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Identification of Dimensions and Components of Green Human Resource Management in Line with Sustainable Development

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Abstract

The aim of this study was to identify the dimensions and components of green human resource management (GHRM) in line with sustainable development within the municipalities of Hormozgan Province. The research employed a qualitative methodology. Participants included mayors, managers, and human resource experts who were selected through purposive sampling and based on the principle of theoretical saturation. The data collection tool was a semi-structured interview, and the validity and reliability of the interviews were ensured using the criteria of credibility, transferability, dependability, and confirmability. The data analysis results revealed that the dimensions and components of green human resource management include the following: training and development systems, human resource retention systems, formulation of a green management charter, green performance evaluation, green organizational citizenship, green human capital, green reward management, green-centric ideation, green innovation, green social culture, green planning, green standards, sustainable green relations, green energy conservation, green environmental research, green organizational culture, green health and safety management, green socialization, green resource procurement, green organizational support, and environmentally-centered disciplinary principles.

Keywords: Sustainable development, Green human resource management, Municipalities.

1. Introduction

Organizations play a significant role in either increasing or reducing environmental challenges, and the prominent role of humans within organizations and attention to environmentally friendly activities in the domain of human resource management is of notable importance. Therefore, human resource management activities influence both the professional and personal lives of employees. Sustainable human resources—specifically the environmental branch—referred to as Green Human Resource Management (GHRM), seeks to examine the relationship between human resource activities and environmental sustainability. The connection between human resources and environmental management in the organizational space leads to improved environmental and financial performance, a connection that is made possible through the implementation of green human resource management (Sahan et al., 2025; Seyed Javadin et al., 2016; Zarei & Izadi, 2024).



Green human resource management in various organizations such as municipalities refers to all activities involved in the development, implementation, and maintenance of a system aimed at cultivating green employees. This role of human resource management is carried out by transforming ordinary employees into green employees and pertains to policies, practices, and systems that lead employees to act in favor of individuals, society, the natural environment, and business (Bombiak, 2019). Accordingly, green human resource management actions aimed at cultivating green employees form the prelude to building a green organization. Regarding the organizational environment, concepts and constructs such as green organizational citizenship, green social responsibility, green accountability, green marketing, and green social culture have emerged. Additionally, concepts such as green supply chain management, green organizational culture, green workplace, and green human resources have appeared in studies focused on the internal dimensions of organizations (Renwick et al., 2013).

The green management approach is based on an emphasis on sustainable development and, consequently, organizational sustainability, accompanied by social approaches and economic motivations, health and safety of the community and employees, and the dissemination of a favorable public image of the organization in the long-term horizon. For this reason, organizations must incorporate extensive environmental considerations into their environmental performance and environmental management practices to achieve a green ideology and public belief in green values (Pavithradevi & Sandhya, 2016). Furthermore, to align with the principles and processes of green management in the organization, attention must be paid to organizational foundations and specialized rules, and expert-based strategies must be employed to advance environmental objectives. Green human resource management, by creating awareness, providing information, and promoting interaction among employees regarding the environment and environmental factors as well as green policy-making, seeks to foster social responsibility among them and guide them toward fulfilling their duties and commitments to the environment. The aim of green human resource management is to create the foundations for playing a role in environmental sustainability across different organizations (Seyed Javadin et al., 2016).

Green human resource management, alongside other branches of green management (such as green production, green investment, and green marketing), has become the cornerstone of an expanding domain of management studies, especially in human resource management. GHRM is, in fact, the most fundamental component of organizational sustainability, which facilitates the convergence and synergy of various aspects of green management and eases the adoption of a green approach, thereby contributing to the realization of a green industry, green economy, and green society (Beheshti et al., 2024). In reality, green human capital appears as the leading component in all aspects of green management and in interaction with other components. For this reason, the volume of research on green human resources is significantly higher than that on other dimensions of green management. Despite diverse research in the field of green management, few studies have specifically addressed the challenges and effective strategies of green management to accelerate sustainability in urban development. Hence, the central issue of this study is the influence of green management on achieving sustainable urban development, and neglecting human resource management may cause challenges in multiple aspects of urban development.

From a strategic perspective, if we focus on the impact of green human resource management systems, there has been limited attention in human resource research to how these systems influence GHRM, and there has been insufficient direct focus on this effect. Among the core systems of human resource management are training and development, retention, compensation, and performance management—yet very few domestic studies have explored these areas within the context of green human resource management (Ashtiani et al., 2022). In practice, many organizations, including municipalities, lack structured programs for green management and green human resource management, and most existing green programs in organizations are reactive, driven by legal environmental requirements.

The successful implementation of green supply chain management depends on behavioral and human factors, and green workforce management must be continuously and systematically examined. Green human resource management integrates environmental management practices with human resource management (AlKetbi & Rice, 2024). Without attention to this domain by human resources, it is impossible to analyze their contribution to environmental sustainability or to take meaningful, impactful steps in the face of Iran's environmental crisis.

A review of sustainable development training programs in the country reveals two fundamental issues. The first is the content of these programs, which primarily focus on the individual's sustainable development and give little attention to developing dimensions of green management. This is despite the correlation between sustainable development and green management

dimensions. The second issue is the level at which sustainable development education is conducted—mostly at the university level. However, according to educational planners, the foundation for sustainable development is laid during high school, and this structure has a close connection with the specific pedagogy of that stage.

In recent years, a growing body of research has emphasized the pivotal role of Green Human Resource Management (GHRM) in promoting sustainable organizational practices. In this context, Beheshti et al. (2024) developed a model for implementing GHRM policies at Shahrood University of Medical Sciences using an exploratory mixed-methods approach. Their findings highlighted the influence of spiritual leadership on ethical governance, workplace spirituality, and moral culture, which subsequently shape GHRM policies and impact social, ethical, and legal responsibilities, ultimately enabling access to green human resources (Beheshti et al., 2024). Zarei and Izadi (2024), through a gap analysis approach, found that the most significant implementation gaps were related to solar energy utilization, green reward systems, and carpooling, while waste separation and recycling showed the smallest gaps (Zarei & Izadi, 2024). Ashtiani et al. (2022), in a study on hotels and restaurants in Bijar, reported a significant effect of GHRM on employees' organizational commitment, eco-friendly behavior, and environmental performance, with employee commitment mediating this relationship (Ashtiani et al., 2022). Similarly, Sahan et al. (2025), in a systematic literature review, demonstrated that GHRM practices enhance employees' energy-saving behaviors and consequently improve organizational environmental performance (Sahan et al., 2025).

One of the essential steps toward reducing crises and resolving environmental issues is a special focus on organizations and their human resources and effective management of these resources. Human resource management is among the core responsibilities of management in any organization, and all managers at various organizational levels bear some degree of this responsibility (Bombiak, 2019). Promoting green human resources can be achieved through various practical strategies, which should be a top priority for every organization, particularly municipalities. Nonetheless, existing research remains largely undefined regarding the antecedents of green human resource management and how it impacts organizational outcomes. The lack of such studies results in a vague understanding of the factors leading to GHRM (i.e., antecedents) and the intermediary processes (i.e., mediators) through which green management results in positive outcomes. Another area of concern is the limited research and insight into how green human resource management affects employees. This is particularly important because understanding the impact of GHRM on employees is a fundamental step in establishing an effective green management system in organizations.

Therefore, given the growing environmental challenges and their increasing relevance in both society and organizations, and due to the need for evolving existing frameworks and the shortage of theoretical knowledge, conducting research on green human resource management in line with sustainable development within municipalities is deemed necessary. To identify the challenges facing green human resource management in addressing sustainable development concerns, a study based on modern theory and carried out through interviews with experts is required.

2. Methods and Materials

Given the objective of the study, a qualitative approach was selected as the initial step to identify the subject under investigation. In order to gain a deeper understanding of the phenomenon of green human resource management and to identify its various dimensions, the qualitative content analysis method was employed.

Qualitative content analysis can be defined as a research method for the subjective interpretation of the content of textual data through a systematic process of categorization of key elements and the design of established models. One of the fundamental characteristics of qualitative research is theorizing rather than theory testing. Qualitative analysis allows for an empirical, methodological, and controlled step-by-step approach, while observing the studied elements. These definitions indicate that qualitative content analysis enables researchers to interpret the authenticity and truth of data in a subjective manner using a scientific method. The objectivity of the results is ensured through the existence of a systematic coding process. Qualitative content analysis goes beyond the words or objective content of texts and examines themes or patterns—both explicit and implicit—as manifest content.

Participants in the qualitative phase included mayors and human resource management experts employed in the municipalities of Hormozgan Province.



In the qualitative phase, purposive sampling was used to select participants. Based on the principle of theoretical saturation, 12 experts and managers were selected as the study participants. The characteristics of the interviewees in the qualitative section of the study are presented in the table below.

Table 1. General Characteristics of Qualitative Interview Participants

No.	Interview Code	Gender	Field of Study	Education Level	Work Experience (Years)	Age	Position
1	M1	Male	Urban Management	PhD	28	50	Mayor
2	M2	Male	Urban Planning	MA	30	56	Mayor
3	M3	Male	Public Administration	PhD	23	48	Mayor
4	M4	Male	Urban Management	MA	13	40	Mayor
5	M5	Male	Land Use Planning	PhD	11	57	Mayor
6	M6	Male	Environmental Science	PhD	14	59	Mayor
7	M7	Male	Urban Planning	PhD	18	43	Mayor
8	M8	Male	Urban Management	PhD	17	43	Mayor
9	M9	Male	Architecture	MA	15	39	Mayor
10	M10	Male	Civil Engineering	MA	10	37	Mayor
11	M11	Male	Urban Planning	PhD	25	47	Mayor
12	M12	Male	Civil Engineering	PhD	19	44	Mayor

In the qualitative phase, in order to gather the perspectives and insights of green management experts and to identify the dimensions and components of green management and sustainable development, a semi-structured interview tool was used. To analyze the data and extract the required findings, open, axial, and selective coding frequencies were applied for the interviews using content analysis methodology.

3. Findings and Results

At the outset, to identify the dimensions and general components of green human resource management in alignment with sustainable development, comprehensive studies were conducted in the field of green management and the process of sustainable development. During this research process, both theoretical and empirical backgrounds, along with principles of grounded theory related to concepts and categories in green management and sustainable development, were recorded and collected. Subsequently, qualitative data were gathered through semi-structured interviews, and the analysis was carried out concurrently with data collection. It is important to note that the extracted concepts and categories from each interviewee were classified separately to facilitate the identification of components and dimensions and to simplify the analysis process. During the open coding phase, the researcher extracted 223 initial concepts using paragraph-based coding, as shown in Table 2.

Table 2. Summary of Extracted Concepts by Interviewee

Interviewee Code	Number of Extracted Concepts	Examples of Concepts (Selected Highlights)
M1	20	Creating sustainable conditions, alignment of economic and human factors, strategic mindset, quality of work life, identifying external and internal challenges, training skilled and committed staff
M2	16	Policy-making, social and job responsibility, cost efficiency, collaboration, creativity and innovation, entrepreneurship, emphasis on environmental standards
M3	15	Realistic environmental vision, sustainable development understanding, using academic research, entrepreneurial mindset, strategic alignment, HR system differentiation
M4	24	Outcome-based planning, knowledgeable workforce, reward and compensation systems, job design, absenteeism management, health and safety systems, succession planning
M5	25	Activity planning, HR improvement, performance management, risk management, hiring standards, cultural barriers, flawed evaluations, unfair practices, green integration failures
M6	24	Employee development, career paths, ethical guidelines, green product design, management support, green organizational culture, remote communication, innovation acceptance
M7	19	Environmental competencies in job roles, sustainability dimensions, personality traits, motivation, creative performance, green strategies, environmental duties, policy alignment
M8	14	Enabling green industry and society, organizational environmental performance, national and technical barriers, lack of strategic direction, absence of green knowledge
M9	14	Green ideas and initiatives, HR policy integration, environmental lifestyle impact, training, international benchmarking, supply chain management, eco-compatible practices
M10	17	Employee process management, vitality, resistance to change, lack of green funding and support, performance evaluation, green transport, continuous training
M11	24	Reward systems, environmental innovation, job satisfaction, HR improvements, employee engagement, green leadership, public trust, timely implementation of municipal programs



M12	11	Corruption due to unmet commitments, failure in public services, HR structure enforcement, qualified recruitment, reducing surplus hiring, oversight and environmental quality improvement
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In Table 2, the concepts or codes identified from the interviews conducted with experts and specialists were extracted in order to answer the research question. In the initial table, the codes and concepts were categorized based on the number of interviewees and the information provided by each of them. During the initial open coding phase, the interviewee codes (M1 to M12) were utilized, and the codes from each interviewee were listed separately.

After identifying the general concepts or codes derived from the semi-structured interviews, the codes were subsequently grouped under broader categories in the next table. In the first stage, the aim was to extract the key points and emphasized issues raised by the interviewees. Ultimately, after eliminating repetitive items, a new coding process was carried out.

Following this, the coded concepts and scattered codes were refined for greater coherence and to generate the initial concepts needed for the second phase of coding. The concepts derived from the open coding phase were then re-coded, the results of which are presented in Table 3.

Table 3. Extracted Green Human Resource Management Components Based on Initial Codes

Core Components (Categories)	Identified Concepts (Selected Examples)	Interviewees
Training and Development System	Identifying experts in green management; aligning educational values with green ethics; training by municipal managers and staff; environmental adaptation training for employees; public green management training; creating strategic implementation teams	M1, M4, M6, M8, M10, M11, M12
HR Retention System	Inadequate filtering aligned with green criteria; aligning economic and HR management; raising environmental awareness through training; performance-based reward systems	M1, M4, M6, M8, M9, M11, M12
Green Management Charter Formulation	Institutionalizing green orientation; organizational environmental standards; improving efficiency for sustainable development; applying total quality principles; adopting environmental policies	M3, M4, M7, M8, M10, M11, M12
Green Performance Evaluation	Enhancing green strategy efficiency; implementing green programs; staff participation in environmental management; monitoring procurement and spending; evaluating staff with green benchmarks	M2, M4, M6, M7, M9, M10, M12
Green Organizational Citizenship	Training of green-oriented implementers; environmental job responsibilities; environmental competencies; personality and motivational traits	M1, M3, M6, M8, M9, M10, M11
Green Human Capital	Adapting HR systems; unclear green dimensions in the organization; preventing biased hiring and favoritism	M3, M4, M5, M8, M9, M10, M12
Green Reward Management	Aligning green goals with municipal regulations; optimizing green programs; incentivizing behaviors like recycling; competitive benefits	M1, M4, M6, M8, M10, M11, M12
Green Ideation	Green decision-making models; eco-friendly innovation; optimized energy use; creative managerial strategies; green HR initiatives	M2, M3, M5, M9, M10, M12
Green Innovation	Unofficial and extracurricular green events; strategic mindset; performance management systems; creative development pathways	M2, M3, M6, M9, M10, M11
Green Social Culture	Trust, commitment, and norms of cooperation; alignment of green values with organizational culture; social responsibility; cultural challenges	M2, M5, M8, M9, M10, M11, M12
Green Planning	Workforce environmental planning; integrating environmental concerns into business planning; legal framework development	M2, M5, M8, M9, M10
Green Standards	Synergized green management; balancing economic foresight; organizational sustainability dimensions; autonomy in green activity	M2, M3, M5, M9, M10, M12
Sustainable Communication	Technological advancement in green communication; enhancing quality of environmental messaging	M2, M3, M5, M8, M10, M11
Green Energy Saving	Green supply chain for cost reduction; post-outcome modeling; eco-friendly landscaping; mechanized cleaning with low input	M2, M3, M6, M9, M11, M12
Green Environmental Research	Acceptance of green innovation; academic collaborations; building research-oriented culture	M3, M4, M5, M8, M10, M12
Green Organizational Culture	Organizational efficiency and conservative culture; related educational background; managerial role modeling in green changes	M1, M3, M6, M9, M11, M12
Green Safety and Health Management	Maintenance over replacement; safety systems; energy-saving policies; environmental waste reduction	M3, M5, M7, M9, M10, M11
Green Socialization	Cultivating green perspective; awareness on material and energy efficiency; environmental concern alignment; strategic participation	M1, M4, M6, M7, M10, M11
Green Resource Provision	Financial budgeting for green programs; procurement of environmentally friendly materials and services	M3, M5, M7, M9, M11, M12
Organizational Green Support	Recruitment and reward alignment; benefits structure; mutual accountability; welfare-based green support	M3, M5, M8, M10, M11, M12
Environmentally-Centered Disciplinary Principles	Penalties for non-achievement of green goals; environmental disciplinary systems; technical issue resolution; fulfillment of organizational obligations	M1, M5, M6, M8, M10, M12



Based on the coding analysis and the results summarized in Table 3, the study identified twenty-one main components of green human resource management aligned with sustainable development goals in the municipalities of Hormozgan Province. This was accomplished through semi-structured interviews and two phases of coding—open and axial.

The training and development system emerged as a primary component, emphasizing the strategic cultivation of green awareness and practical skills across all organizational levels. Equally significant was the HR retention system, highlighting the necessity for sustainability-focused reward mechanisms and environmental awareness among employees.

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Another core category, green performance evaluation, addressed the integration of eco-oriented benchmarks into organizational assessment procedures. Meanwhile, green organizational citizenship and green human capital underlined the behavioral, attitudinal, and competency-based expectations of environmentally responsible employees.

Strategic categories such as green reward management, green ideation, and green innovation showcased the role of creativity, policy alignment, and systematization in promoting eco-centric practices. These were complemented by green social culture and green organizational culture, which rooted the success of green HRM in shared values, trust, and collective responsibility.

Components such as green energy saving, green environmental research, green resource provision, and green safety and health management further grounded HRM within broader organizational and ecological infrastructures. Finally, the presence of environmentally-centered disciplinary principles and green socialization confirmed the importance of behavioral compliance and cultural internalization for long-term sustainability.





Figure 1. Final Conceptual Model

4. Discussion and Conclusion

The results of the content analysis of interviews revealed that the dimensions and components of Green Human Resource Management (GHRM) include: the training and development system, the human resource retention system, the formulation of a green management charter, green performance evaluation, green organizational citizenship, green human capital, green reward management, green ideation, green innovation, green social culture, green planning, green standards, sustainable communication, green energy saving, green environmental research, green organizational culture, green safety and health management, green socialization, green resource provision, organizational green support, and environmentally-centered



disciplinary principles. The interview data analysis demonstrated that GHRM comprises multiple components, each of which plays a significant role in the organizational pathway toward sustainable development (Sahan et al., 2025; Seyed Javadin et al., 2016).

Green training and development encompasses programs aimed at raising awareness and empowering employees in environmental matters, promoting green skills, and fostering a culture of sustainable learning (Lather & Goyal, 2012; Tang et al., 2018). The green human resource retention system focuses on creating a work environment aligned with environmental standards, retaining employees committed to green principles, and enhancing their motivation through supportive measures.

Formulating a green management charter involves designing and implementing overarching HR strategies in alignment with environmental sustainability, thereby obligating the organization to uphold ecological principles (Lather & Goyal, 2012). Green performance refers to defining metrics for assessing employees' environmental behavior, evaluating compliance with sustainability principles in daily operations, and creating mechanisms for feedback and process improvement. Green organizational citizenship relates to employees' voluntary behaviors aimed at protecting the environment, which can be reinforced through cultural initiatives and incentive policies (AlKetbi & Rice, 2024; Arulrajah et al., 2015).

Green human capital refers to the recruitment, development, and retention of employees equipped with the knowledge, attitudes, and skills necessary for contributing to green organizational processes (Huang et al., 2021). Green reward management involves creating incentive systems based on employees' environmental performance and motivating them through special benefits such as reduced energy and resource consumption. Green ideation includes supporting creativity and innovation in optimizing organizational processes using sustainable methods. Green innovation pertains to encouraging employees to discover and apply novel green management techniques and embrace creative ideas to improve environmental performance (Ashtiani et al., 2022; Roscoe et al., 2019; Tang et al., 2018).

Green social culture refers to the organization's interaction with society regarding environmental responsibility, public education on sustainability, and the promotion of environmental values at the community level (Lather & Goyal, 2012). Green planning entails integrating sustainability principles into the organization's strategic planning, forecasting the environmental impact of actions, and designing strategies to mitigate ecological harm. Green standards focus on defining and implementing specific regulations and criteria to ensure compliance with environmental requirements in organizational processes (Ahmad, 2015; Al-Swidi et al., 2021).

Sustainable communication includes establishing collaboration with other organizations and environmental institutions to exchange knowledge and successful sustainability practices. Green energy saving refers to developing and executing strategies to optimize the use of natural resources and energy, thereby reducing organizational costs in this area. Green environmental research involves R&D activities to improve environmental performance, advance sustainable technologies, and engage in scientific projects related to the environment (Sahan et al., 2025; Seyed Javadin et al., 2016).

Green organizational culture involves embedding environmental attitudes, beliefs, and values throughout the organization and ensuring commitment to sustainability principles at all levels (Beheshti et al., 2024; Lather & Goyal, 2012; Pavithradevi & Sandhya, 2016). Green safety and health management focuses on enhancing employee health through environmental safety standards, reducing workplace pollutants, and improving overall work conditions (Tang et al., 2018). Green socialization relates to introducing new employees to organizational sustainability principles and instilling environmental values from the outset (Roscoe et al., 2019; Sahan et al., 2025).

Green resource provision includes utilizing sustainable suppliers and products, reducing dependence on non-renewable resources, and managing organizational waste in an ecologically responsible manner. Organizational green support involves institutional measures and policies that facilitate and reinforce pro-environmental behaviors among staff while motivating their active participation in green initiatives. Finally, environmentally-centered disciplinary principles focus on establishing rules and regulations for adherence to green standards, creating legal requirements for sustainable behaviors, and addressing environmental violations within the organization.

Organizational conditions are critical in motivating environmentally friendly activities such as GHRM (Beheshti et al., 2024; Bombiak, 2019). When an organization goes beyond profit-driven objectives and places value on green activities,



seeking to minimize negative and maximize positive environmental impacts, it cultivates a culture that promotes GHRM and related practices (Sahan et al., 2025; Seyed Javadin et al., 2016). Thus, organizational culture, by creating an environment where green practices are valued, fosters various dimensions of GHRM, including green recruitment, training, evaluation, and motivation.

Human resource management is fundamental for enhancing a company's competitive advantage. Organizations are actively implementing environmentally sound management practices that reduce costs and increase revenue streams to address critical environmental concerns. Research shows that GHRM is one of the most effective strategies for improving corporate environmental performance, as it provides a necessary foundation for effectively managing a company's environmental impact. Environmental performance reflects the organization's commitment to environmental protection and its demonstration of care through measurable operational parameters. Therefore, green HRM practices, which include eco-friendly HR activities, lead to increased efficiency, cost reduction, and improved employee engagement and retention.

Additionally, GHRM helps organizations improve their environmental performance by increasing employee awareness of environmental issues. In fact, green human capital frequently emerges as the most prominent component of green management and plays a foundational role in coordination with other elements. Consequently, the volume of studies on green HRM is notably higher than on other aspects of green management.

The green management approach stems from a commitment to sustainable development and, by extension, organizational sustainability. It is intertwined with social approaches and economic motivations, community and employee health and safety, and the dissemination of a favorable public image of the organization over the long term. Therefore, organizations must incorporate numerous environmental considerations into their performance and environmental management systems to fulfill the ideology of green values and foster public belief in such values (Pavithradevi & Sandhya, 2016). Under the umbrella of green social values and green management, the green organization can thus be actualized.

As emphasized, environmental education is intended to foster a deeply rooted culture, one that cultivates individuals with a sense of environmental responsibility, along with the knowledge, attitudes, motivation, commitment, and skills necessary for contributing to the creation of a healthy, clean environment—and a commitment to preserving it for future generations. Consequently, sustainable development necessitates foundational transformation. Concepts such as social justice, preservation of cultural heritage, environmental protection, public health, meeting human needs, and intergenerational responsibility form the backbone of sustainable development. Given that sustainable development centers on human needs, active human participation at all stages of any process is considered a fundamental principle.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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