



Green human resource management as a strategic approach to achieving organizational sustainability: A study of a sample of Tunisian companies

TELKHOUKH Saida *	HOUARBI Sameh
s.telkhoukh@univ-boumerdes.dz	Sameh.houarbi@enit.tn
Boumerdes University (Algeria)	Tunis El Manar university (Tunisia)

Submitted: 01/09/2025

Accepted:28/11/2025

Published:20/12/2025

Abstract:

Despite growing interest in green human resource management (GHRM), research remains concentrated in Asian contexts with limited empirical investigation in North African countries like Tunisia, where conceptual consensus and standardized assessment tools are lacking, particularly for small and medium-sized enterprises facing green transition challenges.

This study examines GHRM theoretical foundations and practical implementation in Tunisian companies to understand how practices are structured and their impact on organizational efficiency and environmental sustainability. A mixed-method approach was employed, combining a quantitative survey of 40 companies across various sizes and sectors, semi-structured interviews with 10 HR and CSR experts, and two start-up case studies. Data were analyzed using SPSS with Chi-square tests, Pearson and Spearman correlations, and descriptive statistics.

Results show GHRM is progressively transforming Tunisian corporate practices through training and environmental awareness. The industrial sector demonstrates highest integration with formal policies, while primary and tertiary sectors remain developmental. Company size significantly influences adoption, with large firms more likely formalizing green policies ($\chi^2 = 8.76, p < 0.05$). A positive correlation exists between GHRM adoption and organizational performance ($r = 0.57, p < 0.01$). Implementation barriers include limited management commitment, insufficient resources, and weak environmental culture. Recommendations emphasize developing national GHRM strategies with financial incentives, senior management involvement, and environmental culture promotion.

Key words: Human resource management (HRM), sustainable development, green human resource management (GHRM) practices, Tunisian companies.

JEL Classification Codes: M12 , Q01 , M14 .

Introduction

In a world facing escalating environmental challenges, organizations can no longer ignore their green responsibilities. Sustainability has become a strategic imperative to conserve natural resources and maintain long-term competitiveness. Within this context, HRM plays a pivotal role in guiding organizations toward sustainable practices.

GHRM encompasses policies, practices, and systems that promote environmentally responsible behavior among employees by integrating environmental objectives into HR functions, such as recruitment, training, performance management, and compensation. GHRM fosters the development of environmentally aware, resource-efficient, and socially committed organizations. Its effectiveness depends on both strong management commitment and active employee participation at all levels.

Despite growing interest, GHRM remains an emerging research field. Most studies focused on Asian, particularly large manufacturing firms, while limited research has examined countries like Tunisia, where organizational green transitions face significant economic and environmental challenges. The literature is characterized by a lack of conceptual consensus and operational tools to measure the impact of green HR practices.

These gaps suggest that HRM is often approached in a fragmented and theoretical manner, without adequately accounting for the contextual and cultural specificities of developing countries. Empirical research is especially scarce in small and medium-sized enterprises (SMEs) and start-ups, which increasingly contribute to Tunisia's economic landscape. This study seeks to explore the integration of GHRM in Tunisian companies, considering the diversity of business models and the challenges of contextual adaptation.

This article examines the theoretical foundations of HRM and analyzes its practical application using a dual methodology: a survey of 40 Tunisian companies and a series of interviews with HR experts and start-ups. It aims to answer the following question: How are GHRM practices implemented and structured in Tunisian companies, and what impact do they have on organizational efficiency and environmental sustainability?

Literature Review

GHRM has evolved as a strategic framework that integrates environmental objectives into traditional HR functions such as recruitment, training, performance appraisal, and compensation systems (Renwick, Redman, & Maguire, 2013) . Its core purpose is to enhance employee engagement in sustainability initiatives and to align organizational practices with the principles of Corporate Social Responsibility(CSR) and sustainable development .(Leszczynska, 2016).

Early conceptual models underscored the necessity of systematically embedding green practices across all HR functions, highlighting managerial commitment, employee participation, and the development of "GH capital" as key drivers of competitive

advantage (Zhao, Liu, & Sun, 2020). Empirical research has further demonstrated that adopting GHRM practices can enhance organizational performance, improve talent retention, and strengthen corporate reputation in industries facing significant environmental and regulatory challenges. (Wagner, 2013) & (Sidique & Pereira, 2023).

Recent bibliometric studies reveal a substantial increase in GHRM-related publications between 2018 and 2024, particularly in leading journals such as *Journal of Cleaner Production* and *Corporate Social Responsibility and Environmental Management* (Pattinson, Damij, El Maalouf, Hilliard, & Cunningham, 2023). Key research themes emerging from this literature include eco-leadership, green training initiatives, and integrated HR strategies for sustainability. However, the bulk of these studies are concentrated in Asian contexts, including India, China, and Malaysia (Coelho, Couto, & Ferreira-Oliveira, 2024)', with comparatively limited research attention given to North African countries such as Tunisia, where green transition remains a pressing concern (Anlesinya & Abugre, 2020). Moreover, notable methodological gaps persist. Many studies rely on fragmented or purely theoretical approaches, offering limited empirical validation or adaptation to local contexts. The lack of standardized assessment tools for evaluating the environmental impact of HR practices further constrains the comparability and practical applicability of existing research findings.

Overall, the literature underscores both the strategic significance and the underexplored potential of GHRM in emerging economies. It calls for context-specific investigations that combine quantitative rigor with qualitative insights to address organizational, cultural, and regulatory challenges effectively.

1.Theoretical framework: HRM as a strategic lever for sustainability

GHRM is based on the idea that employees' daily behaviors can be directed towards environmental goals through strategic HRM, (Rawal & Bhatia, 2024)

1.1 Getting to know the concept of HRM

According to (Tairu, 2018, p. 491), it encompasses training, raising awareness, motivating and developing the skills of internal and external stakeholders in an environmentally responsible way. (Tabarout & Leboukh, 2014, p. 321) & (Almasrite & Dow, 2023, p. 585)

1.1.1 Definition and conceptual scope of HRM

HRM is in line with corporate social responsibility (CSR) and sustainable development approaches, but emphasizes the central role of individuals in implementing environmental policies, (Okunhon & Ige-Olaobaju, 2024, p. 117). It is based on an alignment between HR objectives and the organization's green objectives. Studies such as those dealing with the specific characteristics of the business context, as in Portugal, expose obstacles to the success of "Green Human Management Resources" practices,

(Coelho, Couto, & Ferreira-Oliveira, 2024) . Thus, human resources professionals need to adopt a strategic approach in accompanying organizational transformations towards greater environmental responsibility, (Parkes & Borland, 2012, p. 815)

1.1.2 HRM models: towards systemic integration

Several authors, including (Leszczynska, 2016, p. 431) & (Nagarajan & Parthasarathy, 2013) & (Zhao, Liu, & Sun, 2020), have proposed models for integrating HRM into managerial strategies. These models stress the need to adapt all traditional HR functions to the demands of sustainability, (Kerdpitak, 2020, p. 563) . Thus, recruitment and selection must give priority to profiles that are sensitive to environmental issues, in order to strengthen employee commitment to these issues. In addition, green performance management integrates environmental indicators into staff appraisals, making it possible to measure and encourage responsible behavior. Green training also appears to be an essential lever for developing sustainability-related skills and fostering environmentally-friendly working practices, (Tari & Nirmala, 2023, p. 2099).

In addition, reward and incentive systems are geared towards valuing innovative and sustainable initiatives, offering recognition and benefits to employees who commit to this approach. Finally, green labor relations play a key role in involving employee representatives and creating a climate of cooperation focused on green issues, thus contributing to a collective dynamic in favor of sustainable development. As is the case in Germany, where these systems have been linked to increased employee satisfaction and better retention, contributing to their effective adoption, (Renwick, Redman, & Maguire, 2013, p. 6) & (Wagner, 2013, p. 450)

Renwick et al (2008) were among the first to structure these practices into a true HRM process model, emphasizing that every HR function can contribute to improving an organization's overall environmental performance.

1.1.3 GHRM as a factor in performance and reputation

The adoption of HRM practices can generate multiple benefits for companies. From a strategic point of view, it can strengthen their competitive edge, retain talent, reduce costs linked to energy consumption or waste, and improve their brand image with stakeholders, (Sidique & Pereira, 2023, p. 5). (Zhao, Liu, & Sun, 2020) put forward the concept of “green human capital”, i.e. an organization's ability to develop skills, attitudes and behaviors that actively contribute to its environmental objectives. This becomes a lever for differentiation in an environment increasingly focused on sustainability.

HRM is not just a managerial trend, but a strategic necessity for any organization wishing to embark on a sustainable, socially and greenly responsible trajectory.

1.2 GHRM as a pillar of organizational sustainability

GHRM is increasingly establishing itself as an essential strategic component for organizations committed to sustainable development. The growing importance attached to GHRM, in the context of sustainable organizational development, is the subject of sustained and in-depth attention within several recent research works. (Leszczynska, 2016, p. 431) points out that the systemic integration of green practices in HRM contributes to improving the overall environmental performance of organizations. (Zhao, Liu, & Sun, 2020, p. 763) highlight the importance of GHRM for strategic differentiation. In their view, the ability to mobilize green skills is a decisive factor in building a sustainable reputation and ensuring long-term growth. Similarly, (Renwick, Redman, & Maguire, 2013, p. 6) stress the need to structure HRM practices within a coherent process model, to ensure their effectiveness and alignment with sustainability.

GHRM is a strategic approach that integrates environmentally responsible practices into HRM. It aims to train, motivate, engage, and develop all stakeholders in the organization in an environmentally friendly manner. It is part of a sustainable dynamic that integrates green recruitment and selection, green performance management, green continuous training, sustainable reward systems, and green social relations.

1.3 Integrated bibliometric analysis of the strategic importance of GHRM

GHRM is an emerging field of research and practice, combining environmental issues with the management of human capital in organizations. In order to better understand the scientific dynamics, trends and conceptual contributions of this discipline, an in-depth bibliometric analysis was carried out on a corpus of over 130 articles extracted from the Scopus database, over the period 2010-2025. The rigorous selection of documents was based on keywords such as "GHRM", "sustainable HRM", "environmental responsibility in HR", as well as terms related to corporate social responsibility (CSR) and sustainable development. This methodology has enabled us to develop a relevant and representative base of major academic work in this field .

1.3.1 Bibliometric trends and the scientific scope of GHRM

A study of bibliometric indicators reveals exponential growth in the number of GHRM-related publications between 2018 and 2024, when the annual volume tripled from 15 articles to 45, testifying to growing interest in the interface between HR practices and environmental sustainability . The most influential scientific journals in this field include Corporate Social Responsibility and Environmental Management, Journal of Cleaner Production and Journal of Business Ethics: they often approach GHRM through the prism of CSR. (Pattinson, Damij, El Maalouf, Hilliard, & Cunningham, 2023)

Thematic analysis based on the frequency of commonly used keywords highlights the dominant key notions: "employee engagement", "eco-leadership", "green training",

and “integrated HR strategies for organizational sustainability”. This conceptual mapping underlines the shared ambition to link HRM and environmental issues in a systemic and holistic way (Viale, Zouari, & Vacher, 2025, p. 10). In addition, the networks of co-authors and international collaborations identified show strong academic involvement in Europe, sub-Saharan Africa and Asia , confirming the global openness and multidisciplinary of the subject. (Renwick, Redman, & Maguire, 2013, p. 7)

1.3.2 Contributions, application contexts and research prospects

This bibliometric analysis testify to the strategic role of GHRM in emerging contexts where sustainability pressures are strong. In regions such as sub-Saharan Africa, GHRM is asserting for organizational performance and eco-innovation, combining economic imperatives and societal responsibility (Anlesinya & Abugre, 2020, p. 130) .

GHRM encompasses social and organizational dimensions, such as strengthening employee commitment, developing environmental skills, and implementing targeted training. These elements reveal a hybridization between traditional HRM and contemporary requirements linked to the green transition.

Methodologically, the analysis highlights the challenges of taking into account different levels of analysis - individual, organizational and institutional - as well as the importance of adapting theoretical models to local specificities, particularly in environments characterized by weak governance or post-conflict contexts (An, Lew, & Khan, 2024). Furthermore, the need to develop new bibliometric and evaluation indicators specific to GHRM is highlighted to better apprehend the real impact of green HR policies on environmental and social sustainability.

Finally, this quantitative and qualitative review validates GHRM as a strategic and operational field in line with the challenges of sustainable development, and suggests avenues for future research aimed at better contextualization, a mixed methodological approach and in-depth evaluation of organizational practices and impacts.

2. Research methodology

This study aims to examine the impact of Green Human Resource Management (GHRM) on both the global and environmental performance of Tunisian companies. To achieve this, a mixed-method approach was employed, integrating a quantitative survey of a representative sample of 40 companies across various sizes and sectors with a qualitative component to enrich the findings.

The qualitative phase involved semi-structured interviews with ten experts in HRM and corporate social responsibility, providing in-depth insights into the challenges, best practices, and obstacles associated with GHRM. Additionally, two case studies were conducted with Tunisian start-ups to demonstrate how GHRM can be operationalized in real-world entrepreneurial contexts.

This combined methodology enabled the study to balance statistical rigor with analytical depth while accounting for the diversity of organizational profiles and the specificities of the Tunisian economic context.

2.1 Quantitative survey: approach and data analysis

The first methodological stage involved a quantitative survey of 40 Tunisian companies of varying size and sector of activity. The sample included micro-enterprises, SMEs and large companies, spread across the primary (agriculture, fishing, mining), secondary (manufacturing, construction) and tertiary (market and non-market) sectors. The questionnaire structuring the survey was based on the five key functions commonly identified in the literature on HRM: green recruitment, environmental performance management, eco-responsibility training, sustainability-related reward systems, and social relations that take green issues into account. Closed questions were used to objectively measure, through quantitative indicators, the level of adoption, frequency of application and formalization of practices within companies. In addition, open-ended questions were introduced to gather the perceptions, motivations and obstacles expressed by those in charge of human resources and green management.

All the data collected via Google Forms was rigorously exported, organized and then prepared in SPSS for statistical analysis.

This preparatory work made it possible to embark on an in-depth analytical phase, using descriptive and inferential statistical techniques to shed light on the dynamics of adoption of GHRM practices according to the sectoral and structural characteristics of the companies studied. The statistical tests used included the Chi-2 test, which was used to determine significant relationships between categorical variables such as company size and the presence of a formal environmental management policy. Pearson's and Spearman's correlations were used to examine links between ordinal or quantitative variables, notably the correlation between the adoption of practices and the perception of their impact. Finally, depending on the richness of data, exploratory factorial analyses were considered to extract the underlying dimensions structuring the observed practices.

2.1.1 Sector analysis of green human resource management practices

The results indicate that the secondary sector - and particularly the manufacturing industry - is the one with the highest prevalence of adoption of GHRM practices. In fact, it has the highest rates of green recruitment, eco-responsible training, formal policies and environmental certifications, underlining a more advanced organizational maturity in these areas. The primary and non-market service sectors show lower levels of integration, reflecting different specific challenges, as well as a construction phase still in progress.

The table below summarizes these sectoral disparities, highlighting the prevalence of key HRM functions within the various sectors:

Table (1): Key HRM functions within the various sectors .

GHRM Function / Sector	Primary Sector	Secondary Sector	Commercial Tertiary Sector	Non-Commercial Tertiary Sector
Green Recruitment	55%	70%	62%	45%
Eco-responsible Training	50%	75%	68%	30%
Formal Eco-Management Policy	45%	80%	70%	25%
Environmental Certifications	35%	65%	50%	20%

Source : Prepared by the researchers.

This sectoral analysis highlights a more pronounced structuring of GHRM actions in the secondary sector, notably materialized by formal policies and a greater quest for environmental certification, while the other sectors remain at progressive stages. This development correlates with regulatory pressure and the increased visibility of environmental issues in industry.

2.1.2 The decisive role of company size in the adoption of HRM policies

Company size also appears to play a decisive role in the formal implementation of green HRM policies. Indeed, the Chi-2 test applied to the relationship between organizational size and the adoption of a code of conduct or green management policy established a statistically significant association ($\chi^2 = 8.76$, $ddl = 2$, $p < 0.05$). Due to their greater financial, human and organizational resources, large companies (over 200 employees) are clearly more inclined to formalize and structure their HRM approach. The following table illustrates this dynamic:

Table (2): The role of company size in the adoption of HRM policies.

Company size	Yes HRMS policy	No HRMS policy	Total
micro	2	3	5
SME large	15	6	21
Large	14	0	14
Total	31	9	40

Source : Prepared by the researchers.

This relationship underlines the need to tailor strategies and recommendations for GHRM to the size of the organization, taking into account the specific capabilities and constraints of each category.

The correlation between the degree of adoption of GHRM practices and the perception of their impact on performance. Another major contribution of the quantitative analysis lies in the identification of a positive and significant correlation ($r = 0.57$, $p < 0.01$) between the level of adoption of green human resource practices and the perception of their favourable impact on companies' overall and environmental performance. This link quantifies the conviction of the players surveyed that the efforts invested in green HRM contribute concretely to improving not only their economic efficiency, but also their environmental responsibility.

As a result, this statistical relationship supports the hypothesis of the added economic and environmental value of GRHV, while underlining the driving role that HRM can play in promoting this integrated dynamic.

2.2 Qualitative interviews: in-depth analysis, contextualization and results

To complement this conceptual framework and gain a better understanding of the concrete implementation of HSMM in organizations, an empirical analysis based on semi-structured interviews was conducted, enabling a practical and qualitative dimension to be integrated into this research. The aim of this approach was to compare theoretical contributions with the perspectives and experiences of operational players, with a view to mutually enriching theory and practice.

As part of the second phase of our methodology, we conducted semi-structured interviews with ten experts from a variety of backgrounds, including managers, NGO representatives and training center professionals. These qualitative exchanges provided an essential lever for deepening our understanding of GHRM, by gathering perspectives and experiences relating to the integration of sustainability practices into HR functions.

The results of these interviews highlight the progression of HRM as a fundamental strategic pillar for organizations committed to sustainable development. This integrated approach differs from traditional models in that it takes into account not only economic and social dimensions, but also environmental issues. It has a triple objective: to improve green performance, optimize the use of natural resources and reinforce the organization's social responsibility. The experts were unanimous in stressing the crucial role of strong, committed leadership at the top of organizations, an indispensable factor in giving impetus to and sustaining GHRM initiatives.

Ongoing employee training and awareness initiatives are essential to embedding and sustaining eco-responsible behavior within organizations. Performance appraisal and recognition systems should incorporate environmental criteria to promote collective engagement with sustainability goals. Consequently, HRM is reshaping traditional human resource functions into drivers of sustainability. Recruitment now considers candidates' ethical and environmental values, attracting talent aligned with the organization's green identity. Performance management integrates indicators related to environmental impact and participation in sustainable initiatives, reinforcing both individual and collective responsibility. Green training provides employees with skills tailored to environmental challenges, while reward policies incentivize eco-friendly behavior and projects. Furthermore, green labor relations foster participatory governance, engaging unions, management, and staff in the co-creation and implementation of environmental policies, thereby promoting transparency, social innovation, and long-term sustainability.

Finally, the interviews enabled us to identify contextual specificities specific to Tunisia, notably regulatory, cultural and structural constraints, which condition the effective implementation of SHRM. These characteristics underline the need to adopt strategies that are finely tuned to local realities. In sum, the qualitative analysis drawn from these interviews illustrates the complexity and depth of the organizational transformation induced by GHRM, revealing a substantial and strategic integration of environmental dimensions within conventional HR practices.

2.3 Complementary case studies: GHRM in Tunisian startups

Although our survey of forty Tunisian companies, covering a diversity of sizes and sectors, identified major trends in GHRM, it did not include startups. To complete this study and enrich the analysis, we conducted in-depth interviews with two Tunisian startups. This choice was justified by the desire to observe how young companies, often characterized by a small structure and limited resources, can also integrate the environmental dimension into their HRM.

The startups selected, Klik2Read and Yalla Bloom, despite their staffs and budget constraints, demonstrate that a concrete commitment to sustainable development is possible from the earliest stages of organizational development. The following analysis highlights their respective approaches, practices and challenges in implementing GHRM.

2.3.1 Klik2Read: an environmental commitment despite limited resources

Klik2Read is a Tunisian start-up specializing in e-books and the promotion of digital reading. Despite a small team of just four employees, the company uses the principles of ISO 26000 to manage its HR, integrating social responsibility into its overall strategy.

Beyond simply promoting digital reading, Klik2Read offers other companies committed to environmentally friendly management concrete solutions to strengthen their CSR strategy. Through its platform, it provides digital reading spaces that ensure the well-being of employees while supporting an environmentally friendly approach that reconciles personal development and environmental responsibility.

All staff are highly environmentally aware, helping to reduce business travel and the startup's carbon footprint. Klik2Read is also actively involved in corporate social responsibility (CSR) events, particularly those focusing on environmental issues.

During the interview, the manager emphasized that, despite the company's small size and limited financial resources, management remains fully committed to environmental protection. Employees are seen as collaborators, and also as responsible partners who share the company's ethical and cultural values. This approach is based on the conviction that the distribution of digital content contributes significantly to reducing paper waste and limiting deforestation, illustrating how a young company can effectively integrate GHRM into a sustainable business model.

2.3.2 Yalla Bloom: an integrated approach to GHRM at hydroponic innovation

Following a semi-structured interview with the head of the startup Yalla Bloom, it appears that this young Tunisian company is a concrete example of the integration of green management into an innovative startup, with a strong emphasis on the human dimension. Yalla Bloom develops sustainable, local, and accessible hydroponic solutions based on three major technological pillars: an green soil-less hydroponic system, an automated device to optimize crop management, and a scientific innovation aimed at reducing water salinity, a crucial issue in the Mediterranean context. Beyond technology, Yalla Bloom is part of a collaborative approach with farmers, key partners who benefit from tools and training to modernize their practices while preserving natural resources.

HRM is proving to be an essential lever: the company trains its employees in climate change, the circular economy, and ISO 14001, thereby enhancing their environmental skills. The emphasis on well-being, continuing education, and a sense of purpose reflects a “Green HR” approach where green and human commitment are inseparable. Zero-waste practices, such as reusing and purifying water, repairing and recycling technological equipment, and raising awareness among partners, give concrete expression to this commitment.

Finally, the multidisciplinary and complementary team, as well as the ongoing training of farmers in innovative green practices (particularly the management of nanoparticles to reduce salinity), demonstrates an open and locally rooted model that promotes the dissemination of good environmental practices.

2.4 Methodological abstract and data integration

The strength of this methodological approach lies undeniably in the complementary nature of the quantitative analysis, which is robust and generalist, and the qualitative approach, which is contextual and in-depth. The systematic exploitation of the quantitative data collected, combined with the thematic analysis derived from the interviews, offers both a global and nuanced vision of the place and effects of GHRM in Tunisia. The quantitative analyses reveal strong structural trends, according to business sector and company size, and use statistical tests to confirm the validity of the hypotheses put forward. At the same time, qualitative work sheds light on internal dynamics, organizational change processes, resistance and the levers to be mobilized in order to make a successful transition to green, high-performance HRM.

In the final analysis, this mixed methodology guarantees the scientific rigor essential to a high-level academic publication, by providing summary tables and detailed analyses that convincingly support the conclusions and recommendations formulated. These elements are valuable levers for building HRM policies and practices adapted to the concrete needs of both small and large companies in the specific Tunisian context.

3. Results

3.1. Sectoral Analysis of GHRM Practices

Analysis of data from 40 Tunisian companies reveals that the secondary sector, particularly manufacturing industry, demonstrates the highest prevalence of GHRM adoption across all measured dimensions. The secondary sector achieved 80% implementation of formal eco-management policies, 75% eco-responsible training coverage, 70% green recruitment practices, and 65% environmental certifications. In contrast, the primary sector showed moderate adoption rates (45% formal policies, 50% eco-training), while the non-commercial tertiary sector exhibited the lowest integration levels (25% formal policies, 30% eco-training). The commercial tertiary sector occupied an intermediate position with 70% formal policies and 68% eco-responsible training

3.2. Influence of Company Size on GHRM Adoption

Company size emerged as a significant determinant of formal GHRM policy implementation. The Chi-square test revealed a statistically significant association between organizational size and adoption of green management policies ($\chi^2 = 8.76$, $df = 2$, $p < 0.05$). Large companies (over 200 employees) demonstrated complete adoption, with all 14 surveyed firms implementing formal GHRM policies. Among SMEs, 15 of 21 companies (71.4%) had established green policies, while micro-enterprises showed limited adoption with only 2 of 5 firms (40%) implementing formal policies

3.3. Correlation Between GHRM Adoption and Organizational Performance

A positive and significant correlation ($r = 0.57$, $p < 0.01$) was identified between the level of GHRM practice adoption and perceived favorable impact on companies' overall and environmental performance. This relationship quantifies stakeholder conviction that investments in green HRM contribute concretely to improving both economic efficiency and environmental responsibility.

3.4. Qualitative Insights from Expert Interviews

Semi-structured interviews with 10 experts revealed that GHRM is progressively establishing itself as a fundamental strategic pillar for organizations committed to sustainable development. Experts unanimously emphasized the crucial role of strong, committed leadership at senior management levels as an indispensable factor in initiating and sustaining GHRM initiatives. Key findings indicate that recruitment processes now consider candidates' ethical and environmental values, performance management integrates environmental impact indicators, and green training provides employees with skills tailored to environmental challenges. However, interviews identified significant contextual barriers specific to Tunisia, including regulatory constraints, cultural limitations, structural obstacles, weak management commitment, limited financial

resources, and underdeveloped environmental culture, particularly in smaller firms and less exposed sectors.

3.5. Case Study Evidence from Tunisian Start-ups

Two Tunisian start-ups—Clik2Read and Yalla Bloom—demonstrated that environmental commitment is feasible despite limited resources. Clik2Read, with only four employees, applies ISO 26000 principles to HR management and actively participates in CSR events focusing on environmental issues. Yalla Bloom integrates GHRM through comprehensive employee training in climate change, circular economy, and ISO 14001, implementing zero-waste practices including water reuse and purification, equipment repair and recycling, and partner awareness programs.

3.6. Key Adoption Patterns and Benefits

Companies implementing GHRM practices reported tangible benefits including enhanced team motivation, stronger corporate image, and development of more responsible organizational culture. Leading adopters gained competitive advantages through improved talent retention and optimized resource usage. Primary interventions focused on training and eco-responsibility awareness, supported by internal communication to reinforce employee engagement. However, practices such as green recruitment and environmental performance management remain limited due to insufficient assessment tools and standardized metrics.

4. Discussion

4.1. Emergence of GHRM in the Tunisian Context

The findings reveal that GHRM in Tunisia represents an emerging field currently undergoing progressive development, characterized by innovative initiatives yet confronting substantial implementation challenges. While the study demonstrates that environmental objectives are increasingly integrated into core HR policies, this integration marks only an initial step toward systematic sustainability management. The observed transformation of corporate practices through training and environmental awareness initiatives indicates a foundational shift in organizational consciousness, though the depth and breadth of implementation remain uneven across sectors and organizational sizes.

4.2. Sectoral Disparities and Their Implications

The pronounced dominance of the secondary sector in GHRM adoption, particularly within manufacturing industries, reflects the intersection of multiple driving forces including heightened regulatory pressure, increased visibility of environmental issues, and stakeholder expectations. This sectoral analysis underscores that industries facing

significant environmental and regulatory challenges demonstrate more advanced organizational maturity in formalizing green practices and pursuing environmental certifications. Conversely, the primary and non-commercial tertiary sectors remain at progressive developmental stages, reflecting sector-specific challenges including limited exposure to environmental regulations, resource constraints, and different operational priorities.

The relatively lower integration in non-market service sectors (25% formal policies, 30% eco-training) suggests that organizations not directly engaged in production or manufacturing perceive GHRM as less relevant to their core operations, representing a significant gap in understanding the universal applicability of environmental responsibility across all organizational types.

4.3. Organizational Capacity and Resource Determinants

The statistically significant relationship between company size and GHRM adoption ($\chi^2 = 8.76, p < 0.05$) confirms that organizational capacity represents a decisive factor in formalizing green HR policies. Large companies, benefiting from greater financial, human, and organizational resources, demonstrate clear advantages in structuring comprehensive GHRM approaches. This finding underscores the necessity to tailor GHRM strategies and recommendations to organizational size, accounting for specific capabilities and constraints of each category.

The challenge facing SMEs and micro-enterprises extends beyond mere financial limitations; it encompasses gaps in technical expertise, limited access to specialized training, absence of dedicated sustainability personnel, and insufficient knowledge of international standards and best practices. These constraints explain why only 40% of micro-enterprises have implemented formal GHRM policies compared to 100% of large firms.

4.4. The Performance-Sustainability Nexus

The positive correlation ($r = 0.57, p < 0.01$) between GHRM adoption and perceived organizational performance provides empirical support for the strategic value proposition of green HR practices. This relationship validates the hypothesis that investments in environmental HR initiatives generate dual benefits—enhancing both economic efficiency and environmental responsibility. The finding aligns with theoretical frameworks emphasizing "green human capital" as a lever for strategic differentiation in environments increasingly focused on sustainability.

Organizations adopting GHRM practices report tangible benefits including enhanced team motivation, stronger corporate image, improved talent retention, and optimized

resource usage. These outcomes suggest that GHRM contributes to building competitive advantages that extend beyond compliance, positioning sustainability as a value-creation driver rather than merely a cost center.

4.5. Implementation Barriers and Organizational Obstacles

Despite growing strategic awareness, expert interviews revealed persistent organizational obstacles that constrain effective GHRM implementation. Weak management commitment emerges as a critical barrier, reflecting insufficient understanding of GHRM's strategic potential among senior leadership or competing organizational priorities that relegate sustainability to secondary status. Limited financial resources restrict investments in green technologies, employee training programs, environmental certifications, and specialized personnel.

The underdeveloped environmental culture, particularly pronounced in smaller firms and less exposed sectors, represents a fundamental challenge requiring long-term cultural transformation rather than superficial policy changes. This cultural dimension encompasses employee attitudes, organizational values, leadership commitment, and stakeholder engagement—elements that cannot be rapidly changed through top-down mandates alone.

4.6. Limitations in Assessment Tools and Metrics

The study identifies a critical gap in standardized assessment tools and metrics for evaluating GHRM effectiveness. Practices such as green recruitment and environmental performance management remain limited precisely because organizations lack clear frameworks for measuring environmental impact, tracking progress, and demonstrating return on investment. This methodological deficit constrains both academic research and practical implementation, preventing organizations from making evidence-based decisions about GHRM investments.

4.7. Contextual Specificities of Tunisia

The qualitative analysis revealed contextual factors specific to Tunisia that condition effective GHRM implementation, including regulatory constraints, cultural limitations, and structural obstacles. Tunisia's position as a North African emerging economy presents unique challenges including limited institutional support for sustainability, economic pressures that prioritize short-term survival over long-term environmental investments, and cultural orientations that may not align with Western-derived GHRM models.

These contextual specificities underscore the critical need to adapt GHRM strategies to local realities rather than adopting standardized approaches developed in different economic, cultural, and regulatory environments. The concentration of existing research in Asian contexts (India, China, Malaysia) with comparatively limited attention to North African countries reinforces the importance of context-specific investigations that combine quantitative rigor with qualitative insights.

4.8. Entrepreneurial Adaptability: Insights from Start-ups

The case studies of Klik2Read and Yalla Bloom demonstrate that environmental commitment and GHRM integration are feasible even within resource-constrained entrepreneurial contexts. These examples challenge assumptions that GHRM requires substantial organizational infrastructure, showing instead that strategic vision, founder commitment, and alignment between business model and environmental values can enable effective green practices from organizational inception.

Yalla Bloom's comprehensive approach—integrating employee training in climate change and circular economy, implementing zero-waste practices, and extending environmental education to external partners—illustrates how GHRM can become embedded within organizational DNA rather than functioning as an add-on program. Similarly, Klik2Read's digital business model inherently reduces environmental footprint while simultaneously building employee environmental awareness.

4.9. Strategic Implications for Organizational Transformation

The study reveals that successful GHRM implementation requires more than isolated HR practices; it demands comprehensive organizational transformation encompassing strategic vision, leadership commitment, and proactive stakeholder engagement. GHRM effectiveness depends on systemic integration across all HR functions—recruitment that prioritizes environmental values, performance management incorporating sustainability indicators, training developing green competencies, reward systems incentivizing eco-friendly behavior, and labor relations fostering participatory governance.

This complexity highlights that GHRM represents a fundamental reconceptualization of human resource management rather than incremental modification of existing practices. Organizations must recognize that transitioning to green HRM involves technical, organizational, and cultural dimensions that require sustained effort, resource commitment, and change management capabilities.

4.10. Alignment with International Literature

The findings corroborate international research demonstrating GHRM's potential to enhance organizational performance, improve talent retention, and strengthen corporate reputation. The emphasis on eco-leadership, green training, and integrated HR strategies for sustainability aligns with dominant themes identified in bibliometric analyses of GHRM literature. However, the Tunisian evidence also validates criticisms that existing research relies on fragmented or purely theoretical approaches with limited empirical validation or contextual adaptation.

The study contributes to addressing the underexplored potential of GHRM in emerging economies, responding to calls for context-specific investigations that account for organizational, cultural, and regulatory challenges distinct from developed or Asian contexts.

4.11. Pathways Forward: Requirements for Sustainable GHRM Adoption

The research indicates that successful GHRM development in Tunisia requires a multi-level approach combining individual organizational initiatives with broader institutional support. At the organizational level, success depends on integrating environmental considerations into strategic plans with clear goals and measurable performance indicators, securing strong senior management commitment including dedicated financial and human resources, and developing green organizational culture through comprehensive training and internal communication.

At the institutional level, progress requires regulatory frameworks and government incentives that encourage rather than merely permit GHRM adoption, partnerships between universities and organizations to advance specialized educational programs in sustainable HRM, and development of standardized tools leveraging digital technologies and artificial intelligence to assess GHRM impact on environmental and organizational performance.

The identification of these multilevel requirements reinforces that GHRM cannot succeed through isolated organizational efforts alone; it requires an enabling ecosystem that provides knowledge, resources, incentives, and cultural support for sustainability integration.

5. Conclusion

GHRM is essential for the sustainable transformation of organizations in a context where environmental issues are increasingly important. By integrating environmental objectives at the heart of HR policies and practices, companies can not strengthen their

economic and organizational performance, and actively contribute to building a responsible, resilient corporate culture with contemporary societal expectations.

The results based on a dual methodological approach combining quantitative surveys and qualitative interviews with a representative panel of Tunisian companies and experts, illustrate that HRM in Tunisia is a process in full development, driven by innovative initiatives but facing multiple challenges. Its success requires an integrated strategic approach, a strong commitment from top management, real involvement from HR managers and ongoing awareness-raising among employees. To ensure consistency and sustainability, this integration must also cut across all organizational processes.

Faced with the profound changes imposed by climate, social, and economic challenges, green HRM offers a promising avenue for reconciling organizational efficiency and environmental responsibility. It also represents a key driver of attractiveness and differentiation for companies, particularly in the war for talent and in enhancing their image among stakeholders. In this context, it is essential that researchers, policymakers, and practitioners pay increased attention to HRM by increasing contextualized empirical research and developing tools adapted to the specific realities of Tunisian companies. A detailed understanding of transformation mechanisms and the identification of practices are key to supporting this green human resources transition, which is emerging as a sine qua non for the sustainable development of organizations.

The study emphasizes the integration of environmental considerations into corporate strategic plans by establishing clear environmental goals and measurable performance indicators. It highlights the need for strong senior management commitment, including the allocation of financial and human resources and dedicated budgets for environmental initiatives. Developing a green organizational culture is recommended across all administrative levels through training, internal communication, and specialized green HRM programs for HR staff and executives.

The study advocates for the creation of tools to assess the impact of HR practices on environmental and organizational performance, leveraging digital technologies and artificial intelligence, and enhancing green recruitment policies to attract and train environmentally conscious talent. Applied and field studies are encouraged to identify best practices tailored to the Tunisian context and to enable cross-country comparisons.

Furthermore, the development of regulatory frameworks and government incentives is recommended to adopt GHRM practices. Partnerships between universities and institutions should be promoted to advance specialized educational and research programs in sustainable HRM. Finally, environmental awareness campaigns and employee engagement through green work teams or internal sustainability committees are highlighted as key strategies to embed sustainability in organizations.

As future studies, topics related to:

- The role of organizational culture in the adoption of GHRM in organizations
- The impact of government policies and on the adoption of GHRM practices in SME.
- The use of artificial intelligence to promote GHRM practices: an applied study.
- The importance of digital transformation in supporting sustainable HRM.

6. References

- Almasrite, S., & Dow, A. (2023). The Role and Functions of Human Resource Management in Building. *International Journal of Economic Performance (IJEP)*, 6(2), 579-605. <https://asjp.cerist.dz/en/article/235272>
- Anlesinya, A., & Abugre, J. (2020). The Influence of Training Participation on Employee Performance and Employee Intention to Leave Manufacturing Firms in sub-Saharan Africa: A Study of Ghana. *Pan-African Journal of Business Management*, 4. <https://journals.out.ac.tz/index.php/pajbm/article/view/721?utm>
- Coelho, J., Couto, A., & Ferreira-Oliveira, A. (2024). Green Human Resource Management: Practices, Benefits, and Constraints—Evidence from the Portuguese Context. *Sustainability (Switzerland)*, 16(13). <https://www.mdpi.com/>
- Kerdpitak, C. (2020). The effects of environmental management and HRM practices on the operational performance in Thai pharmaceutical industry. *Systematic Reviews in Pharmacy*, 11(2), 555-565. https://www.researchgate.net/publication/340484586_Analysis_of_grid_inertial_response_with_high_penetration_of_PV_systems_and_battery_energy_storage
- Leszczynska, A. (2016, 9 1-2). Conceptualization of Green Human Resource Management. *16th International Scientific Conference on Economic and Social Development: Legal Challenges of the Modern World*. https://www.researchgate.net/publication/338037961_CONCEPTUALIZATION_OF_GREEN_HUMAN_RESOURCE_MANAGEMENT
- Nagarajan, G., & Parthasarathy, K. (2013). A journal on green human resource management with an exclusive focus on green work-life balance. *A journal on green human resource management with International Journal of Business and Management Research IRJBM*. https://www.researchgate.net/publication/364524473_Andres_OLLERO_Religion_razon_y_politica_Comares_Granada_2013
- Okunhon, P., & Ige-Olaobaju, A. (2024). Green human resource management: Revealing the route to environmental sustainability. *In Waste Management and Life Cycle Assessment for Sustainable Business Practice*, 11-130. https://link.springer.com/chapter/10.1007/978-981-19-0496-1_5
- Parkes, C., & Borland, H. (2012). Strategic hrn : Transforming its responsibilities toward green sustainability-the greatest global challenge facing organizations. *Strategic hrn : Transforming its responsibilities toward ecologi Thunderbird International Business Review*, 54(6), 811-824.

- https://www.researchgate.net/publication/227717734_Strategic_HRM_Transforming_its_responsibilities_toward_green_sustainabilityThe_greatest_global_challenge_facing_organizations
- Pattinson, S., Damij, N., El Maalouf, N., Hilliard, R., & Cunningham, J. (2023). Building Green Innovation Networks for People, Planet, and Profit: A Multi-Level, Multi-Value Approach. *Industrial Marketing Management*(115), 408-420. <https://www.sciencedirect.com/>
 - Rawal, N., & Bhatia, M. (2024). 2024 IEEE 4th international conference on ICT in business industry and government. *ICTBIG 2024 opens journal in a few tab.* <https://ieeexplore.ieee.org/document/10404948>
 - Renwick, D., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International Journal of Management Reviews*, 15(1), 1-14. https://www.researchgate.net/publication/384774643_Organizational_Knowledge_and_Knowledge_Management_-_A_New_Framework
 - Sidique, N., & Pereira, L. (2023). The Impact of Green Human Resource Management Practices on Digital Transformation. In *Studies in Systems, Decision and Control. The Impact of Green Human Resource Management Practices on Digital Transformation. In Studies Springer Science and Business Media Deutschland GmbH*(497), 1-15. <https://link.springer.com/>
 - Tabarout, A., & Leboukh, F. (2014). Human Resource Management: Trends & Practices For The 21st Century. *International Journal of Economic Performance (IJEP)*, 7(2), 317-333. <https://asjp.cerist.dz/en/article/258479>
 - Tairu, O. (2018). Green Human Resource Management Delivering High-Performance Human Resource Systems at Divine Word University Papua New Guinea. *Global Sustainability Series. Handbook of Sustainability Science and Research.* https://link.springer.com/chapter/10.1007/978-3-319-63007-6_16
 - Tari, S., & Nirmala, R. (2023). Analyzing the effect of green human resource management to attain organizational sustainability. *Analyzing the effect of green human resource man International Journal of System Assurance Engineering and Management*, 14(6), 2095-2119. <https://link.springer.com/article/10.1007/s13198-023-02157-2>
 - Viale, L., Zouari, D., & Vacher, S. (2025). Eco-leadership at the heart of the supply chain: The pivotal role of the buyer in eco-innovation. *Logistics & Management*, 33(1), 4-25.
 - Wagner, M. (2013). « Green » Human Resource Benefits : Do they Matter as Determinants of Environmental Management System Implementation? *Journal of Business Ethics*, 114(3), 443-456. <https://doi.org/10.1007/s10551-012-1356-9>
 - Zhao, J., Liu, H., & Sun, W. (2020). How a proactive environmental strategy facilitates environmental reputation; Roles of green human resource management and discretionary margin. *Sustainability*(12). <https://www.mdpi.com>