International Journal of Research in Human Resource Management

E-ISSN: 2663-3361
P-ISSN: 2663-3213
IJRHRM 2025; 7(2): 481-491
Impact Factor (RJIF): 6.16
www.humanresourcejournal.com
Received: 28-08-2025
Accepted: 02-10-2025

Aspridis M Georgios
a) Department of Forestry, Wood Sciences and Design, University of Thessaly Greece, Hellenic Open University, Greece
b) Department of Financial and Management Engineering, University of Aegean, Greece

Evangelos Karampotsis
Department of Financial and Management Engineering, University of Aegean, Greece

Leontis C Dimitrios
Department of Forestry, Wood Sciences and Design, University of Thessaly Greece, Hellenic Open University, Greece

Maria K Termentzoglou
Department of Forestry, Wood Sciences and Design, University of Thessaly Greece, Hellenic Open University, Greece

Corresponding Author:
Evangelos Karampotsis
Department of Financial and Management Engineering, University of Aegean, Greece

An empirical study on green human resource management in wood and furniture businesses in Greece

Aspridis M Georgios, Evangelos Karampotsis, Evangelos Rambotsis, Leontis C Dimitrios and Maria K Termentzoglou

DOI: https://doi.org/10.33545/26633213.2025.v7.i2d.363

Abstract
This paper investigates the implementation of Green Human Resource Management (GHRM) within the Greek wood and furniture industry, a sector distinguished by its high environmental sensitivity and dependence on natural resources. The literature review underscores the significance of practices such as green recruitment, training, performance evaluation and reward systems in fostering an organizational culture aligned with sustainability. Empirical evidence was derived from a questionnaire survey administered to 149 employees and executives of small and medium-sized enterprises operating in the sector.
The findings indicate that although firms have adopted fundamental practices, including energy conservation and waste management, the integration of more specialized initiatives such as the use of environmentally friendly chemicals and ecological suppliers remains limited. Statistical analysis further revealed that variables such as age, educational attainment, professional experience and hierarchical position significantly influence attitudes toward GHRM. In particular, younger, more highly educated and higher-ranking respondents demonstrated stronger acceptance of such practices. Importantly, environmental education emerged as a critical driver, directly associated with performance evaluation and incentive mechanisms. Overall, the sector appears to be in a transitional stage of partial adoption of GHRM practices. Institutionalizing education, evaluation and reward structures is likely to reinforce environmental culture, thereby enhancing both the sustainability and competitiveness of the industry.

Keywords: Environmental Culture, Sustainable Development, Small and Medium Enterprises

1. Introduction
Green Management can be defined as a conceptual and practical management framework that aims to create and market environmentally friendly products and services. The production of these products aims to mitigate adverse environmental impacts by implementing sustainable production processes, promoting green research and development and adopting green marketing strategies [1]. Furthermore, some research highlights the positive association between Green Human Resource Management (GHRM) practices and an organization's innovation and environmental performance [2].
In this context, Green Human Resource Management constitutes a more specific dimension, focusing on cultivating environmental awareness and sensitization, while also being part of a broader perspective that encompasses the social and economic well-being of both the company and its employees. This approach promotes the active involvement of human resources in corporate social responsibility practices, thereby contributing not only to the individual development of employees, but also to the sustainability of the organization and the strengthening of its relationships with stakeholders [3], [4].
Additionally, Green Human Resource Management can be understood as the institutionalized integration of human capital and environmental management practices, serving as a mechanism for shaping an organizational culture that prioritizes sustainable development [5]. Within this framework, corporate social responsibility has functioned as the foundational platform for the emergence of a new business ethic, while Green Human Resource Management can be regarded as its systematic evolution and functional continuity, tailored to the demands of the modern organizational environment [6].
Specifically, green HRM functions emphasize the recruitment, training and performance

evaluation of employees in accordance with environmental protection principles. These functions fall into three categories: (a) green selection and recruitment of executives, i.e. people who are aware of environmental problems and are interested in contributing to their solution, (b) the development of appropriate evaluation systems with environmental criteria and (c) the strengthening of an organizational culture that will encourage executives to work to preserve the natural environment [7].

The primary applications of Green Human Resource Management are evident in multiple functional dimensions of personnel management, integrating environmental parameters into the management strategy [8].

Human Resource Education and Training involve the development of specialized programs focused on environmental awareness and management, thereby enhancing employees' green behaviors and promoting innovative practices within organizations [9]. At the same time, participation, empowerment and the cultivation of a culture among employees contribute to the development of environmentally responsible attitudes [4].Furthermore, the evaluation and professional development of employees on the basis of green criteria are positively associated with improved organizational performance, reinforcing the link between sustainable human resource practices and overall corporate effectiveness. [2].

Motivation and reward systems constitute a central mechanism for fostering environmental commitment, as organizations offer both tangible and intangible incentives to employees who comply with ecological practices [9].

Given the above theoretical framework, it is necessary to examine the application of Green Human Resource Management principles within specific sectors of economic activity; to determine to what extent these theoretical principles are translated into practical policies and procedures. Empirical analysis in sectors with direct dependence on natural resources, such as the wood-furniture sector, enables the capture of the real dimension of Green Human Resource Management as well as the evaluation of the challenges and prospects that arise from its application in the Greek business environment.

The wood-furniture sector is one of the most traditional and environmentally sensitive sectors of Greek industry. Its direct dependence on natural resources, combined with the increasing social and institutional pressures to adopt sustainable practices, makes it necessary to study how companies integrate Green Human Resource Management practices into their daily operations. At the same time, the choice of the sector is justified by the need to understand the challenges and opportunities faced by small and medium-sized and family businesses, which dominate this sector [10], [11].

The aim of this paper is, on the one hand, to capture the level of implementation of green practices in human resource management, and on the other hand, to investigate their relationship with organizational performance and maintaining competitiveness in the sector. In particular, it seeks to understand how the processes of recruitment, training, evaluation and motivation of employees can be integrated into a framework of environmental responsibility and how these contribute to the formation of a green culture. In addition, the methodological choice of using a questionnaire and the application of statistical analysis to the collected data give the work an empirical character, allowing the extraction of safe and generalizable conclusions.

In conclusion, this article aims to provide a comprehensive picture of the current situation in the wood-furniture sector in Greece, to identify the benefits and obstacles of implementing green practices in human resource management and to contribute to the formulation of policy and strategy proposals that will enhance the sustainability and competitiveness of this specific sector of the Greek economy.

Literature Review

International literature highlights that the wood-furniture industry is a particularly critical sector for the study of Green Human Resource Management, as it is directly linked to the exploitation of natural resources and presents high demands in terms of sustainable management. Research data from Malaysia demonstrates that Green Human Resource Management practices, such as green recruitment and personnel selection, training, evaluation and rewards are positively associated with environmental innovation in furniture companies. In fact, the presenceof an innovative organizational culture serves to reinforce this relationship, demonstrating that internal culture is a key factor in transforming green policies into innovative results [12].

In a similar context, a doctoral thesis in the same field confirmed the role of Green Human Resource Management as a strategic lever for fostering environmental innovation within organizations. It highlighted the need for an integrated model for its implementation in furniture companies [13].

Looking beyond borders, the global experience underscores the significance of eco-design and product life cycle analysis in the furniture industry. A case study on wood-furniture products, for instance, revealed that the choice of materials and production processes plays a pivotal role in determining the environmental footprint. This finding underscores the global need to train and assess personnel in the correct implementation of environmental management practices [14]. Similarly, studies conducted at the European level, using life cycle analyses of eco-designed prototypes, have shown that environmental benefits can only be confirmed through a holistic view of the entire life cycle. This underscores the global need for systemic practices and standardized skills, which are the focus of Green Human Resource Management [15], [16].

Simultaneously, the circular economy in the furniture sector has been extensively studied at the European level, underscoring the sector's pivotal role. Research indicates that the main barriers are the limited development of design solutions for reuse and repair as well as the low demand for recycled materials. The furniture sector, a significant contributor accounting for approximately 28% of global production and employing nearly one million workers in the European Union, highlights the need to develop skills related to disassembly, material sorting and returns management. These requirements are translated into staff training, evaluation and motivation policies, which are central elements of Green Human Resource Management [17], [18], [19].

In terms of waste and resource efficiency, empirical studies in the Brazilian furniture industry have recorded significant amounts of wood waste, accounting for approximately 9% of the total weight of inputs. Of this waste, almost half

consists of shavings and the rest of sawdust, highlighting the need for trained reuse and by-product management processes. At the same time, waste recovery scenarios in construction were examined, demonstrating that appropriate Human Resource Management policies can incorporate environmental performance indicators related to waste reduction and recovery [20].

Finally, in terms of governance and corporate responsibility, studies of Malaysian wood-furniture companies reveal that the adoption of ESG (Environmental, Social, Governance) practices is higher in large companies, with a greater emphasis on the use of certified timber, Environmental Management Systems and waste management compared to the social dimension. This finding highlights the need for tailored green HRM policies that will respond to the needs of SMEs, which dominate this sector [20].

In the Greek economy, the wood and furniture sector, classified in the Statistical Classification of Economic Activities of the European Union (NACE) as category C31, is characterized by a remarkably high degree of fragmentation. The dominance of small and medium-sized enterprises presents a complex landscape that warrants further research and a deeper understanding. It is estimated that by 2025, more than 3,000 enterprises will be active, constituting a market with a strong presence of small and medium-sized units and heterogeneous compliance and innovation capacities [1]. The overall market has shown signs of resilience in recent years, with manufacturing activity stabilizing and demand strengthening in sectors such as e-commerce, which is linked to the recovery of other sectors, including tourism and hospitality, home renovations and professional equipment. ECDB statistics indicate a recovery of some activity following periods of disruption. At the same time, sectoral studies report an expansion of the furniture market following 2020, with differentiation by sub-category, including home furniture, kitchens, office equipment and upholstered furniture [3]. This picture is complemented by the increase in turnover in the furniture e-commerce sector. This element reflects changes in demand and pressures to upgrade organizational skills, such as supply chain management, customer service and sustainable packaging.

Historically, the Greek sector was particularly affected by the financial crisis, which resulted in a significant decline in domestic demand and led to a restructuring of business models. This development increased the attention of businesses to cost reduction and to the management of materials and inventories. The effects were recorded in Greek literature, with studies highlighting the weaknesses in financing, the pressures on exports and imports and the urgent need to strengthen organizational capabilities [21]. In the current context, the effort to reposition the industry is based on three complementary axes: compliance with supply chain standards and certifications, the digital transformation of commercial channels and the implementation of resource efficiency business practices, such as waste minimization and the utilization of by-products. [22].

Within this socio-economic environment, Green Human Resource Management in the Greek wood and furniture sector is primarily shaped as a "functional response" to compliance and efficiency requirements, rather than constituting a fully developed and integrated system of policies.

In larger and export-oriented companies, the adoption of environmental management systems and raw material certifications, such as those through legal and certified timber chains, is linked to more standardized practices of training and evaluating staff based on environmental criteria. In contrast, in small and medium-sized enterprises, these practices often appear fragmented, focusing on individual skills, such as material safety, proper storage and cutting practices and by-product sorting as well as on short-term cost reduction goals. This model aligns with international findings for SMEs in natural resource-intensive sectors, where the adoption of environmental, social and intergovernmental practices as well as circular economy strategies is often higher in larger units. It requires tailored Human Resource Management policies to translate these practices into meaningful skills and everyday behaviors [2] [23].

A critical practical area of Green Human Resource Management in the sector is material and waste management. International empirical studies from furniture production centers indicate that wood waste, including shavings and sawdust, can account for a substantial percentage of the total input weight. This element provides direct and measurable indicators, which can be integrated into green performance evaluation systems, such as the waste rate and the by-product utilization index, and linked to employee incentive schemes [20]. The application of these indicators in the Greek sector can contribute to the alignment of production goals with environmental policies, linking green training - such as proper cutting, optimization of material use and systematic sorting of flows - with clear organizational returns, such as cost reduction, compliance with standards and strengthening of corporate reputation.

In conclusion, Green HRM in the Greek wood and furniture industry is developing through a gradual and uneven adoption process, characterized by greater institutional standardization in larger, export-oriented firms and more operational, practice-based implementation in smaller enterprises.This picture highlights, on the one hand, the challenges faced by the industry, such as limited institutionalization and the lack of systematic policies, and on the other hand, the opportunities that arise from integrating green practices into the HRM strategy. The development of systematic training programs, the institutionalization of environmental evaluation indicators and the implementation of targeted incentives can serve as catalysts for the industry's transition towards a more sustainable and competitive direction.

Methodology

The methodology followed in this specific work includes

[1] Furniture Manufacturing in Greece - Market Size, Industry Analysis, Trends and Forecasts (2025-2030) (https://www.ibisworld.com/greece/industry/furniture-manufacturing/200051/)

[2] Environmental, social, and governance adoption in the Malaysian wood products and furniture industries: Awareness, adoption, and challenges (https://bioresources.cnr.ncsu.edu/resources/environmental-social-and-governance-adoption-in-the-malaysian-wood-products-and-furniture-industries-awareness-adoption-and-challenges/)

five key points, as presented in Figure 1: (a) Questionnaire Construction, (b) Questionnaire Distribution, (c) Data Collection and Pre-Processing, (d) Statistical Analysis of the Data and (e) Conclusions

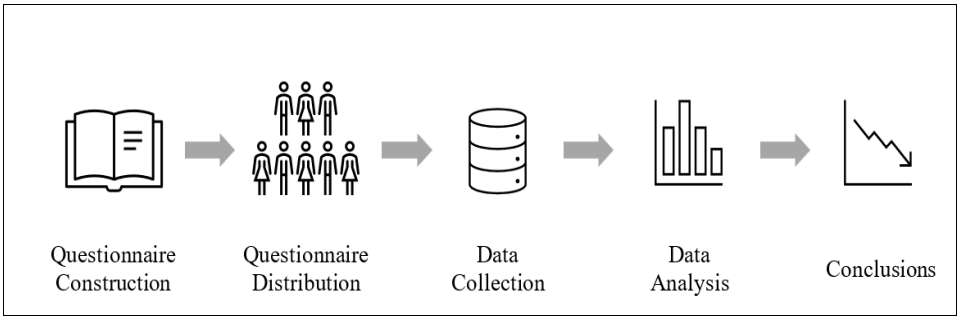

Fig 1: Methodological Framework (a) Questionnaire Construction, (b) Questionnaire Distribution, (c) Data Collection, (d) Data Analysis and (e) Conclusions

The questionnaire used in this study was developed based on the study by A. Shafaei, M. Nejati, and Y. Mohd Yusoff (2020) [24]. This questionnaire was adapted to meet the specific needs of this study after written consent from the original authors. The process of obtaining permission to use it was carried out through formal communication with Dr. Azadeh Shafaei Darastani, who, by email on November 28, 2023, provided the required authorization to use the questionnaire in the context of this study.

The questionnaire used in this study consists of two parts. More specifically, the first part of the questionnaire focused on the demographic characteristics of the participants in the study (Gender, Age Group, Education Level, Sector of Work, Job Position, Years of Experience in the Sector of Work, Years of Experience in the Current Job Position). The questions (Table 1) of the second part of this questionnaire aim to investigate green HRM practices, environmental culture, job satisfaction and performance rated according to the Likert scale [25].

It is noteworthy to mention that the questionnaire used in this field research as well as its content is protected by Intellectual Property legislation in accordance with the provisions of Law 2121/1993 on Intellectual Property in Greece, as in force. Furthermore, since the questionnaire collects and processes personal data of the participants, the provisions of the General Data Protection Regulation (GDPR, Regulation (EU) 2016/679) apply. Compliance with these provisions is a basic requirement for ensuring the ethical validity and legal compliance of the research, safeguarding the rights and privacy of the participants [26].

The questionnaire was distributed to executives and employees of Greek companies operating in the wood and furniture sector. The research sample used in this study was collected through feasibility sampling with a meticulous focus on individuals who work or own businesses in the wood-furniture category and are based within Greek territory.

Table 1: Questions of the Second Part of the Questionnaire. All questions follow the 5-point Likert scale

SN	Question
1	The company implements policies aimed at reducing energy
2	The company implements a waste separation program during the production process
3	The company uses green chemistry products
4	The company purchases products from green suppliers (local)
5	The environmental awareness of employees is a key priority of the company
6	Continuous environmental awareness is a mission of the company
7	Environmental issues, such as energy and water consumption, are a priority of the company
8	The company's employees receive financial rewards for their performance in environmental management issues
9	The company evaluates the environmental performance of its employees
9	The company evaluates the contribution of an employee to improving the environmental management
10	The company sets environmental goals that the employee must achieve
11	In the company, environmental education is considered a significant investment
12	Environmental education is a priority for the company compared to other types of education
13	The company provides continuous environmental education through various programs
14	Environmental education is a priority
15	Environmental education is continuous
16	The company records individual environmental performance results
17	The company evaluates the contribution of employees to the environment
18	The company sets clear and specific environmental goals for each employee
19	The company provides financial rewards to employees for good environmental performance
20	Employees who contribute to environmental management receive moral reward/recognition
21	How familiar are you with the term Green

In the data collection phase, participants' responses were gathered, coded into an editable format for subsequent statistical analysis and the reliability of the sample was assessed using Cronbach's Alpha. [27].

The statistical analysis presented in this paper includes descriptive statistical analysis of demographic data and further quantitative analysis of statements related to environmental culture in relation to demographic data. The quantitative non-parametric statistical analysis was based on the theoretical grouping of the questionnaire statements into six factors, which represent distinct dimensions of environmental strategy and management at the organizational level. These factors were constructed to minimize measurement error arising from the isolation of individual items and to enhance the construct validity of the instrument.By following this particular factorization method, it was ensured that the analyses were based on conceptually coherent indicators, which more reliably capture the concepts under study. Then, crossovers and the Chi-Square test of independence were used to investigate the relationships between the factors and the demographic characteristics of the participants [28]. This test was considered appropriate, as the variables are categorical and ordinal, and the focus was on identifying statistically significant correlations. Furthermore, the presentation of the effect size through the V index provided a more comprehensive picture, allowing for the assessment not only of the existence of a relationship but also its intensity, which is particularly useful in cases of heterogeneous or multidimensional distributions.

At the same time, to compare the values of the factors between multiple independent groups, the non-parametric Kruskal-Wallis H test was applied [29]. The choice of this method is justified by the nature of the data, which come from ordinal scales and do not meet the conditions of normality and homoscedasticity required for the application of parametric tests. In this way, it was ensured that the conclusions obtained were not affected by violations of the statistical assumptions, while simultaneously capturing the real differentiation among the groups. Overall, the methodological approach integrates both descriptive and inferential techniques, allowing for the identification of basic trends and variations in the data, as well as the examination of relationships and group differences to support scientifically grounded conclusions.

Finally, the process of formulating conclusions was based on the systematic synthesis of findings from the individual stages of statistical analysis. Initially, descriptive measurements were utilized to highlight the main trends and deviations in the responses, while conceptual grouping into factors allowed for the depiction of complex concepts with greater clarity. Subsequently, correlation tests and comparisons between groups provided the opportunity to test hypotheses regarding the relationships and differences observed in the sample. The interpretation of the results was based on both statistical significance and the intensity of the correlations avoiding a unidimensional approach to the data. Through this specific process, quantitative evidence was combined with theoretical documentation making it possible to draw conclusions not only at a descriptive, but also at an interpretive level, thereby ensuring the validity and scientific reliability of this work.

Results

This section presents the basic descriptive elements that outline the profile of the sample and capture the general trends in the responses followed by the results that emerged from grouping individual statements into theoretically substantiated factors. The findings from the correlation tests and comparisons across various socio-demographic and professional groups are presented to identify potential differences and behavioral patterns..

The statistical sample (N = 149) used in this study comprises the responses of professionals from small and medium-sized enterprises in the wood and furniture processing sector,with a maximum of 50 employees. These enterprises are distributed in various geographical regions of Greece, with a greater concentration in Attica, Mainland Greece and Eastern Macedonia-Thrace. Regarding demographic characteristics (Figure 2), the majority of participants are men (59.7%, N = 89), compared to 40.3% women (N = 60), highlighting a clear gender imbalance that appears to reflect the specificities of this sector. The age distribution shows a predominance of the 46-55 year old group (40.9%), followed by the 36-45 year old group (22.8%). At the same time, smaller percentages correspond to younger participants (up to 35 years, 12.8%) and older participants (over 66 years, 14.1%). In addition, a high level of professional experience is observed, with 38.9% having 16-20 years of total experience in the specific sector and 46.3% having worked in the same company for a similar period indicating stability and commitment in the workplace.

It is also noteworthy to mention that the educational level of the participants is high (Figure 2), as 40.9% hold a university or technological degree and 24.8% a postgraduate or doctoral degree. On the contrary, 24.2% have secondary education, while only 10.1% remained at the level of compulsory schooling. In terms of sector of activity, furniture companies are represented at a rate of 59.7%, compared to 40.3% of wood companies (Figure 2). In contrast, in terms of job position, employees constitute 40.9%, owners 31.5% and senior executives 13.4%, with smaller percentages corresponding to managers and supervisors (Figure2).

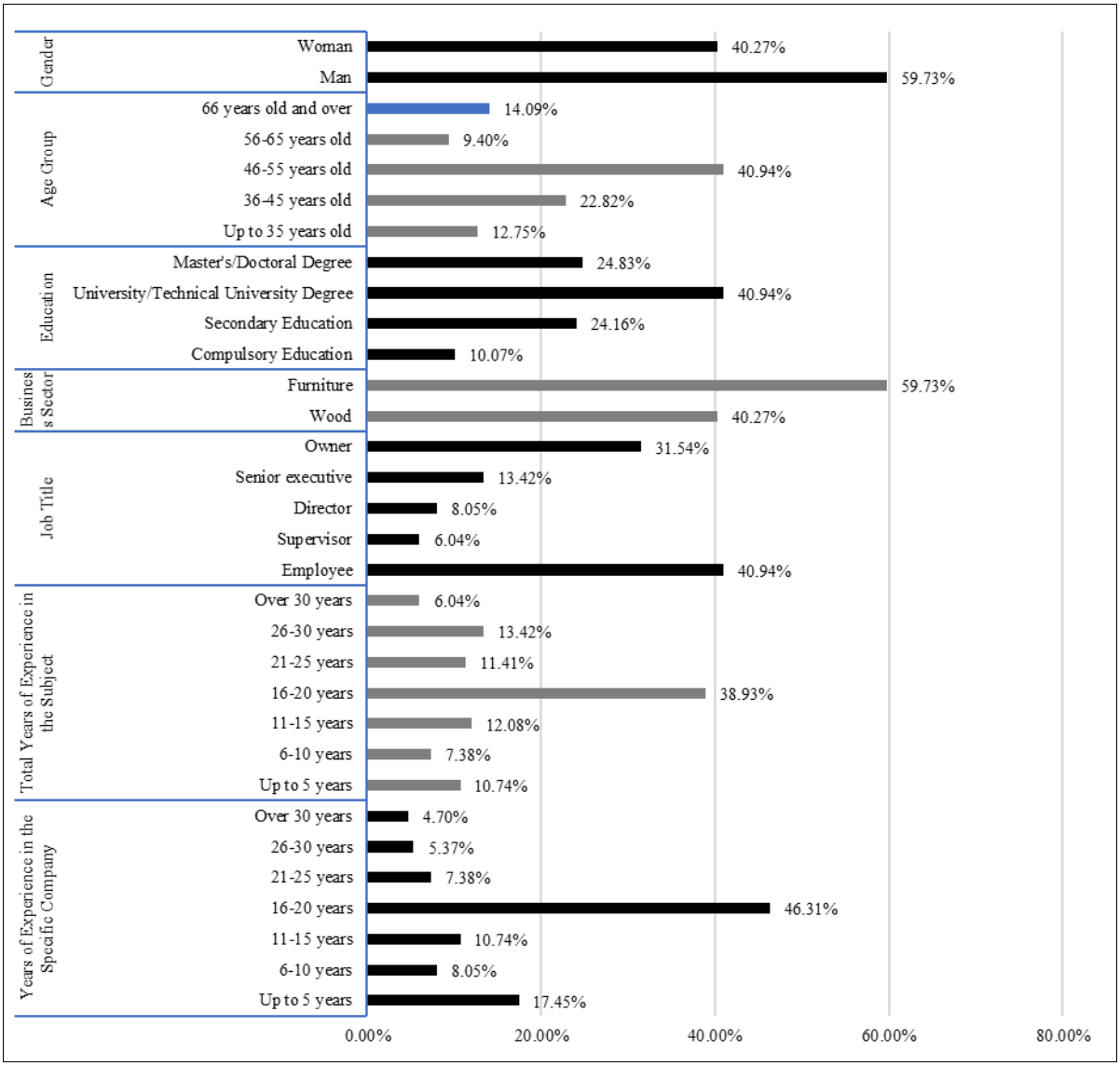

Fig 2: Frequency Chart of Demographics of Survey Participants

As reported, the data related to the answers to the questions/statements on the Likert scale of the questionnaire present interesting trends (Table 2). Participants express high agreement with practices related to reducing energy consumption (Average = 4.36, SD = 0.77) and waste management (Average = 3.09, SD = 0.85). At the same time, lower values are observed in more specialized practices, such as the use of green chemicals (Average = 2.79) and the selection of green suppliers (Average = 2.90). At the same time, the environmental dimension is recognized as a mission (Average = 3.93) and a priority (Average = 4.31) of businesses. However, the emphasis on environmental awareness among employees appears to be more limited (Average = 3.18). Reward and evaluation mechanisms register moderate values, with financial rewards (Average=3.03) and environmental goals (Average=3.25) falling short, while ethical recognition shows slightly higher acceptance (3.19). In the education sector, the indices range from 2.66 (priority of environmental education over others) to 3.46 (continuous education), with relatively high standard deviations (0.8-1.2), indicating differentiated attitudes. Familiarity with the term "Green" is considered moderate (Average=2.39 on a scale of 1-4, median=3), with the prevailing response being "A little", indicating limited knowledge of green concepts.

Table 2: Descriptive Statistics of the Questions/Statements of the Questionnaire

Question	Min	Max	Mean	Std. Error	Std. Deviation
The company implements policies aimed at reducing energy	3	5	4.36	0.06	0.77
The company implements a waste separation program during the production process	2	5	3.89	0.07	0.85
The company uses green chemistry products	1	5	2.79	0.09	1.04
The company purchases products from green suppliers (local)	1	5	2.90	0.07	0.89
The environmental awareness of employees is a key priority of the company	1	5	3.18	0.07	0.90
Continuous environmental awareness is a mission of the company	1	5	3.93	0.09	1.11
Environmental issues, such as energy and water consumption, are a priority of the company	2	5	4.31	0.07	0.80
The company's employees receive financial rewards for their performance in environmental management issues	1	5	3.03	0.08	1.00
The company evaluates the environmental performance of its employees	1	5	3.00	0.09	1.10
The company evaluates the contribution of an employee to improving the environmental management	1	4	2.90	0.09	1.14
The company sets environmental goals that the employee must achieve	1	5	3.25	0.09	1.10

In the company, environmental education is considered a significant investment	1	5	3.34	0.10	1.21
Environmental education is a priority for the company compared to other types of education	1	5	2.66	0.10	1.25
The company provides continuous environmental education through various programs	2	5	3.46	0.09	1.08
Environmental education is a priority	2	5	3.05	0.07	0.87
Environmental education is continuous	2	5	3.20	0.08	0.92
The company records individual environmental performance results	2	5	2.68	0.07	0.82
The company evaluates the contribution of employees to the environment	2	4	3.16	0.05	0.62
The company sets clear and specific environmental goals for each employee	1	5	2.96	0.09	1.11
The company provides financial rewards to employees for good environmental performance	2	4	2.83	0.06	0.69
Employees who contribute to environmental management receive moral reward/recognition	2	5	3.19	0.07	0.84
How familiar are you with the term *Green*	1	4	2.39	0.07	0.90

Subsequent to the methodological procedures, to enhance conceptual clarity and psychometric validity, individual questionnaire items were grouped into specific factors.This particular grouping was based on the theoretical foundation of each question and its conceptual relevance to distinct dimensions of environmental management. Furthermore, this particular method reduced the possibility of bias from individual questions, while simultaneously strengthening the internal consistency and construct validity of the control hypotheses in subsequent statistical analysis. The specific factors (Table 3) that emerged reflect multidimensional aspects of the organizational environmental strategy:

- **Environmental Policies & Practices**

It concerns the institutionalized procedures and practices

- **Environmental Awareness & Strategy**

It is linked to strategic commitment and employee awareness

- **Performance Evaluation & Goals**

Records assessment and goal setting at an individual level

- **Rewards and Recognition**

Examines incentives and rewards for environmental performance

- **Environmental Education**

It reflects education and continuous training

- **Familiarity with the term "Green"**

Expresses familiarity with modern environmental concepts

The formation of these specific factors facilitates a reliable and comprehensive statistical analysis, reducing measurement error and enhancing the generalizability of the findings.

Table 3: Grouping Questions by Factor

Factor	Question
Environmental Policies & Practices	The company implements policies aimed at reducing energy
	The company implements a waste separation program during the production process
	The company uses green chemistry products
	The company purchases products from green suppliers (local)
Environmental Awareness & Strategy	The environmental awareness of employees is a key priority of the company
	Continuous environmental awareness is a mission of the company
	Environmental issues, such as energy and water consumption, are a priority of the company
Performance Evaluation & Goals	The company evaluates the environmental performance of its employees
	The company evaluates the contribution of an employee to improving the environmental management
	The company sets environmental goals that the employee must achieve
	The company records individual environmental performance results
	The company evaluates the contribution of employees to the environment
	The company sets clear and specific environmental goals for each employee
Rewards and Recognition	The company's employees receive financial rewards for their performance in environmental management issues
	The company provides financial rewards to employees for good environmental performance
	Employees who contribute to environmental management receive moral reward/recognition
Environmental Education	In the company, environmental education is considered a significant investment
	Environmental education is a priority for the company compared to other types of education
	The company provides continuous environmental education through various programs
	Environmental education is a priority
	Environmental education is continuous
Familiarity with the term "Green"	How familiar are you with the term Green

After the factors presented in Table 3 were established, a series of statistical analyses was conducted to evaluate the reliability, correlations, and variations among the identified factors in relation to the demographic characteristics of the sample. Initially, Cronbach's Alpha was employed to assess the internal consistency of the factors, thereby ensuring the reliability of the measurement scales. Subsequently, Crosstabs and Chi-Square tests were applied to examine the associations between the factors and demographic variables, evaluating the statistical significance of these relationships. Finally, given that the factor values did not satisfy normality assumptions and were measured on ordinal scales, the non-parametric Kruskal-Wallis H test was utilized to explore potential differences in participants' attitudes and perceptions based on their demographic characteristics. This comprehensive methodological approach facilitated a multidimensional understanding of environmental trends and provided robust statistical support for the study's findings.

Cronbach's Alpha (Table 4) for the entire scale was 0.596, while its standardized version showed a slightly higher value (0.621). These values are indications of acceptable internal consistency, especially in exploratory contexts, where values close to 0.6 are considered sufficient for the analysis of multidimensional concepts.

Table 4: Cronbach's Alpha Test

Section	Statistic	Value	Notes
Case Processing Summary	Valid Cases (N)	149	100%
	Excluded Cases[a] (N)	0	0%
	Total Cases (N)	149	100%
Reliability Statistics	Cronbach's Alpha	0.596	6 items
	Cronbach's Alpha (Standardized Items)	0.621	6 items
	Number of Items	6	-
Item Statistics			
	Environmental Policies & Practices	Mean = 36.510	SD = 0.687
	Environmental Awareness & Strategy	Mean = 36.846	SD = 0.727
	Performance Evaluation & Goals	Mean = 31.812	SD = 0.637
	Rewards and Recognition	Mean = 31.007	SD = 0.695
	Environmental Education	Mean = 31.745	SD = 0.665
	Familiarity with the term “Green”	Mean = 23.893	SD = 0.898

According to Table 5, which presents the inter-item correlation matrix among the six factors, the correlations are moderate for some factors, indicating conceptual relevance without any problematic overlap.

Specifically, the Environmental Education factor shows the highest positive correlations, both with the Performance Evaluation & Goals factor (r = 0.515) and with the Rewards and Recognition factor (r = 0.459), which emphasizes that investment in educational actions is closely linked to goal setting and rewarding environmental performance. Also, the Performance Evaluation & Goals factor is significantly correlated with Rewards and Recognition (r = 0.462), confirming their functional interdependence.

In contrast, Familiarity with the term “Green” factor shows weak to zero correlations with several factors (e.g., r = -0.030 with Environmental Policies & Practices, r = 0.034 with Rewards and Recognition), indicating its independence as a factor. Finally, the Environmental Awareness & Strategy factor exhibits a positive, yet moderate, relationship with the Environmental Policies & Practices factor (r = 0.319) and the Environmental Education factor (r = 0.240), which reinforces the notion that strategic awareness is embedded in political and educational practices.

Following the statistical analysis, the intersections between the factors and participants’ demographic characteristics were examined through statistical controls. Within this framework, frequency distributions allowed for the identification of trends and potential differences in environmental attitudes.

More specifically, in terms of gender, the responses are distributed relatively evenly, with the majority of both men and women choosing the categories "Agree" or "Neither agree nor disagree" on most factors.

Table 5: Inter-Item Correlation Matrix

	Environmental Policies & Practices	**Environmental Awareness & Strategy**	**Performance Evaluation & Goals**	**Rewards and Recognition**	**Environmental Education**	**Familiarity with the term “Green”**
Environmental Policies & Practices	1000	0.319	0.253	0.272	0.312	-0.03
Environmental Awareness & Strategy	0.319	1000	-0.051	-0.057	0.24	0.158
Performance Evaluation & Goals	0.253	-0.051	1000	0.462	0.515	0.077
Rewards and Recognition	0.272	-0.057	0.462	1000	0.459	0.034
Environmental Education	0.312	0.24	0.515	0.459	1000	0.259
Familiarity with the term “Green”	-0.03	0.158	0.077	0.034	0.259	1000

A similar but opposite picture is observed in the familiarity with the term “Green”, where most participants, regardless of gender, stated “A little” or “Very little”.

On the contrary, in the case of age, more pronounced differences are observed.

Younger age groups (up to 35 years old) show higher agreement on issues such as environmental strategy and education,while older ages (46-55 years old and above) tend to concentrate on intermediate or neutral answers, indicating possible generational differences.

In relation to educational level, participants with university or postgraduate studies are more likely to declare agreement with the existence of environmental policies, strategies and academic practices, compared to those with compulsory or secondary education. This finding is consistent with the hypothesis that education is associated with higher environmental awareness.

Regarding the sector (wood or furniture), mixed trends are recorded, with employees in the furniture sector showing higher rates of agreement on some indicators. However, the differences are not substantial for all variables.

Job position emerges as a differentiating characteristic, as senior executives and owners show a significantly higher level of agreement on environmental strategy and objectives. At the same time, ordinary employees tend to respond neutrally. This observation suggests that hierarchical position influences perception and attitude towards environmental issues.

Regarding years of experience (both generally and within the company), a clear gradient is observed: participants with

more years of experience show higher agreement on environmental policy, strategy and training issues, while those with less experience tend towards neutral or less positive responses. This reinforces the hypothesis that professional experience enhances ecological awareness and acceptance of relevant practices.

Following the factor formation, statistical analysis using the Chi-Square test was then conducted to determine the relationship between demographic characteristics and the factors emerging from grouping the questionnaire's questions and statements.

Starting from gender, the results did not demonstrate any statistically significant correlation with the variables examined (p=0.140-0.743), while the Cramer's V values (0.063-0.141) were low. This suggests that in the research sample environmental attitudes do not differ substantially between men and women.

In contrast, age group revealed significant relationships in three areas: environmental policies and practices (χ^2=17.766, p=0.038, V=0.194), rewards (χ^2=22.955, p=0.011, V=0.221), and education (χ^2=20.833, p=0.022, V=0.204). Younger age groups showed greater variation in responses, while older age groups tended towards neutral or positive attitudes with the strength of the associations being moderate. Educational level emerged as a particularly decisive characteristic with statistically significant associations with all factors. In particular, the correlations were stronger for awareness (χ^2=38.216, p<0.001, V=0.293) and education (χ^2=32.197, p=0.001, V=0.268). At the same time, a clear trend of more positive attitudes was observed among participants with higher educational qualifications, especially those with postgraduate degrees.

The industry sector (wood vs. furniture) showed significant differences in environmental policies (χ^2=18.783, p<0.001, V=0.355) and education (χ^2=10.138, p=0.017, V=0.261), with furniture companies exhibiting higher levels of agreement. For the remaining factors, the differences were not statistically significant.

Furthermore, job position proved to be decisive, as it showed significant correlations with all factors (p<0.05) with moderate to strong power (V=0.227-0.332). Owners and senior executives tend to adopt more positive attitudes compared to employees.

Years of experience in the industry showed extensive statistically significant relationships with all factors (p<0.01). The correlations were strong, especially for evaluation (χ^2=51.047, p<0.001, V=0.414) and rewards (χ^2=47.013, p<0.001, V=0.397). Furthermore, it was observed that individuals with more years of experience tend to hold more neutral attitudes, while those with less experience express a greater variety of opinions.

Correspondingly, years of service in the same company were significantly associated with all factors (p<0.05), with particularly high correlation values, e.g., in evaluation (χ^2=74.105, p<0.001, V=0.499). Generally, longer years of service were associated with more positive attitudes toward environmental policies and practices.

According to the Kruskal-Walli's test, the analysis did not reveal statistically significant differences in any of the factors, with H values ranging from 0.015 (Environmental Education, df=1, p=0.904) to 2.697 (Performance Evaluation & Goals, df=1, p=0.101). This suggests that environmental attitudes do not differ substantially by gender in the sample under consideration.

On the contrary, age group was an essential differentiating characteristic, as statistically significant differences were identified in four of the six variables: Environmental Awareness & Strategy (H=27.098, df=4, p<0.001), Performance Evaluation & Goals (H=15.594, df=4, p=0.004), Environmental Education (H=12.708, df=4, p=0.013) and Familiarity with the term "Green" (H=14.921, df=4, p=0.005). On the contrary, no significant differences were observed in Environmental Policies & Practices (H=3.117, df=4, p=0.538) and Rewards and Recognition (H=3.899, df=4, p=0.420). These results suggest that age selectively influences specific domains of environmental attitudes, possibly due to differences in generational exposure to environmental issues.

Educational level emerged as one of the strongest predictors, with significant differences in four factors: Environmental Policies & Practices (H=8.917, df=3, p=0.030), Performance Evaluation & Goals (H=13.171, df=3, p=0.004), Environmental Education (H=8.712, df=3, p=0.033) and Familiarity with the term "Green" (H=14.168, df=3, p=0.003). In contrast, no significant differences were recorded in Environmental Awareness & Strategy (H=5.379, df=3, p=0.251) and Rewards and Recognition (H=7.834, df=3, p=0.098). This particular differentiation confirms that a higher educational level is associated with enhanced environmental awareness and practice, possibly due to greater theoretical training and exposure to applied knowledge.

The effect of the sector proved to be limited, with statistically significant differences being identified only in Environmental Awareness & Strategy (H=4.135, df=1, p=0.042) and Environmental Education (H=6.565, df=1, p=0.010).

No significant differences were found in the remaining factors; specifically, the industry sector (wood vs. furniture) selectively affects specific sectors, possibly due to differences in operational requirements and strategic fit. Job position exhibits significant differences across four factors. Environmental Policies & Practices (H=27.303, df=4, p<0.001), Performance Evaluation & Goals (H=21.618, df=4, p< 0.001), Environmental Education (H=19.290, df=4, p=0.001) and Familiarity with the term "Green" (H=15.374, df=4, p=0.004). Conversely, no statistically significant differences were observed for Environmental Awareness & Strategy (H = 5.379, df = 4, p = 0.251) or for Rewards and Recognition (H = 7.834, df = 4, p = 0.098). These findings suggest that hierarchical position substantially influences environmental attitudes, likely reflecting variations in levels of responsibility and involvement in strategic decision-making

Total professional experience in the industry was associated with extensive differentiation, as statistically significant differences were identified in five factors: Environmental Awareness & Strategy (H=37.234, df=6, p<0.001), Performance Evaluation & Goals (H=28.502, df=6, p<0.001), Rewards and Recognition (H=21.626, df=6, p=0.001), Environmental Education (H=28.544, df=6, p<0.001) and Familiarity with the term "Green" (H=20.383, df=6, p=0.002). The only non-significant differentiation was recorded in Environmental Policies & Practices (H=7.531, df=6, p=0.275). This fact highlights the decisive role of professional experience in shaping attitudes with nonlinear patterns of influence. Finally, years of experience in the current company present significant differences in all

factors: Environmental Policies & Practices (H=15.954, df=6, p=0.014), Environmental Awareness & Strategy (H=30.339, df=6, p<0.001), Performance Evaluation & Goals (H=42.704, df=6, p<0.001), Rewards and Recognition (H=29.625, df=6, p<0.001), Environmental Education (H=40.144, df=6, p<0.001) and Familiarity with the term "Green" (H=14.098, df=6, p=0.029). This finding supports the hypothesis that long-term employment within the same organization fosters environmental awareness and the adoption of relevant practices.

In general, small and medium-sized enterprises in the wood and furniture sector in Greece recognize the environmental dimension as an essential factor in their operation, focusing mainly on basic practices such as energy saving and waste management. However, more specialized forms of environmental management such as the use of green chemicals or the selection of ecologically responsible suppliers appear to be limited, which reflects the challenges of implementing innovative strategies in this sector.

The results of the statistical analysis also showed that the socio-demographic characteristics of the participants decisively influence their attitudes and perceptions. Higher educational level, younger age, professional experience and higher hierarchical position are associated with more positive acceptance of environmental strategies and practices. On the contrary, familiarity with the term "Green" remained relatively low, which highlights the need for further dissemination of knowledge and information.

Environmental training is of particular importance, as it is directly linked to performance evaluation and reward systems, thereby strengthening organizational commitment and acceptance of relevant policies. A long-term stay in the industry or within the same company further strengthens the positive attitude suggesting that experience plays a role in cultivating environmental awareness.

In conclusion, the statistical analysis demonstrates that, although companies have taken steps towards adopting environmental policies, the full integration of a "green culture" requires targeted training actions, strategic employee awareness and the development of effective reward mechanisms. Strengthening these dimensions can serve as a lever for more coherent and sustainable business development in the industry.

Conclusion

This paper focuses on the study of Green Human Resource Management in the Greek wood and furniture industry, a sector characterized by direct dependence on natural resources and high environmental sensitivity. The extensive literature review highlights the theoretical links between green management, sustainable development, innovation and corporate social responsibility as well as the critical role of personnel functions—selection and recruitment, training, evaluation,and motivation—when embedded within an environmental context. Green Human Resource Management thus emerges as a strategic mechanism for shaping organizational culture, capable of linking social and ecological responsibility with business competitiveness.

The empirical analysis presented in this article was based on a research sample of 149 employees and executives of small and medium-sized enterprises in the industry, using a questionnaire adapted from an international standard. The results of the statistical analysis revealed significant trends. Specifically, participants express high agreement with basic practices such as energy conservation and waste management, but limited acceptance of more specialized measures such as the use of green chemicals or cooperation with ecological suppliers. Environmental education is recognized as a critical dimension strongly linked to evaluation and rewards, which underscores its importance as a catalyst for cultivating an environmental culture. Furthermore, statistical analysis revealed that age, educational level, professional experience and hierarchical position substantially differentiate the attitudes of participants. Younger and more qualified employees tend to exhibit higher awareness, while owners and senior executives tend to adopt more positive attitudes compared to ordinary employees. On the contrary, familiarity with the term "Green" remains moderate, highlighting the deficit in knowledge dissemination and information in the sector.

Based on the above, the study concludes that, although companies in the sector have incorporated certain basic practices, the full development of a coherent "green culture" requires targeted strategies. It is proposed to institutionalize systematic environmental training programs for all staff levels to introduce standardized environmental evaluation indicators linked to target setting and reward systems and to strengthen strategic awareness through actions that actively involve employees. Additionally, it is necessary to enhance information mechanisms so that familiarity with the basic concepts of sustainable development becomes more widespread. For small and medium-sized enterprises, which constitute the majority of the sector, these policies should be adapted to their organizational capabilities with an emphasis on low-cost, but high-performance operational solutions.

In conclusion, the paper demonstrates that Green Human Resource Management in the Greek wood and furniture industry is in a stage of gradual adoption with significant potential for further development. The adoption of targeted training, evaluation and rewards strategies can act as a lever for transition towards a more sustainable and competitive business model, enhancing both environmental responsibility and the long-term resilience of the industry.

References

1. Bhatia M, Jain A. Green Marketing: A Study of Consumer Perception and Preferences in India. *Electron Green J*. 2013;1(36):1-15. DOI: 10.5070/G313618392.
2. Tang G, Chen Y, Jiang Y, Paillé P, Jia J. Green Human Resource Management Practices: Scale Development and Validity. *Asia Pac J Hum Resour*. 2018;56(1):31-55. DOI: 10.1111/1744-7941.12147.
3. Renwick DWS, Redman T, Maguire S. Green Human Resource Management: A Review and Research Agenda. *Int J Manag Rev*. 2013;15(1):1-14. DOI: 10.1111/j.1468-2370.2011.00328.x.
4. Zibarras LD, Coan P. HRM Practices used to Promote Pro-environmental Behavior: a UK Survey. *Int J Hum Resour Manag*. 2015;26(16):2121-2142. DOI: 10.1080/09585192.2014.972429.
5. Dumont J, Shen J, Deng X. Effects of Green HRM Practices on Employee Workplace Green Behavior: The Role of Psychological Green Climate and Employee Green Values. *Hum Resour Manage*. 2017;56(4):613-627. DOI: 10.1002/hrm.21792.
6. Rosolen T, Maclennan MLF. Strategic human resource management and corporate social responsibility:

Evidence from Emerging Markets. *Rev Eletrônica Neg Int Internext*. 2016;11(2):66-80.
7. Hossari H, Elfahli K. Green Human Resource Management: A Systematic Literature Review. *Rev Manag Cult*. 2022;(8):75-107. DOI: 10.48430/IMIST.PRSM/remac-n8.35741.
8. Jabbour CJC, Santos FCA. The Central Role of Human Resource Management in the Search for Sustainable Organizations. *Int J Hum Resour Manag*. 2008;19(12):2133-2154. DOI: 10.1080/09585190802479389.
9. Renwick DWS, Redman T, Maguire S. Green Human Resource Management: A Review and Research Agenda. *Int J Manag Rev*. 2013;15(1):1-14. DOI: 10.1111/j.1468-2370.2011.00328.x.
10. Dey PK, Malesios C, Chowdhury S, Saha K, Budhwar P, De D. Adoption of Circular Economy Practices in Small and Medium-sized Enterprises: Evidence from Europe. *Int J Prod Econ*. 2022;248:108496. DOI: 10.1016/j.ijpe.2022.108496.
11. Karagouni G, Tsakanikas A. Knowledge-Intensive Strategies In Low-Tech Sectors During The Crisis: The Case Of The Greek Wood And Furniture Sector. In: *6th Annual EuroMed Conference of the EuroMed Academy of Business*; 2012 Oct 3-4; Athens, Greece. Athens: EuroMed Press; 2012. p. 1126-1147. Accessed: Oct. 04, 2025. Available from: http://teilar.gr/dbData/Dimosieyseis/knowledge%20intensive%20strategies%20in%20low%20tech%20sectors_karagouni.pdf
12. Ali S, Ali AJ, Ashfaq K, Khalid J. Green Human Resource Management and Environmental Innovativeness. *Int J Sustain Dev Plan*. 2021;16(6):1001-1012. Accessed: Sept. 30, 2025. https://www.researchgate.net/profile/Jamshed-Khalid/publication/356525295_Green_Human_Resource_Management_and_Environmental_Innovativeness/links/619f5423c4ed925f9deaddf3/Green-Human-Resource-Management-and-Environmental-Innovativeness.pdf
13. Ali S. Effect Of Green Human Resource Management Practices On Firm Environmental Innovativeness In The Malaysian Furniture Industry [PhD Thesis]. [Malaysia]: Universiti Sains Malaysia; 2021. Accessed: Sept. 30, 2025. Available from: https://www.researchgate.net/profile/Sufaid-Ali/publication
14. Bovea MD, Vidal R. Materials Selection for Sustainable Product Design: A Case Study of Wood based Furniture Eco-design. *Mater Des*. 2004;25(2):111-116. DOI: 10.1016/j.matdes.2003.09.018.
15. Mirabella N, Castellani V, Sala S. LCA for Assessing Environmental Benefit of Eco-design Strategies and Forest Wood Short Supply Chain: A Furniture Case Study. *Int J Life Cycle Assess*. 2014;19(8):1536-1550. DOI: 10.1007/s11367-014-0757-7.
16. Coloma-Jiménez M, Akizu-Gardoki O, Lizundia E. Beyond Ecodesign, Internationalized Markets Enhance the Global Warming Potential in the Wood Furniture Sector. *J Clean Prod*. 2022;379:134795. DOI: 10.1016/j.jclepro.2022.134795.
17. Silas A. Introducing Circular Economy to the Furniture Industry [Master's thesis]. [Finland]: Haaga-Helia University of Applied Sciences; 2019. Accessed: Sept. 30, 2025. Available from: http://www.theseus.fi/handle/10024/172514
18. Susanty A, Tjahjono B, Sulistyani RE. An Investigation into Circular Economy Practices in the Traditional Wooden Furniture Industry. *Prod Plan Control*. 2020;31(16):1336-1348. DOI: 10.1080/09537287.2019.1707322.
19. Vanacore E, Rex E, Talalasova E, Stewart C, Wickman T. *Circular Economy & the Furniture industry: The state-of-the-art in the EU & Sweden*. Linköping: RISE Research Institutes of Sweden; 2021. Report No.: RISE Report 2021:123. Available from: https://urn.kb.se/resolve?urn=urn:nbn:se:ri:diva-54515
20. Gomes RM, Tibiriçá ACG, de Carvalho JMF, Nalon GH, Pedroti LG, de Paula MO. Wood Waste Quantification from the Furniture Industry in Ubá (Brazil) and its Reuse Prospects in Civil Construction. *Front Built Environ*. 2025;11:1623281. DOI: 10.3389/fbuil.2025.1623281.
21. Papadopoulos I, Trigkas M, Karagouni G, Papadopoulou A. The contagious effects of the economic crisis regarding wood and furniture sectors in Greece and Cyprus. *World Rev Entrep Manag Sustain Dev*. 2014;10(2/3):298-314. Accessed: Sept. 30, 2025. Available from: https://www.inderscienceonline.com/DOI/10.1504/WREMSD.2014.060391
22. Durrani N, Raziq A, Mahmood T, Khan MR. Barriers to Adaptation of Environmental Sustainability in SMEs: A Qualitative Study. *PLOS ONE*. 2024;19(5):e0298580. DOI: 10.1371/journal.pone.0298580.
23. Zihan W, Makhbul ZKM, Alam SS. Green Human Resource Management in Practice: Assessing the Impact of Readiness and Corporate Social Responsibility on Organizational Change. *Sustainability*. 2024;16(3):1153. DOI: 10.3390/su16031153.
24. Shafaei A, Nejati M, Mohd Yusoff Y. Green human resource management: A two-study investigation of antecedents and outcomes. *Int J Manpow*. 2020;41(7):1041-1060. DOI: 10.1108/IJM-08-2019-0406.
25. Jebb AT, Ng V, Tay L. A Review of Key Likert Scale Development Advances: 1995-2019. *Front Psychol*. 2021;12:637547. DOI: 10.3389/fpsyg.2021.637547.
26. Zaguir NA, de Magalhães GH, de Mesquita Spinola M. Challenges and Enablers for GDPR Compliance: Systematic Literature Review and Future Research Directions. *IEEE Access*. 2024;12:81608-81630. DOI: 10.1109/ACCESS.2024.3406724.
27. Bonett DG, Wright TA. Cronbach's alpha Reliability: Interval Estimation, Hypothesis Testing, and Sample Size Planning. *J Organ Behav*. 2015;36(1):3-15. DOI: 10.1002/job.1960.
28. Franke TM, Ho T, Christie CA. The Chi-Square Test: Often Used and More Often Misinterpreted. *Am J Eval*. 2012;33(3):448-458. DOI: 10.1177/1098214011426594.
29. McKight PE, Najab J. Kruskal-Wallis Test. In: *The Corsini Encyclopedia of Psychology*. Weiner IB, Craighead WE, editors. Hoboken, NJ: John Wiley & Sons; 2010. p. 1.