercantan and Eyupoglu [46].
6.	Green Job Involvement	Gholami et al. [23], Gupta [20], Gureci et al. [24], Mukherjee et al. [25], Tang et al. [27], Yu et al. [49], Ercantan and Eyupoglu [46].
7.	Green Organization Culture Management	Gholami et al. [23], Gupta [20], Jabbour et al. [44], Jabbour [45], Masri and Jaaron [3], Mukherjee et al. [25].

A few common factors derived from the above table are now discussed in detail:

1. **Green Job Design and Analysis:** This is a vital function to initiate the implementation of GHRM. In green job design and analysis, organizations need to determine the nature of the job, role, and responsibilities per the organization's green objectives [3,26,44,45]. Furthermore, according to Arulrajah [29], environmentally concerned companies need to create new job positions specifically to deal with the environmental aspect of the organization. Job descriptions have to lay down different environment-related job details and responsibilities, while specifications specify the job's social and technical requirements [10,11].

2. **Green Recruitment and Selection:** Many researchers firmly believe that green recruitment and selection is the foundation of a practical GHRM implication [7,11,12,26]. Green recruitment and selection are now discussed:

a. *Green Recruitment:* The motive of green recruitment is to search for and encourage environment-aware candidates to apply for the available or future openings of the organization [3,20,24,26,27]. This is the first phase of adopting GHRM practices that are essential to fascinate the young talents. Employers highlight their policies through the company website, which leads to employer branding [10,24]. Often, web-based recruitment specifies the potential applicant's environmental concerns and company expectations [50]. The Job seekers scan this information, and if it matches their values and aspirations they look forward to applying with these environment-friendly companies.

b. *Green Selection:* Green selection is selecting suitable candidates with appropriate green knowledge using different selection tools [3,20,21,24,51]. Effective green recruitment enables a talent pool for selection, allowing only suitable candidates to apply for the job. Yusliza et al. [18] mentioned that green selection is vital in attaining environmental goals. It is also cost-effective to select environmentally concerned employees initially to save unnecessary training costs. Renwick et al. [10] also advised selecting only those candidates who are well aware of environmental aspects and have a positive attitude towards adopting constructive change. According to Arulrajah et al. [15] Green selection process ensures the applicant's suitability according to predetermined selection criteria decided by the organization. Practical selection tools must be used to assess the applicant's green awareness and green values [32]. Therefore, interviewer examines the applicant's environment-related knowledge during the interview and asks environment-related questions.

3. **Green Training and Development:** The success of acquiring green employees becomes meaningful if the organization effectively trains these employees [52]. Therefore, training needs analysis is essential before imparting training [53]. The motive of Green training is to enhance the knowledge and abilities of the workforce in the successful implication of environmental management practices at the workplace [34,51]. Therefore, the organization should provide green training to all employees irrespective of whether their job is related to the environment or not. According to Renwick [10] and Jackson [7], the organization must provide explicit training on effective energy utilization, waste management, and green skill development. In addition, the organization needs to adopt a job rotation system [11]. Tang [27] proposed three elements of green training: knowledge management, green awareness, and environmental protection activities, improving employee performance.

4. **Green Performance Management:** Green performance management ensures employees' different activities and outputs per the organization's predetermined green goals. Without this, it is not easy to measure long-term performance [9]. The company performance appraisal should cover environment-related criteria like environmental responsibilities and policies to measure the employee's performance [10]. These measures make employees more liable to deal with environmental issues and improve their environmental performance [54]. The managers should set specific and realistic green targets for their division or department and communicate their policies and accountability. The manager should be accountable for any deviation from the environment management-related targets.

5. **Green Reward System:** According to Renwick et al. [10], the green reward system should be aligned with the organization's environmental objectives. Amrutha and Geetha [55] mentioned that green rewards are limited to improving environmental perfor-

mance, creating green employees, and improving daily employee behavior. Yusliza [18] stated that according to social exchange theory, appropriate rewards and recognition given by management regularly motivate employees towards continuous environment-friendly behavior. The green reward system deals with financial and non-financial rewards offered to employees to keep them embedded within the organization to accomplish environmental goals [5,12]. The appropriate green reward system adopted by the organization leads to employee engagement in green activities and effective employee performance [56,57]. Some companies include environmental assessments in their salary reviews to encourage employees toward the green goals of the organization [7]. According to Yusliza [18], Green rewards can be financial or non-financial. Many organizations give financial rewards such as cash prizes, bonuses, and incentives. On the other hand, non-financial rewards comprise special recognition or other awards. Finally, Opatha [8] mentioned that all these awards encourage employees to perform better.

6. Green Job Involvement: The performance of employees could be improved once they are fully involved with the organization's green initiatives [10,27,58]. Supervisors need to welcome the green suggestions given by the employees and ensure effective participation during meetings. Tang et al. [27] identified five aspects of green involvement that can enhance employee involvement: First, a well-defined green vision guides employees in dealing with different environmental issues including a green learning climate, and various communications to keep employees engaged with environmental aspects. Second, employees can be involved in various green practices like the problem-solving team and other green activities. Next, encouraging green involvement means encouraging employees to participate in quality improvement and problem-solving activities of environment-related issues in the production process. Finally, top management's communication towards the green objectives of the organization encourages employees and leads to employee empowerment [36].

7. Green Organizational Culture: The scope of GHRM is not just limited to acquiring, training, and retaining green employees. It is much broader as it builds strong green organizational culture. According to Amrutha and Geetha [55], green culture creates a safe and healthy work environment for the employee's wellbeing. Once environmental concern is deeply rooted in organizational culture, the employees would become self-concerned about the organization's green objectives and exhibit unusual behavior. To build a green organization culture, top management must prioritize environmental aspects in their goals. It also communicates to employees from time to time with the help of different programs. It is necessary to regularly provide feedback to employees about their environmental performance, and negative performance needs to be addressed [11]. Top management should give autonomy to the employees to do innovative things and new measures to improve that could lead to a higher level of participation, motivation, and involvement [36,59].

2.4. Benefits of GHRM

In the present industrial scenario, GHRM gained popularity as it reduces industrial waste and minimizes possible environmental adverse effects because of conventional production processes [60]. Well-organized business processes and improved product or service quality with environmental concerns are the results of the implementation of GHRM. GHRM creates a practical roadmap for the organization to develop human capital to enhance environmental performance and sustainable development. GHRM promotes sustainable practices among employees and ensures employee commitment toward environmental sustainability [3,21,61]. It reduces carbon emissions by encouraging the digitalization of traditional filling systems, car sharing, e-recruitment processes, teleconferencing, virtual interviews, online training, energy-saving, and environment-friendly products [61]. It saves the company's total cost by effectively using electricity, water, and different products. Therefore, GHRM environment-friendly practices create a better work environment with greater efficiency and employee retention.

Many scholars opined that GHRM is positively associated with organizational performance and employee wellbeing [31,34,42]. GHRM creates green employees with the help of its associated functions like green recruitment and selection, green training and development, green compensation, and green performance management. In addition, GHRM creates a blueprint for environmental performance by creating environmental policies and strategies. Organizations can gain a competitive advantage and several other benefits from GHRM implementation, including higher employee motivation and engagement with high moral values. In addition, it increases employee productivity and keeps employees embedded within an organization, leading to less employee turnover.

2.5. Empirical Studies in GHRM

Table 3 summarizes the different empirical studies conducted on GHRM in the past decade.

Table 3. Selected Empirical Studies in GHRM.

No.	Author	Summary of Significant Empirical Studies
1.	Jabbour et al. [44]	This was the first empirical research conducted in Brazilian manufacturing companies, which studied the contribution of HRM dimensions in the overall stages of environmental management. Their pioneering research also developed a theoretical framework related to the evaluation of environmental management and the ‘greening’ of human resource management’s functional and competitive dimensions. For this study, researchers developed a 32 items construct.
2.	Jabbour [45]	The author conducted this study in Brazilian companies to assess the GHRM practices, organization culture, learning, and teamwork. This study revealed that to put workers in control of environmental management, HRM practices need to balance systematically. It was also mentioned that companies that include environmental objectives with traditional HRM practices could successfully attain environmental sustainability. For the study, Author developed 23 items construct.
3.	Gureci et al. [24]	Researchers in this study empirically tested GHRM practices mediating the role on the pressure of environmental issues with two external stockholders, namely customer, and regulatory stockholder. This study found that customer pressure is related to green HRM practices, while green hiring is associated with regulatory pressure. Finally, it concluded that green training and involvement, performance management, and compensation positively affect environmental performance, while customer stakeholder pressure improves environmental performance and developed a 22 items construct to test empirically.
4.	Gholami et al. [23]	Authors studied the impact of GHRM practices on the sustainability of sports centers and identified seven factors in their study of the Johor Darul Ta’zim Football Association. In the study, further interpretive structural modeling was performed using a survey of experts’ judgments to develop the initial structure; the developed model was tested through structural equation modeling. Finally, They found that “performance management”, and “player involvement and empowerment” play a vital role in implication to the system.
5.	Longoni et al. [14]	Authors conducted a multiple-respondent survey of human resource and supply chain managers in different industries in Italy. This study found that GHRM and GSCM jointly influence the environmental and financial performance of the organization. Furthermore, it highlighted the mediating role of GSCM in GHRM and organizational performance.

Table 3. Cont.

No.	Author	Summary of Significant Empirical Studies
6.	Bangwal et al. [47]	While examining the role of GHRM on environmental performance through employee work-life, researchers proposed the model of how GHRM is directly or indirectly associated with environmental performance. The study revealed a significant mediation effect of work-life with GHRM and employee environmental performance. For this study, they developed a six dimensions GHRM Scale that can be measured using 29 items.
7.	Dumont et al. [48]	Authors empirically tested the linkage between GHRM and employee workplace behavior influence on employees. Their study revealed that GHRM directly or indirectly influences role-green behavior. At the same time, extra-role green behavior is indirectly influenced by GHRM as there is a mediation role of psychological green climate. Finally, developed 6 items measures for green HRM and tested this in their research.
8.	Masri and Jaaron [3]	Researchers empirically studied the impact of GHRM practice on Palestinian Manufacturing organizations concerning environmental performance. They found a significant relationship between six GHRM practices and environmental performance dimensions. The study also developed a model of how GHRM practices can maximize environmental performance. Finally, they also developed a ten-dimension construct of GHRM, which can be measured by using 52 items.
9.	Mishra [62]	This study analyzed the status of GHRM in the Indian manufacturing sector. He identified that top management needs support across the unit level for better implications of GHRM practices as in the current situation. GHRM practices are not formally organized in the Indian manufacturing industry.
10.	Yusliza et al. [63]	This study revealed that in the successful implication of green hrM practices, HR business partners play a vital role, and green employee empowerment is directly associated with different dimensions of Green HRM practices.
11.	Tang et al. [27]	Their research motive was to develop a GHRM scale to assess organizational performance. Researchers developed a five-dimensions construct to measure GHRM practices and validated the proposed scale using confirmatory factor analysis. These dimensions include green recruitment and selection, green training, green performance management, green pay and reward, and green involvement. They can be measured by using 19 items.
12.	Gupta [20]	This study was conducted to measure the performance of manufacturing organizations by adopting GHRM practices. The author identified GHRM practices through Best Worst Method [BWM], and measured GHRM practices of different manufacturing organizations by using the Fuzzy Technique for Order Preference by Similarity to Ideal Solution [TOPSIS]. The researcher identified six different attributes of GHRM, namely Green Recruitment and Selection [GRS], Green Training and Development [GTD], Green Performance Management System [GPS], Green Pay and Reward System [GPR], Green Employee Empowerment and Involvement [GEI] and Green Management of Organizational Culture [GOC], by using BWM method. The author found 39 sub-attributes under six attributes and found Green Training and Development the most crucial attribute in the implication of GHRM practices in the organization.

Table 3. Cont.

No.	Author	Summary of Significant Empirical Studies
13.	Saeed et al. [17]	They conducted this study to examine the impact of GHRM practices on employee's pro-environmental behavior. The results clearly showed that green HRM practices positively affect pro-environmental behavior, and pro-environmental psychological capital mediated this link.
14.	Shen et al. [41]	They revealed that perceived GHRM affects non-green employee workplace outcomes through a motivational social, and psychological process. GHRM effect on employee workplace outcome and Perceived organizational support [POS] moderating effect is associated with GHRM.
15.	Chaudhary [64]	He examined the effect of GHRM on the job pursuit intention of potential applicants. In an empirical study of 172 engineering students, GHRM was significantly related to potential applicants while organizational prestige plays a mediating role here, and environmental orientation significantly moderated the effect of GHRM with job pursuit intention.
16.	Shah [26]	The study was conducted to develop and validate the GHRM scale. He identified seven dimensions of GHRM: green job design; green recruitment and selection; green training and development; green performance management; green compensation management; green health and safety; and green labor relations, using exploratory factor analysis. The factor structure is further confirmed by Confirmatory factor analysis.
17.	Yong et al. [43]	This study examined the relationship between GHRM and green intellectual capital. They found that GHRM is influenced by green human capital and green relational capital.
18.	Pham et al. [16]	After analyzing various empirical studies, they concluded that GHRM practices like training and development, pay and reward system, performance management, and recruitment and selection play a vital role in the organization's sustainable development. They further mentioned that GHRM practices encourage employees to perform environmental activities and green training; green organizational culture makes employees more committed to the environment.
19.	Yusliza et al. [18]	Researchers found a positive relationship between different dimensions of HRM with Corporate social responsibility and top management commitment
20.	Chaudhary [21]	The study of the Indian automobile industry found there is a low level of implications of GHRM practices in studied organizations. All five dimensions of GHRM practices, namely green recruitment and selection, green training and development, green performance management, green compensation and rewards, and green employee involvement, significantly predict task-related and voluntary employee green behaviors were assessed.
21.	Chaudhary [22]	GHRM significantly predicts both task-related and voluntary employee green behaviors. The study clearly emphasizes that HRM plays a vital role in the attainment of environmental sustainability and insisted on including the sustainability dimension into HR practices.

Table 3. Cont.

No.	Author	Summary of Significant Empirical Studies
22.	Jirawuttinunt and Limsuwan [65]	They examined the relationship of GHRM practices with intellectual capital and environment performance. They found that four dimensions of GHRM (green recruitment and selection, green training and development, green compensation and rewards, and green performance management) directly influence organizational performance, and organizational performance is also associated with green intellectual capital and environmental performance. They also revealed that employee motivation is key to green organizational performance.
23.	Mukherjee et al. [25]	Authors found low GHRM practices implications in their study of higher education institutions in India. For assessing GHRM practices, they developed seven dimensions of a GHRM Scale, which can be measured by using 40 items
24.	Yu et al. [49]	They studied the importance of GHRM in accelerating environmental cooperation among suppliers and customers through the moderating effect of internal green supply chain management. The study results specify that GHRM is significantly and positively related to environmental cooperation with customers and suppliers, and this relationship is significantly moderated by internal green supply chain management. To measure GHRM, they finally developed six items scale.
25.	Hameed et al. [66]	This study was conducted to test the indirect effect of GHRM on employee organizational citizenship behavior [OCBE]. They found that GHRM significantly but indirectly affects OCBE with green employee empowerment. Reserchers further mentioned that individual green values moderated the positive relationship between green employee empowerment and OCBE.
26.	Raut et al. [67]	This study motive was conducted to identify the most significant indicators of GHRM in the automotive service sector. Authors identified GHRM indicators through a semi-structured interview of 15 domain experts and used MICMAC analysis to finalize the indicators. Finally, they found ‘Green organizational culture and adoption of green strategy’ and ‘Green training and development’ are significant indicators, while ‘Green employee relations and union-management’ greatly depend on the rest.
27.	Rubel et al. [33]	The study examined the impact of GHRM on green service behavior of Banking sector employees of Bangladesh, when they tested the mediating effect of knowledge sharing. As a result, they found a significant positive effect on GHRM practices on green service behavior.
28.	Ahmad et al. [68]	Their study identified that GHRM directly influences green creativiety, and Ethical leadership style has a moderating effect on GHRM and Green creativity. The study was conducted by different organizations in Pakistan’s Gilgit-Baltistan [GB] region. For the assessment of GHRM this study adapted the 18 items scale of Tang et al. [27]
29.	Ababneh [6]	The study revealed that employee engagement partially mediated the association between GHRM practices and individual green behavior. The study was conducted on employees of Jordan’s four and five-star hotels. For the assessment of GHRM this study adapted the 18 items scale of Tang et al. [27]

Table 3. *Cont.*

No.	Author	Summary of Significant Empirical Studies
30.	Ren et al. [69]	They discovered that the usage of green HRM is highly correlated with the environmental beliefs of the CEOs, particularly for businesses located in areas with higher pollution levels. Employee commitment towards the environment in alignment with green HRM favorably impacts the firm's financial and environmental performances.
31	Ercantan and Eyupoglu [46]	This study examined how potential employees' [university students] opinions of businesses that use green human resource management can affect their future green behavior at work.

Table 3 shows different studies conducted by different authors in different contexts. The following are the key contributions out of these studies: The pioneering research conducted by Jabbour et al. [44] connected the different dimensions of HRM with environmental management, and their developed questionnaire was used by Saeed et al. [17], Pham et al. [16], Yusliza et al. [18] and Nejati et al. [15] in their research. One step ahead, Jabbour [45] studied different aspects of GHRM in Brazilian companies and found it to attain sustainability. There is a need to include environmental objectives with the traditionally developed 23 items construct, which was used by different authors like Yong et al. [43], Yusliza et al. [18], Yong and Mohd-Yusoff [70], and Nejati et al. [15] in their GHRM research. Dumont et al. [48] empirically explored GHRM and employee workplace behavior influence on employees. They used their own six items scale, which was later adopted by many researchers like Chaudhary [21], Chaudhary [22], Hameed et al. [66], and Rubel et al. [33]. Another landmark research conducted by Tang et al. [27] developed GHRM scale for the assessment of organizational performance, which consists of five dimensions covered by 19 items scale and this scale became popular and adopted by many researchers like Chaudhary [21], Chaudhary [22], Ahmad et al., [68], Ababneh [6] and other researchers in their empirical studies. So, it is clear after analysis of different empirical studies that the following scale has been mostly adopted in the GHRM research, as shown in Table 4.

Table 4. Most Commonly used Questionnaires by different authors.

	Scales	Studies that Used the Scale	No. of Times Used	No. of Items
1.	Jabbour et al. [44]	Nejati et al. [15]; Yusliza et al. [18], Saeed et al. [17], Pham et al. [16], Yusliza et al. [63], Yusoff et al., [71], Ojo et al., [72].	7	32 items
2.	Jabbour [45]	Nejati et al. [15], Yusliza et al. [18], Yong et al. [43], Yong and Mohd-Yusoff [70].	4	23 items
3.	Dumont et al. [48]	Chaudhary, [21], Chaudhary, [22], Rubel et al. [33], Ercantan and Eyupoglu [46], Hameed et al. [66], Ahmad and Umrani, [73], Luu, [74,75], Fawehinmi et al. [76], Moin et al. [77], Farooq et al. [78], Al-Hawari et al. [79],	12	6 items
4.	Tang et al. [27]	Ababneh [6], Chaudhary, [21], Chaudhary [22], Ercantan and Eyupoglu [46], Ahmad et al. [68], Ren et al. [69], Islam et al. [80], Yan and Hu [81], Anwar et al. [82],.	10	19 items

3. Methodology

Based on the paper's objectives, a systematic review of a reliable knowledge base (Saudi Digital Library) was adopted, as Tranfield [83] suggested. The analysis process included reviewing, classifying, and categorizing the available literature on GHRM, using empirical works published over a decade. During this period, substantial developments occurred in GHRM, and the literature became enriched. Therefore, the review focused on studies that developed sound theoretical arguments and reported empirical findings on GHRM. The review did not consider those studies without GHRM as a focal point. This process yielded over 250 journal articles and discussion papers, from scanned literature from 2010–2022. The study adopted the following steps for the conduct of the research:

Step—1: Selection of Data Base:

The first step was to identify the appropriate and reliable database to attain the study's objectives. The study selected Scopus because it has comprehensive coverage compared to other databases and the possibility of data loss is minimal [84]. Therefore, only Scopus-indexed articles were selected to maintain the quality of the research. Scopus is a broad-based database that contains more studies.

Step—2 Scope of the search:

The present study focused explicitly on Green Human Resource Management. Hence, all related terms like strategic management, innovation, leadership, and sustainable management were excluded. In addition, the studies that did not focus on GHRM were removed.

Step—3 Article selection process:

The following criteria were adopted in selecting articles as described in Table 5.

Table 5. Article Selection Criteria.

No	Particulars	Details
1	Period	From 2010 to 2022
2	Keywords	"GHRM" or "Green Human Resource Management," and "Human Resource Management and Environment"
3	Database	Scopus
4	Selection criterion	High impact factor Scopus journals

Step—4 Classification and final selection of articles.

The total of 250 documents were extracted for the given period, including 224 articles and 26 review articles. These documents were identified from the title, abstract, and keywords of the Scopus database and conference proceedings, books and books chapter were excluded. Finally, 31 articles with high impact were selected for analysis.

Step—5 Generation of Results.

These 31 articles were extensively reviewed to achieve the research objectives, which included identifying the various factors and measurement tools. The results are likely to present adequate knowledge about GHRM.

Based on the above criteria, the investigator identified the Ability–Motivation–Opportunity (AMO) theory [85] best suited and was hence used in the study. The theory specifies that once the organization provides abilities, motivation, and opportunities in the best possible manner, the employees' commitment to their work is enhanced [86]. Studies (for instance, [87,88]) used AMO theory to examine the impact of GHRM on organizational performance. According to the theory, various HRM practices could enhance a firm's human capital [89]. Some practices include higher productivity levels, better quality, waste reduction, and enhanced profit. All these practices point towards GHRM. The theory facilitates systematic conceptualizations associated with HRM practices and organizational performance [87]. AMO has its moorings in the belief that organizational performance is a function of various activities conducted among employees [90]. AMO, which has its roots

in the efforts of Vroom [91], became enriched by the work of Blumberg and Pringle [92]. Later, the theory was applied in the works of Bailey [93] and Applebaum [85]. The theory is now extensively used in analyzing the application of GHRM [43,49,94–96].

4. Results

GHRM Scales

The study also scanned the literature to understand the available tools used to measure GHRM practices. As a result, the review could identify a reasonably good number of questionnaires in the area, as presented in Table 5. However, it can be observed that there is wide diversity concerning the number of factors and items in each scale. For example, while the factors ranged between three (Longoni et al. [14]; and Yu et al. [49]) and 10 (Jabbour et al. [44]), the total number of items ranged between six (Yu et al. [49]) and 52 (Masri and Jaaron [3]). On the other hand, the GHRM measurement scale of Dumont et al. [48] contains only six items without factors. Thus, the questionnaires were found to diverge in terms of factors and items rather than converging. Questionnaires having too many items could induce fatigue in the respondents, and too few may fail to assess the intended construct. In addition, many questionnaires were prepared for a unique situation or a particular organization and not as a generalizable one. Table 6 highlighted different factors and no. of items of questionnaires.

Table 6. Number of items and reliability of questionnaires.

	Author	Variables/Factors	Items	Reliability/Validity
1.	Jabbour et al. [44]	1. Evaluation of environmental management	8	0.90
		2. Job Analysis and Description	3	
		3. Recruitment	3	
		4. Selection	2	
		5. Training	3	
		6. Performance Appraisal	3	
		7. Rewards	2	
		8. Group Articulation	2	
		9. Corporate culture management	3	
		10. Corporate learning management	3	
		Total items	32 items	
2.	Jabbour [45]	1. Analysis and description of job position	3	
		2. Recruitment	2	
		3. Selection	2	
		4. Training	3	
		5. Performance Assessment	3	
		6. Rewards	2	
		7. Team formation	2	
		8. Organizational culture management	3	
		9. Organizational learning management	3	
		Total items	23 items	

Table 6. Cont.

	Author	Variables/Factors	Items	Reliability/Validity
3.	Guerci et al. [24]	1. Customer Pressure	3	0.90
		2. Regulatory Stakeholder Pressure	3	0.92
		3. Green hiring	2	0.89
		4. Green training and Involvement	4	0.92
		5. Green performance management and compensation	5	0.94
		6. Environmental Performance	5	0.90
		Total items	22 items	
4.	Gholami et al. [23]	1. Performance Management	4	0.86
		2. Player Involvement and Empowerment	3	0.82
		3. Culture and supportive climate	3	0.73
		4. Pay and Reward systems	4	0.77
		5. Attracting and selecting	4	0.79
		6. Training and Development	4	0.71
		7. Unions' role in player involvement and environmental management	2	0.58
		Total items	24 items	
5.	Longoni et al. [14]	1. Green hiring	2	0.89
		2. Green Training and Involvement	4	0.92
		3. Green performance management and compensation	5	0.94
		Total items	11 items	
6.	Masri and Jaaron [3]	1. Management of organizational culture	5	0.87
		2. Recruitment and selection	5	0.92
		3. Training and development	5	0.91
		4. Performance management and appraisal	5	0.95
		5. Reward and compensation	3	0.94
		6. Employee empowerment and participation	5	0.92
		7. Environmental performance	8	0.93
		8. Drivers of green HRM	5	0.85
		9. Barriers to green HRM	5	0.79
		10. Expected benefits of green HRM	6	0.88
		Total items	52 items	

Table 6. Cont.

	Author	Variables/Factors	Items	Reliability/Validity
7.	Dumont et al. [48]	The Measure of Green HRM	6	0.88
		Total items	6 items	
		1. Green Training and Development	5	0.88
		2. Green pay and Reward	4	0.82
		3. Energy Efficient workspace	5	0.93
8.	Bangwal et al. [47]	4. The Green practices at work	5	0.90
		5. Green practices in personal life	5	0.94
		6. Environmental performance	5	0.84
		Total items	29 items	
		1. Green involvement (GI)	6	0.87
		2. Green training(GT)	3	0.83
		3. Green performance management (GPM)	4	0.87
9.	Tang et al. [26]	4. Green pay and reward (GPR)	3	0.87
		5. Green recruitment and selection (GRS)	3	0.84
		Total Items	19 items	
		1. GCM: green compensation management	5	0.95
		2. GHS: Green health and safety	3	0.96
		3. GJD: Green job design	4	0.97
		4. GLR: Green labor relations	3	0.98
10.	Shah [26]	5. GPM: Green performance management	6	0.98
		6. GRS: Green recruitment and selection	3	0.92
		7. GTD: Green training and development	4	0.91
		Total items	28 items	
		1. Green Recruitment and Selection	6	0.77
		2. Green Training and Development	6	0.86
		3. Green Performance Appraisal Management	6	0.89
11.	Mukherjee et al. [25]	4. Green Pay and Reward Management	7	0.92
		5. Green Employee Participation and Empowerment	6	0.92
		6. Management of Green Organizational Culture	5	0.89
		7. Green Exit	4	0.91

Table 6. *Cont.*

Author		Variables/Factors	Items	Reliability/Validity
		Total Items	40 items	
12.	Gupta [20]	1. Green Recruitment and Selection (GRS)	7	0.09
		2. Green Training and Development (GTD)	7	0.49
		3. Green Performance Management System (GPS)	6	0.05
		4. Green Pay and Reward System(GPR)	6	0.13
		5. Green Employee Empowerment and Involvement (GEI)	7	0.17
		6. Green Management of Organizational Culture (GOC)	6	0.07
		Total Items	39 items	
13	Yu et al. [49]	1. Training and Development	3	0.88
		2. Employee motivation	1	
		3. Employee involvement	2	
		Total Items		

Another questionnaire developed by Dumont et al. [48] had six items. The study did not attempt to identify any variable/factor. The reliability of the scale was 0.88.

5. Discussion

The study used a systematic literature review to explore the various factors and measuring tools of GHRM based on available literature and different empirical studies conducted by researchers in this field. A total of 31 empirical articles about GHRM were identified from the Scopus repository from 2010–2022. The author adopted a five-step process which includes Selection of Data Base, Scope of the search, Article selection process, Classification and final selection of articles and Generation of Results, to identify the 31 reviewed empirical studies. It was observed that there exists a wide diversity in definitions, variables, and tools used to measure GHRM. There are as many definitions as the number of scholars who attempted to define it, with little or no convergence.

A significant contribution of the study is that using AMO Theory [85], the present work reviewed, categorized, and classified the available literature on GHRM. The previous studies also highlighted the alignment of AMO theory with GHRM and explained its contribution to enhancing green behavior [10,97]. In line with this, the present study also identified factors in light of the AMO theoretical framework. ‘Ability’ helps develop green capabilities through Green recruitment and selection and Green training and development. These abilities enhance creativity and provide innovative solutions to enhance environmental performance. ‘Motivation’ provided in AMO theory deals with making an appropriate appraisal and reward system to encourage green behavior. Similarly, Green compensation management and Green performance management enhance green performance. ‘Opportunity’ deals with creating opportunities to enhance green behavior, highlighted in Green Employee empowerment and participation. Further, Green Employee relations also raise employee spirit toward green behavior.

The researcher also identified the divergence regarding the factors that constitute GHRM. The review identified that the factors of GHRM were mainly limited to the acquisition of human resources, training, and performance management. The study failed

to identify literature having a comprehensive view of GHRM factors. The review also showed that the most commonly used factors were Green Training and Development, Green Recruitment and selection, Green compensation management, and Green performance management [3,20,25,26]. The present study identified a few other essential factors required to represent GHRM comprehensively. The identified factors include Green Employee empowerment and participation and Green Employee relations, which also need to be included while conducting empirical studies about GHRM.

Similarly, there was also diversity concerning the tools used to measure GHRM. Most questionnaires have many items [3,20,25], which could generate respondents' fatigue and bias, hampering the seamless measurement of the concept. A few other questionnaires were too short [48,49], with as low as six items. Most researchers since 2017 have used the [26,63] questionnaire in their studies. Certain others have used a combination of both, like [3,20,25,26]. There is, as such, a definite need to have an all-inclusive questionnaire that reflects the essence of GHRM and elicits all required information from the respondents. A paucity of such a questionnaire has hampered the scientific measurement of GHRM. This research is expected to provide a required thrust in this direction.

6. Conclusions and Limitations

Now there is a global sensitivity and interest in environmentalism. This sensitivity has resulted in multiple treaties among nations to combat climate change. Significant among them include Kyoto in 1997, Bali in 2007, Copenhagen in 2009, Durban in 2011, Lima in 2013, Paris in 2015, and Glasgow in 2021. These treaties have their reflections on the organizational and management fields too. Companies are now putting in their efforts to turn their operations green. GHRM is part of this benign movement.

There is growing empirical literature about GHRM, and the present work synthesizes the available work in the field. GHRM involves the various organizational policies, practices, and systems that make employees inclined towards green procedures that could benefit all stakeholders, including the individual, humanity, the business, and the environment [9,98]. GHRM would also help employers and practitioners to establish the vital linking of employee involvement with environmental programs, and the resultant enhanced environmental performance. For example, certain areas where employees could be involved include optimal use of scarce resources and energy, pollution reduction, waste management, and recycling. Such practices could help safeguard and enhance health and workplace wellbeing. In addition, it helps to reduce wastage, thereby minimizing adverse effects on the environment and transforming employees, enabling them to make significant contributions to organizational performance and environmental sustainability [99].

The review focused more on the literature, developed sound theoretical arguments, and reported empirical findings. The present work contributes multifold to GHRM literature. First, it has surveyed and drawn together the various elements of GHRM. Second, it has succeeded in mapping the terrain of the discipline. The various factors and measuring tools in the field have been presented. Third, the study has identified a need for efforts towards convergence about the constituents of GHRM. Next, the study has outlined various avenues for future studies about GHRM. Future research could provide interesting dimensions and results to various stakeholders. This could help expand the scope of Strategic HRM and facilitate the incorporation of corporate sustainability in the organizational agenda, highlighting the role of HRM in making the world a better place to live in. Finally, the study has meticulously reviewed volumes of literature on GHRM. Therefore, it would work as a ready reference for researchers and scholars of GHRM. We expect this study to offer adequate information and guidance to those who intend to study GHRM. We hope the study to stimulate further research in this exciting area.

No study is without limitations, and the present study is no exception. A few limitations of this study are now discussed. First, the study identified articles only from the Scopus database. Other databases like Web of Science (WoS), ABDC, etc., were not used for the study. However, since Scopus is broad-based and contains most of the journals and

articles in WoS and ABDC, it can be presumed that this limitation is taken care of. Next, the analysis did not include the conference proceedings, books, chapters, and books. This could have influenced the reach of the articles. Finally, according to the selection criteria, though all eligible articles have been utilized to the best of our knowledge, some papers would likely have been missed.

Funding: This study is supported via funding from Prince Sattam Bin Abdulaziz University project number (PSAU/2023/R/1444).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.

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