
THE IMPACT OF GREEN HUMAN RESOURCE MANAGEMENT PRACTICES ON SUSTAINABILITY: A STUDY IN THE CONSTRUCTION SECTOR*

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Abstract: *In today's world, environmental crises are emerging in many forms, including climate change, the increasing frequency of natural disasters, the spread of pandemics, and the rapid depletion of natural resources. These problems pose a threat not only to ecological balance but also to economic and social sustainability. In this context, it is becoming increasingly important for businesses to adopt environmentally conscious policies and to act in alignment with sustainable development goals. The success of corporate sustainability efforts depends not only on managerial strategies but also on aligning human resource policies with environmental values. At this point, the concept of Green Human Resource Management (GHRM) emerges as a significant tool for enhancing the environmental performance of organizations. The primary aim of this thesis is to examine the impact of GHRM practices implemented in private sector enterprises on sustainability. Additionally, the study aims to contribute to the academic literature in this area, which includes only a limited number of studies at both national and international levels. A quantitative research method, specifically the survey technique, was employed for data collection. Due to time and budget constraints, it was not possible to form a sample representing the entire country. For this reason, the scope of the study was limited to managers, human resources department employees, and staff working in sub-units of large-scale construction companies operating in the Marmara Region. The questionnaire forms were distributed to the participants via e-mail. The survey instrument consisted of three parts: the Green Human Resource Management Scale developed by Shah (2019) and adapted into Turkish by Öselmiş (2020), the Organizational Sustainability Scale developed by Sezen-Gültekin and Argon (2020), and demographic questions. The Green Human Resource Management scale comprises 26 items, while the Organizational Sustainability scale consists of 35 items. Both scales were designed using a 5-point Likert-type rating. A total of 306 valid responses were collected. The obtained data were analyzed using the SPSS 22.0 statistical software package. Descriptive statistics, independent samples t-test, anova test, levene's test, regression analysis, and correlation analysis were employed as statistical analysis methods.*

Keywords: *Green human resource management. Green human resource management practices. Dimensions of sustainability. Construction industry.*

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1. INTRODUCTION

In recent years, environmental sustainability has become a central element in businesses' efforts to gain a competitive advantage. Accordingly, Environmental Sustainability Management (ESM) has evolved from a function that merely manages the workforce to a strategic actor that raises awareness and motivates employees regarding environmental responsibilities. ESM contributes to the development of environmentally conscious behaviors among employees, leading to the formation of an organizational structure with high environmental performance. Furthermore, ESM is now considered not only an application aimed at improving environmental performance, but also a strategic management discipline that facilitates coping with environmental challenges encountered at the organizational level (Silvester et al., 2019). This approach, which forms the basis of next-generation strategic initiatives, offers businesses the opportunity to achieve both their environmental and competitive goals simultaneously.

The concept of sustainability, in its early stages, was considered a framework aiming to combine environmental policies with development strategies (Brundtland, 1987). This approach initially focused more on striking a balance between economic growth and environmental protection; therefore, the concept was long considered solely from an economic perspective. However, over time, this narrow perspective has given way to a more comprehensive and multidimensional understanding.

Today, sustainability is accepted as a holistic approach that considers not only economic but also social and environmental impacts in the long term (Jeong, 2015). At the organizational level, sustainability is no longer limited to maintaining profitability but has become a responsibility that includes establishing a dynamic and balanced relationship between people-centeredness, social well-being, and environmental sensitivity. In this context, the ability to balance the elements known as the “3Ps”—people, prosperity, and planet—is considered a key indicator of an organization's success in sustainability (Wals & Schwarzin, 2012).

In this study, Green Human Resources Management (GHRM) stands out as a strategic human resources approach for businesses to achieve their environmental sustainability goals. GHRM refers to the restructuring of fundamental human resources processes such as recruitment, performance management, employee training and development, and occupational health and safety with an awareness of environmental responsibility. This study aims to evaluate the impacts of green human resources practices on overall sustainability and to reveal how businesses in the construction sector implement these practices.

The construction sector stands out as a critical area in terms of environmental sustainability due to its intensive energy use, high levels of carbon emissions, and consumption of natural resources. Therefore, research specific to this sector will provide a clearer and more concrete opportunity to evaluate the contributions of green human resources practices to reducing environmental impacts and creating sustainable business practices.

The research aims to develop recommendations that can guide businesses' sustainability strategies and to contribute to the limited academic literature on the subject. In this context, the results obtained are expected to be guiding for both practitioners and academics.



2. THEORETICAL BASE OF THE STUDY

Today, sustainability has become a strategic necessity for the long-term success and competitiveness of businesses. The sustainability approach refers to addressing environmental protection and social responsibility in a balanced way, alongside economic growth. In this context, businesses need to adopt sustainability principles not only in their production and operational processes but also in their human resources policies. Human resources management plays a critical role in achieving sustainability goals because it is a fundamental function that shapes employee behavior. Accordingly, the concept of Human Resources Management (HRM) has emerged as a result of integrating the understanding of sustainability with human resources practices (Akma et al., 2024). HRM is a management approach that places environmental sensitivity at the center of human resources processes. HRM refers to the design of all human resources practices, such as recruitment and selection, training and development, performance evaluation, reward and compensation, occupational health and employee relations, in a way that is compatible with environmental goals. The main purpose of this approach is to increase the environmental performance of organizations and contribute to sustainability goals by encouraging employees to exhibit environmentally friendly behaviors. Demir Uslu and Kedikli (2025) emphasize that GHRM is not only a tool for improving environmental outcomes, but also has positive effects on organizational commitment, motivation, and corporate reputation.

When the theoretical foundations of GHRM are examined, it is seen that this approach can be explained especially with the Resource-Based View and Social Exchange Theory. According to the Resource-Based View, businesses must possess rare, valuable, and difficult-to-imitate resources to gain a sustainable competitive advantage. Human resources and green human resources practices that manage these resources constitute a strategic value for businesses. Thanks to GHRM practices, environmentally conscious and sustainability-oriented employee profiles are developed, and this contributes to the long-term performance of the business (Akma et al., 2024). In this context, GHRM refers to the entirety of human resources policies and practices that support environmental sustainability. It includes structuring HR functions such as recruitment, training, performance management, reward, occupational health, and employee engagement in a way that is compatible with environmental goals. From a Resource-Based perspective, employees who are environmentally conscious, equipped with environmental competencies, and have internalized a sustainability culture are a strategic and inimitable resource for businesses (Jiang et al., 2024).

Social Exchange Theory (SET) suggests that when organizations adopt environmentally sensitive practices, employees respond by acting with a sense of environmental responsibility. This reciprocal interaction supports the integration of green behaviors into the organizational culture. The impact of SET practices on sustainability becomes more pronounced, especially in sectors with high environmental impact. The construction sector is among the sectors with high environmental impact in terms of natural resource consumption, energy use, and waste production. Therefore, technical solutions alone are not sufficient for implementing sustainable construction practices; managerial approaches that center the human factor are also needed. In the construction sector, SET practices enable employees to gain environmental awareness, adopt sustainable practices, and comply with environmental standards in projects (Azlan & Tuan Hussain, 2025).

Organizations' green recruitment, environmentally friendly training programs, environmentally performance-based rewards, and practices that encourage employee participation are perceived by employees as indicators of organizational support. This perception, in line with the fundamental assumptions of Sustainable Development Behavior (SDT), leads employees to voluntarily exhibit environmentally conscious behaviors. Employees view the organization's environmental sensitivity as a shared value and reciprocate this value with environmentally friendly



attitudes and behaviors (Kara & Demir, 2024). One of the most important contributions of SDT practices to the social change process is increasing employees' emotional commitment to the organization. Individuals working in organizations with high environmental responsibility awareness exhibit organizational citizenship behaviors that are not limited to their job descriptions. These behaviors include voluntary activities such as offering suggestions for environmental improvement, contributing to resource conservation, and supporting environmentally friendly practices. According to SDT, such behaviors are a natural consequence of the principle of reciprocity (Özkan, 2024).

Current studies in the literature show that SDT practices have significant and positive effects on sustainability performance. Research for 2025 indicates that Sustainable Project Management (SPM) practices not only improve environmental performance but also significantly contribute to employee engagement, green work behaviors, and organizational sustainability (Discover Sustainability, 2025). It is particularly noted that employees develop environmentally conscious attitudes and behaviors through green training and development activities, and that these behaviors become sustainable through green performance evaluation and reward systems. Furthermore, it is stated that SPM practices indirectly contribute to sustainable development goals through mediating variables such as green creativity and environmental innovation (Discover Sustainability, 2025).

The limited number of current studies specifically in the construction sector also reveal that SPM practices support sustainable project management. Primantari (2025) states that SPM practices in sustainable construction projects improve environmental performance, optimize resource use, and positively impact project success. However, there are limited empirical studies in the literature that address the relationship between SPM and sustainability within the context of the construction sector. This situation allows this study to fill an important gap, both theoretically and practically. This study aims to provide a theoretical contribution to the literature by examining Sustainable Competitiveness (SC) practices within the framework of the Organizational Commitment to Quality (OCQ). According to OCQ, businesses can achieve sustainable competitive advantage by possessing valuable, rare, difficult-to-imitate, and irreplaceable resources and capabilities. In this context, SC practices are considered not only as managerial tools that increase environmental awareness, but also as a strategic organizational competency that improves the environmental capabilities of the business. Research findings reveal that SC practices positively affect the sustainability performance of the business by supporting employees' environmental awareness, green behaviors, and organizational commitment. This shows that SC can be considered as an abstract and holistic capability at the business level. Especially in sectors with high environmental impact, such as the construction sector, the institutionalization of SC practices is a critical resource that supports the environmental performance and long-term sustainability goals of firms. In this respect, the study strengthens the theoretical framework explaining the impact of SC practices on sustainability and firm performance by positioning these practices from an OCQ perspective. While GHRM is mostly addressed as an operational or normative approach in the literature, this research offers a unique contribution by evaluating GHRM as a strategic organizational capability that provides a competitive advantage. Consequently, GHRM stands out as a strategic tool in achieving sustainability goals. Adopting GHRM practices in areas with high environmental impact, such as the construction sector, contributes not only to improving environmental performance but also to strengthening organizational sustainability. This study aims to examine the impact of GHRM practices on sustainability in light of theoretical foundations, and to offer important implications for both the literature and practice.



3. METHODOLOGY

3.1. Aim and Importance of the Study

Today, businesses are evaluated not only by their economic performance but also by the extent to which they fulfill their environmental and social responsibilities. Globally increasing environmental problems, the rapid depletion of natural resources, climate change, and societal expectations are forcing businesses to develop sustainability-focused strategies. For businesses, sustainability is not only an approach to protecting the environment; it has become a strategic necessity for gaining a long-term competitive advantage, strengthening corporate reputation, complying with legal regulations, and meeting stakeholder expectations. For firms operating in sectors with high environmental impact, sustainability stands out as a fundamental element directly affecting the continuity and social legitimacy of the business. Human resources play a critical role in achieving the sustainability goals of businesses. In this context, Human Resources Management (HRM) refers to the entirety of human resources policies and practices that support environmental sustainability, encouraging employees to gain environmental awareness, exhibit environmentally friendly behaviors, and actively participate in sustainability strategies. The literature theoretically emphasizes that Human Resources Management (HRM) can support the environmental, social, and economic dimensions of organizational sustainability through practices such as green recruitment, green training, green reward and compensation, green occupational health and safety, green performance appraisal systems, and green employee relations. However, studies empirically examining the impact of HRM practices on sustainability are limited. A large portion of existing research remains at a conceptual level or focuses on different sectors; it is noteworthy that empirical studies are insufficient, particularly in sectors with high environmental impact and critical sustainability importance, such as the construction sector. This situation highlights the need to test the impact of HRM practices on sustainability with concrete data. In this context, the main objective of this research is to empirically examine the impact of HRM practices on sustainability in large-scale construction firms operating in the Marmara Region. Based on the findings, the study aims to fill a significant gap in the literature and to offer guiding suggestions to practitioners for developing sustainability-oriented human resources policies. In this respect, the research not only contributes to the academic literature but also makes significant contributions to the effective implementation of Reconstruction, Quality, and Environment practices and sustainability strategies in the construction sector.

3.2. Context of the Study

This research examines the impact of Reconstruction, Quality, and Environment (RQE) practices on sustainability within the context of construction sector businesses operating in Türkiye. Accurately defining the research context is crucial for interpreting the findings and evaluating their generalizability. Therefore, the research takes into account Türkiye's cultural characteristics and the structural and environmental dynamics of the construction sector.

3.2.1. Cultural Context in Türkiye

Türkiye, due to its cultural characteristics, has a social structure relatively closer to collectivist values, with a high power distance and a pronounced tendency to avoid uncertainty. These cultural characteristics directly affect the management approach in organizations, employee-manager relations, and the perception of human resources practices. In particular, the adoption of human resources policies by employees is closely related to organizational culture and national culture characteristics. In the Turkish context, managerial leadership, exemplary behavior, and the

attitude of top management are decisive in the process of employees adapting to organizational practices. This is critically important for the effectiveness of GHRM practices. Because the reflection of environmentally conscious practices on employee behavior is often shaped by the commitment and consistency of managers in this regard. Considering that environmental sustainability awareness is developing in organizations in Türkiye, the perception and internalization of GHRM practices by employees are influenced by cultural factors. Furthermore, although environmental awareness has increased in Türkiye in recent years, it cannot be said that this awareness has been sufficiently integrated into systematic human resources policies at the organizational level. This situation shows that GHRM practices are still in the development phase in the Turkish context. Therefore, this research conducted in Türkiye is important in terms of revealing how the R&D process is perceived within a cultural context and how it contributes to sustainability goals.

3.2.2. Construction Sector in Türkiye

The construction sector, while being one of the locomotive sectors of the Turkish economy, is also among the sectors with the highest environmental impact. Construction activities are critically important for sustainability in terms of environmental factors such as natural resource consumption, energy use, waste production, and carbon emissions. Therefore, widespread adoption of environmentally focused practices in the construction sector is crucial for achieving sustainable development goals in Türkiye. The construction sector in Türkiye has unique structural characteristics such as project-based work, the use of temporary labor, subcontracting, and labor-intensive requirements. These characteristics make the planning and implementation of human resources management practices challenging. Integrating environmentally focused human resources practices into the sector requires significant managerial effort in terms of continuity and systematicity. At this point, Human Resources Management (HRM) stands out as an important tool supporting environmental sustainability in the sector. In most businesses operating in the construction sector in Türkiye, sustainability practices are addressed primarily within the framework of technical and regulatory requirements. However, it is observed that human resources policies aimed at developing employees' environmental awareness are not sufficiently widespread. Practices such as green recruitment, green training and development programs, green performance appraisal and reward and compensation, green occupational health and safety, and green employee relations are implemented to a limited extent. This situation indicates that the human resources dimension is not sufficiently evaluated in improving the sustainability performance of the sector. This research aims to fill a significant gap at the sectoral level by examining the impact of Green Human Resources Management (GHRM) practices on sustainability within the construction sector in Türkiye. By considering both Türkiye's cultural characteristics and the structural dynamics of the construction sector, the study contributes to a more accurate interpretation of the findings and the development of practical implications.

3.3. Assumptions and Limitations

The assumptions of the research are as follows:

- It is assumed that participants answered the survey questions realistically and honestly.
- It is assumed that the participants' knowledge and awareness levels regarding GHRM practices and sustainability issues are sufficient to understand and evaluate the research questions.
- It is assumed that the validity and reliability of the scales have been ensured.
- It is assumed that the scales used in the research are appropriate to the organizational structure and sector characteristics of large-scale construction firms operating in the Marmara Region.



- It is assumed that the responses given by the participants accurately reflect the current GHRM practices and sustainability approaches of the institutions they work for.
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- It is assumed that the sample is representative of the construction sector.

The limitations of the research are as follows:

- Geographical limitation of the research; The research is limited to large-scale construction firms operating in the Marmara Region.
- Limitation on sample size: Data was collected from 306 participants in the study. While this sample size is sufficient for statistical analysis, studies with a larger sample size may yield different or more comprehensive results.
- Limitation on data collection method: Data was collected using a survey method. Since surveys are based on participants' subjective evaluations, their perceptions, attitudes, and personal assessments can influence the results. This is considered a factor that may limit the objectivity of the data obtained.
- Time limitation: Research data was collected within a specific time frame and in a single data collection process. Therefore, the study does not reflect the changes in GHRM practices and sustainability perceptions in organizations over time.
- Limitation on participant profile: The individuals participating in the study are limited to GHRM managers, managers, assistant managers, executives, and employees working in large-scale construction companies.
- Non-response bias: One of the limitations of this research is non-response bias. Due to employees who did not participate in the survey or who answered the questions incompletely, the findings reflect only the opinions of voluntary participants. This situation may limit the generalization of results to the population, especially in attitude-based variables such as GHRM practices and sustainability perception.
- Limitation regarding common methodology: The fact that the data in this research was collected through a single measurement instrument, from the same participants, and in a single time period may bring with it the risk of common method bias. However, the fact that a sufficient sample size was achieved within the scope of the research and that the validity and reliability analyses of the scales were performed are considered as factors that limit the impact of this risk.

3.4. Research Universe and Sample

The population of this research consists of managers, human resources department employees, directors, and employees in various sub-units working in large-scale construction companies operating in the Marmara Region, Türkiye. Marmara Region was chosen as the research population because, particularly with the decisive weight of Istanbul, large-scale companies constituting approximately one-third of the construction sector in Türkiye are clustered in this region, and sustainability practices are more widely observed here. Due to the intensity of construction activities, the geographically wide area of the population, the corporate confidentiality policies of the companies, and the difficulty of directly reaching all employees, it was not possible to reach the entire population. Therefore, convenience sampling, one of the non-probability sampling methods, was preferred in the research. Convenience sampling includes individuals that the researcher can reach and who voluntarily participate in the research, and is widely used in empirical studies in the social sciences, especially in organizational behavior and human resources management. This method allows for the efficient collection of data appropriate to the research objective within the



framework of time and cost constraints. A total of 306 valid questionnaires were obtained from the questionnaires sent to 400 people within the scope of the research. The sample size obtained is considered sufficient, taking into account the number of items in the measurement instruments used and the statistical analyses performed. Indeed, considering the general consensus that sample sizes in multivariate statistical analyses and regression analyses should be at least 5–10 times the number of items in the scale, the sample size achieved in this study is considered methodologically appropriate. Furthermore, the sample of 306 individuals meets the minimum sample size required for correlation and regression analyses and supports the statistical reliability of the findings. Accordingly, it can be said that the sample used in the research is sufficient and consistent with the research objective for analyzing the impact of GHRM practices on organizational sustainability.

3.5. Research Method

In this research, the Marmara Region and the construction sector were selected as a sample. This selection is based on both sectoral and regional justifications. The construction sector is considered one of the most critical sectors in terms of sustainability due to its high use of natural resources, intensive energy consumption, waste production, and environmental impacts. It also has strategic importance in terms of its job creation capacity, contribution to economic growth, and its impact on numerous sub-sectors. Because of these characteristics, it is believed that sustainability-oriented management approaches applied in the construction sector have more significant and measurable environmental and social impacts compared to other sectors. Marmara Region is the most active region in Turkey in terms of industry, trade, and employment, and hosts a significant number of large-scale construction firms. The region is one of the areas where construction activities are most intense, with urban transformation projects, infrastructure investments, and large-scale building projects. This makes the Marmara Region a suitable research area where sustainability practices and environmental pressures can be observed together. Furthermore, the high level of institutionalization of firms operating in the region increases the applicability and measurability of contemporary management practices such as Construction Management Approaches. In this context, including large-scale construction firms operating in the Marmara Region in the research allows for a more robust and generalizable examination of the impact of GHRM practices on sustainability. The selected sector and region provide a suitable sample for the research's purpose, theoretical framework, and empirical structure; enabling the findings to contribute to both academic literature and practical application. In this regard, the survey technique, a quantitative research method, was used as the data collection tool. This research was conducted on human resources managers and assistants, managers in different units, and employees working in large-scale construction firms operating in the Marmara Region. The participants included in the research consist of individuals who plan, implement, and are directly affected by GHRM practices. The research was not limited to senior managers; a significant portion of the participants consisted of employees in order to evaluate the impact of human resources policies implemented throughout the organization on sustainability from a more holistic perspective. In this respect, the research sample allows for the evaluation of the impact of GHRM practices on sustainability from both managerial and employee perspectives. As part of the research, survey forms were sent electronically via email to human resources managers, directors, assistant directors, sub-units, and employees working in large-scale construction companies operating in the Marmara Region. A total of 306 valid survey forms were obtained from the 400 individuals surveyed. The analyses were conducted using these complete and evaluable forms. The survey form used in the research consists of the Green Human Resources Management Scale developed by Shah (2019) and adapted into Turkish by Öselmiş (2020), the Organizational Sustainability Scale developed by Sezen-Gültekin and Argon (2020), and questions regarding the

demographic characteristics of the participants. The Green Human Resources Management Scale consists of 26 statements, and the Organizational Sustainability Scale consists of 35 statements; both scales are structured using a 5-point Likert scale. The collected data were analyzed using the SPSS 22.0 statistical package program. In the analysis process, descriptive statistics were applied to define the general characteristics of the sample, and regression and correlation analyses were used to examine the relationship between variables. The hypotheses developed in line with the main objective of the research are presented below:

H0: Green human resources management does not have a statistically significant effect on organizational sustainability. $h_0: \mu_1 > \mu_2$

H1: Green human resources management has a statistically significant effect on organizational sustainability. $h_1: \mu_1 > \mu_2$

3.6. Data Gathering Method

This research employed a quantitative data collection method. The study was conducted within the framework of a cross-sectional research design, and data were collected through a survey administered between May 2025 and September 2025. During this period, surveys were distributed electronically to participants, and data were collected in a single wave. No repeated measurements were taken from participants.

To reduce the potential bias caused by non-response bias, surveys were distributed electronically to a large number of participants to ensure a sufficient sample size. The 306 surveys obtained were found to be sufficient for statistical analysis, and the sample size met the minimum levels recommended in the literature. Accordingly, it was assessed that non-response bias did not significantly affect the research findings.

The survey form developed within the scope of this research aims to measure the impact of Green Human Resources Management (GHRM) practices on sustainability. The survey form consists of three sections and was adapted from scales proven valid in international literature. The first section of the survey includes demographic questions containing basic information about participants' age, gender, and education level. This section was created to determine the characteristics of the sample group and to allow for the examination of differences based on demographic variables in subsequent analyses. The second section of the survey, the Green Human Resources Management Scale developed by Shah (2019) and adapted into Turkish by Öselmiş (2020), is adapted from previously developed scales in the literature. The scale includes statements measuring HRM practices such as green job analysis and design, green personnel selection and placement processes, green training and development programs, green performance appraisal systems, green compensation and reward, green occupational health and safety practices, and green employee relations management. Participants' perceptions of these statements were evaluated using a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree). This structure made it possible to numerically measure employees' perceptions of HRM practices in their companies. The third section of the survey includes the Organizational Sustainability scale developed by Sezen-Gültekin and Argon (2020), which is used to assess the sustainability levels of organizations. This scale consists of statements covering economic, social, and environmental sustainability dimensions. Participants were asked to evaluate the performance of their organization in areas such as resource management, energy use, employee safety, social responsibility activities, and long-term economic resilience, again using a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree).

3.7. Validity and Reliability of the Scale



To evaluate the validity and reliability of the measurement tools used in the research, the distribution characteristics of the data were first examined. Through graphical analyses and Q-Q plots, it was observed that the distributions of the Green Human Resources Management (GHRM) and Organizational Sustainability (OS) variables were generally close to a normal curve. Considering the limited number of outliers and the high sample size ($n=306$), the distribution was found to be suitable for parametric analyses.

To ensure the applicability of the survey form, the relevant literature was reviewed, the scales were adapted into Turkish in line with expert opinions, and the statements were meticulously reviewed in terms of content. The Cronbach's Alpha reliability analysis applied to the collected data yielded a value of 0.992, confirming the internal consistency of the scales and strengthening the statistical reliability of the research. Furthermore, the findings from the validity and reliability analyses reveal that the scales used are both conceptually consistent and reliable in terms of measurement.

In this context, an Independent Samples T-Test was conducted to evaluate the effect of demographic variables on perceptions. T-test results revealed statistically significant differences in perceptions of GHRM and OS based on gender. Levene's Test was then applied, and it was determined that the variances were homogeneous in both main variables ($p > 0.05$). This result indicates that the comparative statistical methods (t-test and ANOVA) used in the study met the necessary prerequisites. To evaluate the consistency of the scales against demographic variables, One-Way ANOVA and Levene Test were applied according to education groups. According to the Levene test results examining the homogeneity of variances, $p < 0.05$ was found in both YIKY ($F = 4.675$; $p = 0.01$) and ÖS variables ($F = 3.773$; $p = 0.024$), thus determining that the variances were not homogeneous between the groups. Despite the variance differences, the ANOVA analyses showed no significant difference according to education level. For GHRM, $F = 1.328$; The values $p = 0.267$ and $F = 0.836$ for OS; $p = 0.434$ revealed that educational status did not have a statistically significant effect on perceptions. These results show that the scales produced similar evaluations even if the educational level changed, thus indicating that the measurements were consistent across demographic subgroups. In addition, One-Way ANOVA and Levene Test were applied to age groups to evaluate the consistency of the scales used in the research according to demographic variables. Levene test results showed that the variances were homogeneous for the Green Human Resources Management (GHRM) variable ($p > 0.05$), but the variances were not homogeneous for the OS variable ($p < 0.05$). Nevertheless, the ANOVA results provide important clues about whether the scales work similarly in different age groups. The One-Way ANOVA findings revealed that the perception of Green Human Resources Management (GHRM) differed significantly according to age ($F(4,301)=3.37$, $p < 0.05$). The Tukey HSD test showed that the perceptions of Organizational Sustainability (OS) among employees aged 26–35 were lower compared to the 36–45 and 56+ age groups. In contrast, it was determined that the perception of Organizational Sustainability (OS) did not show a significant difference according to age groups ($F(4,301)=0.826$, $p > 0.05$). These results show that the scales generally work consistently among age levels; only in the perception of OOS are there significant differences between certain age groups. However, the findings support the idea that the perception of sustainability is independent of the age variable, and therefore the scale has a stable structure in terms of demographics.

The strong and significant relationships obtained in the correlation analysis between the variables ($r = 0.811$, $R^2 = 0.657$, $p < 0.001$) support the statistical robustness of the measurements. However, the results of the multiple linear regression analysis revealed that the implementation of GHRM measures has a positive and significant effect on organizational sustainability ($\beta = 0.761$, $p < 0.001$; $OS = 1.116 + 0.761 \cdot GHRM$). The model's R^2 value of 65.7% indicates that the GHRM

variable explains a significant portion of the variance on OS. These findings confirm that the scales are not only reliable and valid, but also that GHRM is a strong predictor in explaining organizational sustainability.

3.8. Data Analysis

The analysis process of the quantitative data obtained in this research was planned in line with the research aims and hypotheses, and statistical methods were applied systematically. Before starting the analyses, the data set was examined in detail; it was checked for missing data, erroneous entries, or outliers. Necessary corrections were made to ensure the suitability of the data set for statistical analysis. Cronbach's Alpha coefficients were calculated to determine the reliability levels of the scales used in the research. Thus, the internal consistency of each variable was evaluated, and the reliability of the measurement instruments was confirmed. Then, descriptive statistics were calculated to reveal the general characteristics of the data, mean and standard deviation values were presented along with frequency and percentage distributions. These analyses contributed to determining the demographic characteristics of the sample and the general trends of the variables. To test the research hypotheses, an independent samples T-test was first applied to determine whether the participants' perceptions of GHRM and OS differed according to gender, and homogeneity of variance, one of the prerequisites of parametric tests to be used in intergroup comparisons, was evaluated with Levene's test. One-way and multi-way ANOVA analyses were conducted to determine whether there was a significant difference in perceptions of Green Human Resources Management (GHRM) and Sustainability based on participants' education and age. Correlation analysis was also performed to identify the relationships between the variables. The results of this analysis revealed the direction and strength of the relationship between Green Human Resources Management (GHRM) practices and sustainability. Furthermore, multiple linear regression analysis was applied to examine the impact of GHRM practices on sustainability. Basic statistical assumptions such as normality, homogeneity of variance, and multicollinearity were tested when constructing the regression model; the statistical suitability of the model was evaluated. All analyses conducted within the scope of the research were performed using the SPSS statistical package program. The findings are presented in tables, and interpretations are made in accordance with the research objective.

4. FINDINGS

This section presents the results of the statistical analysis of the data obtained from the employees participating in the research. First, Cronbach's Alpha coefficients were analyzed to determine the reliability levels of the scales used in the research. Then, a normality test was performed to evaluate the structural characteristics and distribution of the data set, and whether the variables showed a normal distribution was examined. In addition, descriptive and explanatory statistics (frequency, percentage, mean, and standard deviation values) were calculated to reveal the basic demographic characteristics of the sample. Furthermore, correlation analysis was applied to determine the direction and strength of the relationships between the variables, and multiple linear regression analysis was performed to examine the effects of Green Human Resources Management (GHRM) practices on organizational sustainability. The findings obtained were interpreted in line with the aims and hypotheses of the research and presented systematically through tables. This approach allows for a comprehensive evaluation of the research data with both descriptive and causal analyses.

The reliability analysis result for the Green Human Resources Management (GHRM) scale showed a Cronbach's Alpha coefficient of 0.992. This value indicates that the scale has an extremely high level of internal consistency. Accordingly, it can be stated that the use of the 26-item GHRM scale in this research is statistically highly appropriate and that the scale is a reliable measurement tool. Furthermore, the high degree of agreement between the items reveals that the scale consistently and stably reflects the concept it aims to measure. This supports the accuracy and validity of the findings. Therefore, analyses conducted with the GHRM scale are expected to produce scientifically strong and reliable results.

Table 1. Cronbach's alpha analysis (GHRM)

Scale	Cronbach's Alpa (α)	Items (N)	Reliability Level
Green Human Resources Management (GHRM)	0.992	26	Excellent

The reliability analysis of the Organizational Sustainability (OS) scale yielded a Cronbach's Alpha coefficient of 0.994. This value indicates that the scale has extremely high internal consistency. A Cronbach's Alpha coefficient above 0.70 is considered reliable, while values of 0.90 and above represent excellent reliability.

Table 2. Cronbach's alpha analysis (OS)

Scale	Cronbach's Alpa (α)	Items (N)	Reliability Level
Organizational Sustainability (OS)	0.994	35	Excellent

4.1. Normality Distribution

The Shapiro–Wilk and Kolmogorov–Smirnov normality tests statistically rejected the hypothesis of normal distribution. However, interpreting this result directly as a deviation from normal distribution would be misleading. This is because the research sample is quite large ($n = 306$), which leads to the normality tests being overly sensitive. In large samples, the tests can detect even the smallest deviations as statistically significant differences.

Table 3. Normality distribution

Variable	Kolmogorov- Smirnov (p)	Shapiro-Wilk (p)
Green Human Resources Management (GHRM)	0.000	0.000
Organizational Sustainability (OS)	0.000	0.000

Therefore, the test results do not fully reflect the structural characteristics of the distribution, and it should be considered that the data do not deviate significantly from a normal distribution, and suitability for parametric analyses can be ensured within the framework of the central limit theorem.

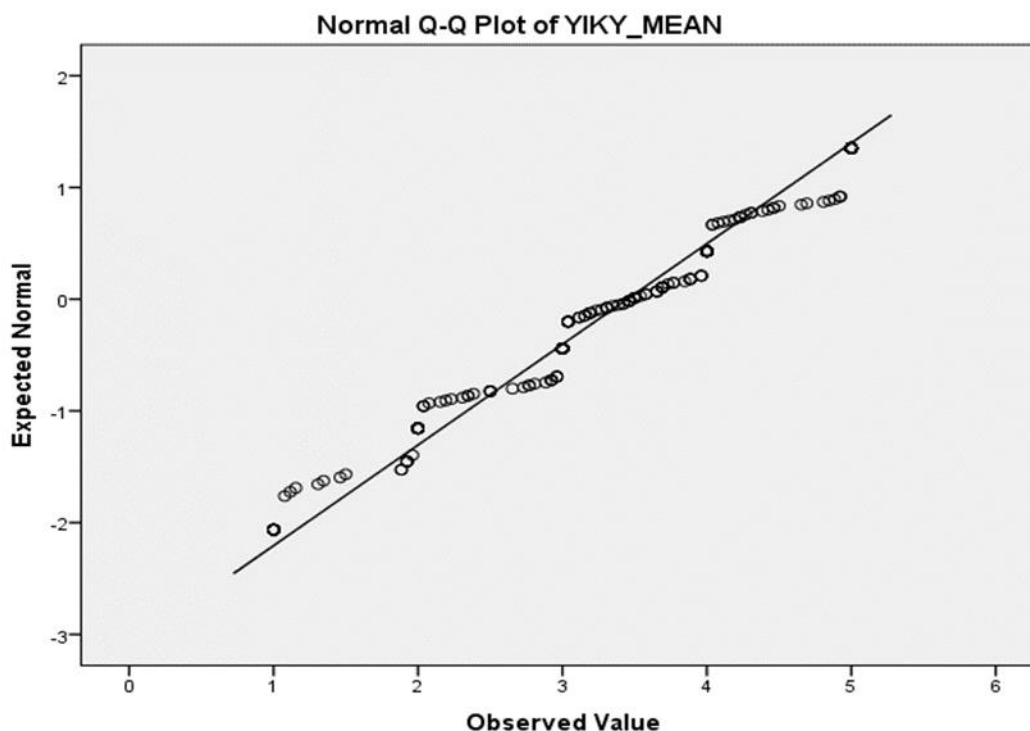


Figure 1. Normal Q-Q (Quantile-Quantile) GHRM graphic.

When examining the Q-Q (Quantile-Quantile) plot for the Green Human Resources Management (GHRM) variable, it is observed that a large portion of the data is distributed on or very close to the diagonal line. This indicates that the data for the GHRM variable is quite close to a normal distribution. The slight deviations observed at the extremes in the graph are due to the high sample size ($n = 306$) and are not at a level that would negatively affect the validity of the analysis statistically. Therefore, when examining the Q-Q plot, it can be said that the data is suitable for parametric analyses and the distribution generally conforms to a normal curve. This finding supports the applicability of parametric tests such as correlation and regression analyses.

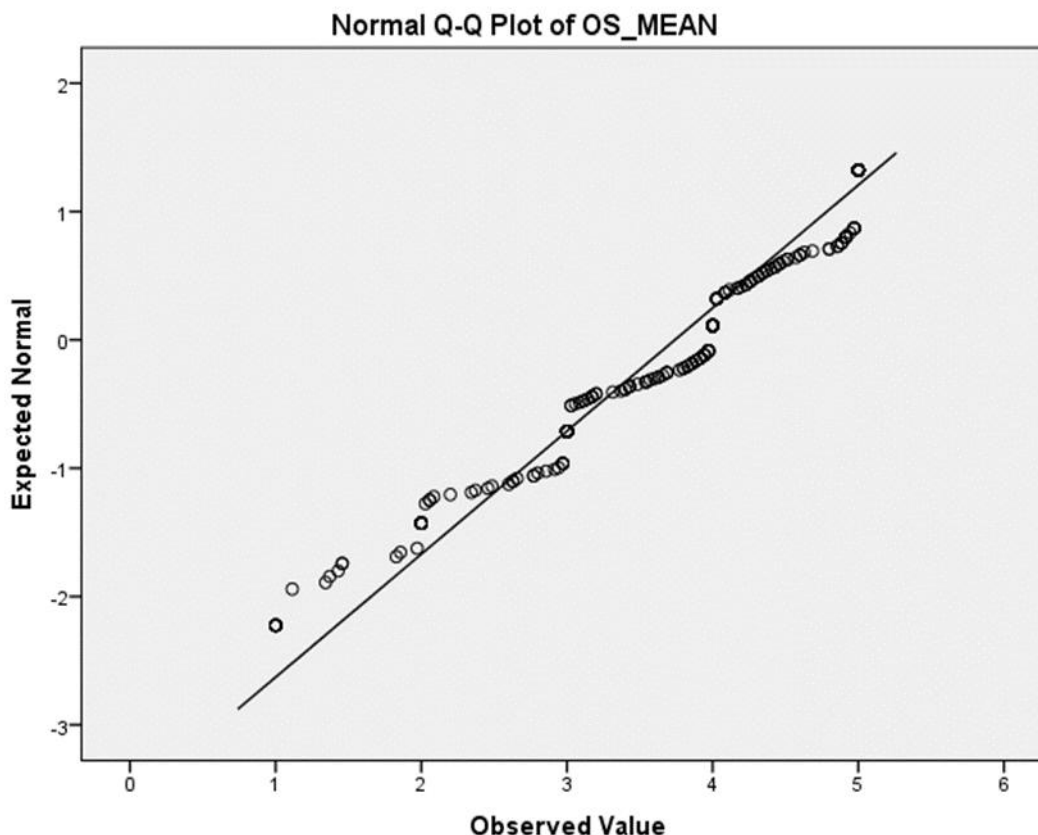


Figure 2. Normal Q-Q (Quantile-Quantile) OS graphic.

When the Q–Q (Quantile–Quantile) plots were examined, it was observed that the majority of observations related to the Organizational Sustainability (OS) variable were located on or very close to the theoretical normal distribution line. This indicates that the distribution of the OS variable is quite close to the normal curve. It was determined that there were a limited number of outliers in both variables, and the observed deviations were not at a level that would statistically affect the analysis. These slight deviations are mainly due to the high sample size ($n = 306$) and do not constitute a situation that would prevent the applicability of parametric tests. In general, it was concluded that the distributions of both the Green Human Resources Management (GHRM) and OS variables are close to the normal curve. This finding demonstrates that parametric statistical methods such as correlation and regression analyses can be applied reliably and forms an important basis for evaluating the validity and reliability of the research.

4.2. Descriptive Statistics

Examining the demographic findings presented in the table, the gender distribution of the total 306 participants in the study is clearly revealed. Accordingly, 72.9% (223 people) of the participants are male and 27.1% (83 people) are female. This distribution shows that the vast majority of the sample is male and is consistent with the physically labor-intensive nature of the construction sector and its traditionally male-dominated employment profile. This finding regarding the gender distribution of the participants provides an important framework for interpreting the other demographic characteristics obtained in the study and allows for the evaluation of the analysis results within a sectoral context.

Table 4. Gender

Gender	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
Man	223	72,9	72,9
Woman	83	27,1	100
Total	306	100	

An examination of the age distribution of the 306 participants in the study reveals that the highest proportion, 37.9% (116 individuals), consists of individuals aged 36–45. 27.8% (85 individuals) are young adults aged 26–35, 15.7% (48 individuals) are individuals aged 46–55, 14.1% (43 individuals) are young workers aged 18–25, and 4.6% (14 individuals) are participants aged 56 and over. This distribution indicates that the vast majority of the participants are concentrated in the middle-aged group. This age distribution suggests that experience, knowledge, and sectoral maturity in the construction industry are concentrated in the middle-aged group. Furthermore, this finding provides an important context for interpreting the research results, particularly when evaluating age-related differences in GHRM practices and sustainability perceptions.

Table 5. Age

Age Groups	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
18-25	43	14,1	14,1
26-35	85	27,8	41,8
36-45	116	37,9	79,7
46-55	48	16,7	95,4
56 +	14	4,6	100
Toplam	306	100	

An examination of the participants' educational background reveals that the majority of the sample, 57.2% (175 people), consists of bachelor's degree graduates. 26.8% (82 people) are high school graduates, and 16% (49 people) hold postgraduate (master's or doctoral) degrees. This finding indicates that a significant portion of the group participating in the study possesses higher education and demonstrates that participants have the academic knowledge and experience to evaluate organizational processes.

Table 6. Education

Education Level	Frequency (n)	Percentage (%)	Cumulative Percentage (%)
High School	82	26,8	26,8
Graduate	175	57,2	84
Post Graduate	49	16	100
Total	306	100	

This educational distribution provides an important context for interpreting the data obtained and analyzing the relationships between organizational sustainability perceptions and environmental awareness practices. Furthermore, it can be argued that participants with higher levels of education may have more conscious approaches to environmental awareness and sustainability issues, thus increasing the reliability of the research findings.

4.3. Independent Sample T Test and Levene's Test

According to the chart below, male participants have higher average scores than female participants in both Green Human Resources Management (GHRM) and Organizational Sustainability (OS). • The average GHRM score for men ($\bar{x} = 3.53$) is higher than the average for women ($\bar{x} = 3.24$). • The average OS score for men ($\bar{x} = 3.82$) is higher than the average for women ($\bar{x} = 3.54$). These findings indicate that male participants have a more positive attitude towards both green human resources practices and organizational sustainability activities compared to women. This gender difference may stem from various organizational factors in the construction sector, such as employees' work experience, job roles, sector dynamics, and levels of exposure to sustainability processes.

Table 7. Independent sample T Test according to gender

Variable	Gender	N	Mean	Standard Deviation	Standard Error
GHRM	Woman (1)	83	3,2396	1,1487	0,1261
	Man (2)	223	3,5262	1,0879	0,0729
OS	Woman (1)	83	3,5356	1,0465	0,1149
	Man (2)	223	3,8181	1,0334	0,0692

According to Levene's Test results, the variances are homogeneous in both variables ($p > 0.05$). The analysis findings indicate that men's perceptions of both green human resources management practices and organizational sustainability are statistically significantly higher than women's. This suggests that male participants evaluate their companies' environmental management and sustainability practices more positively. The specific working conditions and workforce structure of the construction sector contain important factors that may explain why male participants evaluate green human resources management and organizational sustainability practices more positively compared to women. Firstly, the sector's largely male-dominated workforce leads to greater exposure of men to operational processes, environmental practices, and sustainability policies. Sustainability-focused processes such as environmental management procedures, occupational safety practices, waste management, and energy efficiency used on construction sites are more directly

observed and experienced by male employees in their daily work routines. This contributes to their more positive perceptions.

Table 8: Levene's test according to gender

Variable	Levene's Test F	p	t	sd	p (2-tailed)	Mean Difference	Standard Error of Mean	%95 Interval (Bottom–Top)	Trust
GHRM	0,071	0,791	-2,018	304	0,044	-0,287	0,142	-0,566 – 0,007	-
OS	0,366	0,546	-2,118	304	0,035	-0,282	0,133	-0,545 – 0,020	-

4.4. One-Way and Multifaceted Anova Test and Levene's Test

The analysis results reveal that perceptions of Green Human Resources Management (GHRM) differ significantly among age groups. This indicates that participants' evaluations of GHRM practices vary depending on age, and that certain age groups may have more positive or negative perceptions of these practices compared to other groups. Therefore, it can be said that age is an influential factor in GHRM perception. On the other hand, no significant difference was found among age groups in the analyses regarding the perception of Organizational Sustainability (OS). This finding shows that perceptions of organizational sustainability practices are independent of age and that all age groups have similar evaluations. In other words, participants' understanding of organizational sustainability does not show a significant change according to age.

Table 9. One-way Anova test according to age

Variable	F	p	Result
GHRM_MEAN	3,373	0,01	There is significant difference
OS_MEAN	0,826	0,51	There is no significant difference

When these results are evaluated together, it is seen that although age is a determining variable in the perception of organizational sustainability, it does not create a significant difference in terms of organizational sustainability perception. This situation indicates that the relationships between the two variables and the age factor may have different dynamics.

Table 10. Multifaceted Anova test according to gender (tukey hsd)

Comparison	Mean Difference	p	Result
Age 26-35 Age 36-45	-0,44476	0,037	There is significant difference
Age 26-35 Age 56+	-0,90601	0,035	There is no significant difference



According to the analysis results, the perception of Green Human Resources Management (GHRM) among employees aged 26-35 is lower than that of the 36-45 and 56+ age groups. No significant difference was found among other age groups. The one-way analysis of variance revealed that the perception of Green Human Resources Management (GHRM) differed significantly according to age ($F(4,301)=3.37$, $p<0.05$). The Post Hoc Tukey test showed that the perception of GHRM among employees aged 26-35 was significantly lower than that of employees aged 36-45 and over 56 ($p<0.05$). However, the average organizational sustainability scores did not show a significant difference according to age groups ($F(4,301)=0.826$, $p>0.05$). This finding indicates that the perception of human resources towards green practices strengthens with age, but the perception of sustainability is not affected by age.

Table 11. Variance homogeneity test according to age (levene test).

Variable	Levene F	p
GHRM_MEAN	1,964	0,1
OS_MEAN	2,641	0,034

When the Levene test results for the GHRM MEAN variable are examined, it is seen that the obtained p-value is greater than 0.05. This finding indicates that there is no significant difference between the group variances and therefore the basic assumption that the variances are homogeneous is met. In this context, applying one-way analysis of variance (ANOVA) for the GHRM_MEAN variable is considered statistically appropriate. However, the Levene test result for the OS_MEAN variable showed a p-value less than 0.05. This indicates that the variances are not homogeneous between the groups and shows that the assumption of variance homogeneity is not met.

Table 12. One-way Anova results according to education groups

Variable	F	p	Result
GHRM_MEAN	1,328	0,267	There is no significant difference
OS_MEAN	0,836	0,434	There is no significant difference

Neither the perception of Green Human Resources Management nor the perception of Organizational Sustainability changes significantly according to educational level. In other words, even if the education level of employees changes, their perceptions of green practices and sustainability remain at similar levels.

Table 13. Variance homogeneity test according to education groups (levene test)

Variable	Levene F	p
GHRM_MEAN	4,675	0,01
OS_MEAN	3,773	0,024

Levene test results for both variables showed p-values less than 0.05. This finding indicates that the variances between the groups differed statistically significantly, and therefore the assumption of homogeneity of variances was not met.

4.5. Descriptive Statistics

In this section, instead of evaluating each scale item individually, interpretation is made based on the overall average score of each scale. According to the analysis results, the average score for the Green Human Resources Management (GHRM) scale was determined to be 3.47. This value indicates that participants perceive the green human resources practices implemented in their organizations at a medium-to-high level. Similarly, the average score for the Organizational Sustainability (OS) scale is 3.73, revealing that sustainability policies are adopted at a high level and effectively implemented in businesses. The fact that the average values of both scales are above 3.00 shows that the participating businesses exhibit a positive approach to environmental awareness and sustainability issues. These findings provide preliminary evidence that GHRM practices may have a positive effect on organizational sustainability and provide an important basis for the main hypotheses of the research.

Table 14. Descriptive statistics

Variable	N	Mean	Standard Deviation
GHRM	306	3,47	1,21
OS	306	3,73	1,14

Average values were calculated by taking the arithmetic mean of the responses to all items of the relevant scales. For the Green Human Resources Management (GHRM) scale, this calculation was performed on 26 items, and for the Organizational Sustainability (OS) scale, on 35 items. This method ensures that a single central tendency measure representing the overall structure of each scale is obtained. Thus, a reliable and comparable indicator at the general level of participants' perceptions of green human resources practices and sustainability in their organizations has been created.

4.6. Regression Analysis

H0: Green human resources management does not have a statistically significant effect on organizational sustainability. $h_0: \mu_1 > \mu_2$

H1: Green human resources management has a statistically significant effect on organizational sustainability. $h_1: \mu_1 > \mu_2$

Table 15. Regression model summary

Model	R	R ²	Adjusted R ²	Standard Error	F	Sig.
1	0.811	0.657	0.656	0.61175	582.300	0.00

The results of the multiple linear regression analysis reveal that Green Human Resources Management (GHRM) has a positive and statistically significant effect on organizational sustainability ($R = 0.811$, $R^2 = 0.657$, $F = 582.300$, $p < 0.001$). The model's R^2 value of 65.7% indicates that the independent variable, GHRM practices, explain a significant portion of the variance in the dependent variable, organizational sustainability; this ratio demonstrates the model's high explanatory power. The regression coefficients and the model's significance test confirm that GHRM practices strengthen sustainability performance in businesses and create a positive impact on organizational processes. In this context, the first hypothesis (H_1) of the research is supported and accepted; on the other hand, the null hypothesis (H_0) is rejected. This finding shows that Green

Human Resources Management practices are a critical determinant of increasing organizational sustainability.

Table 16. Regression coefficients

Independent Variable	B	Standard Error	β (Beta)	t	p (Sig.)
Constant	1.116	0.114	-	9.762	0.000
GHRM	0.761	0.032	0.811	24.131	0.000

The regression analysis results show that Green Human Resources Management (GHRM) practices have a positive and statistically significant effect on organizational sustainability ($\beta = 0.811$, $p < 0.001$). This finding reveals that a one-unit increase in GHRM practices leads to an increase of approximately 0.761 units in the level of organizational sustainability. In other words, strengthening green human resources practices in businesses plays a significant role in increasing organizational sustainability.

The regression equation obtained as a result of the analysis is expressed as follows:

$$OS = 1.116 + 0.761(GHRM)$$

According to this equation, the constant term (1.116) represents the starting point of the organizational sustainability level when GHRM practices are at a minimum level. The coefficient value of 0.761 shows the average increase in OS that each one-unit increase in GHRM will create. The high β value and significance level of the model reveal that the GHRM variable explains a high degree of variance in organizational sustainability and that the independent variable has a strong influence on the dependent variable. The β line is unstandardized, while the β line is standardized.

These findings support the idea that GHRM practices are a critical factor in determining organizational sustainability and confirm the main hypotheses of the study. Furthermore, the results are consistent with findings obtained in similar studies in the literature and highlight the importance of environmentally integrated practices in human resources processes in improving the sustainability performance of businesses.

4.7. Correlation Analysis

According to the research findings, a positive and high-level correlation was found between Green Human Resources Management and Organizational Sustainability ($r = 0.811$, $p < 0.01$, 2-tailed). The correlation coefficient of 0.811 indicates a very strong and linear positive relationship between the two variables. This result shows that the increase in Green Human Resources practices in businesses contributes to the increase in the level of Organizational Sustainability. The obtained correlation finding supports the significant and positive effect identified in the regression analysis and confirms that Green Human Resources Management is an important determinant of organizational sustainability.

Table 17. Correlation analysis

Variable	1	1
Green Human Resources Management (GHRM)	1	0.811**

Organizational
Sustainability (OS)

0.811**

1

It was determined that each of the Green Human Resources Management and Organizational Sustainability scales used in the analysis has a unidimensional structure. Therefore, the arithmetic means of the responses given to the scale items were taken in the analyses to calculate the average score of each scale. This approach ensured that a single measure representing the holistic structure of the scales was obtained. (Correlation Coefficient (r) Relationship Level

0.00 – 0.30 Weak

0.31 – 0.50 Moderate

0.51 – 0.70 Strong

0.71 – 1.00 Very Strong

Correlation and regression analyses were also performed between the Green Human Resources Management average score (GHRM_MEAN) and the Organizational Sustainability average score (OS_MEAN) variables. Thus, the general relationship and effect of both variables were examined independently of item-based variations, and a holistic interpretation of the analysis results was ensured.

5. DISCUSSION

The findings of this research demonstrate that GHRM practices have a significant and positive impact on sustainability performance. The results show that GHRM holistically supports the environmental, social, and economic sustainability dimensions. In this respect, the research findings largely coincide with many empirical studies conducted in the literature in recent years. The research findings show that GHRM practices, when considered with a holistic approach, create significant and strong effects on sustainability outcomes. In this context, it has been determined that structuring human resources processes in line with environmental goals supports the environmental, social, and economic sustainability performance of businesses. These results are parallel to the study conducted by Yusoff et al. (2023) in the manufacturing sector in Malaysia. In that study, it was found that GHRM practices that increase employees' environmental awareness directly strengthen environmental performance and indirectly strengthen corporate sustainability. Similarly, Pham and Kim (2024), in their research conducted in the construction sector in Vietnam, emphasized that GHRM practices play a critical role in the internalization of sustainability strategies at the corporate level. In this context, the current research, particularly with its results focusing on the construction sector, supports these studies. However, the research findings also show partial differences from some studies in the literature. For example, a study conducted in China by Tang and Lee (2023) concluded that the impact of GHRM practices on economic sustainability was limited. This study stated that businesses addressed environmental practices mainly within the framework of legal obligations and did not integrate them strategically into human resources processes (Tang & Lee, 2023). In the current research, the significant impact of GHRM on economic sustainability may stem from the project-based structure of the sector, the need for cost optimization, and the importance of resource efficiency. Similarly, a study conducted in Middle Eastern countries by Al-Ghazali and Afsar (2024) stated that GHRM practices did not have the expected level of impact on employee behavior. The researchers explained this situation by the fact that the organizational culture was not sufficiently aligned with environmental values and that top management support remained limited (Al-Ghazali & Afsar, 2024). In contrast, the strong impact of GHRM practices on sustainability found in this study conducted in the Turkish context can be attributed to the fact that collectivist values in the cultural context contribute to employees' faster adaptation to organizational

environmental policies. These discrepancies between the findings obtained and the different results in the literature are thought to stem from differences in country context, sector dynamics, sample characteristics, and research methods. The increasing strategic necessity of sustainability, especially in developing countries, encourages the more systematic adoption of GHRM practices by businesses (Ren et al., 2023). Furthermore, the focus of this study on the construction sector may have led to GHRM practices producing more visible and measurable results due to the sector's high environmental impact.

In conclusion, these research findings support the idea that GHRM practices are an effective tool in improving sustainability performance; they also highlight the need to evaluate different findings in the literature by considering contextual factors. In this respect, the study offers unique contributions to the literature both in the Turkish context and specifically in the construction sector.

6. CONCLUSION

This thesis examines the impact of Human Resources Management (HRM) practices implemented in construction companies on sustainability. The study evaluates the contributions of HRM practices to environmental, social, and economic sustainability dimensions both theoretically and empirically. HRM is a strategic approach aimed at the most effective use of resources through human resources policies and practices to achieve the environmental sustainability goals of businesses. In this context, practices such as the effective use of information and communication technologies, reducing or completely eliminating paper consumption, promoting digitalization in business processes, and using remote communication tools such as video conferencing instead of business travel contribute to reducing the carbon footprint. HRM encompasses a holistic understanding that aims not only to minimize environmental impacts but also to increase employees' environmental awareness and corporate commitment. Human life largely depends on natural resources; however, these resources are not unlimited. It is precisely at this point that the concept of sustainability, which also considers the needs of future generations, gains importance. Sustainability means maintaining the delicate balance between nature and humanity, and establishing this balance largely depends on humanity's conscious choices. Every decision, from consumption habits to production methods, can directly affect the environmental balance. Therefore, every step taken at the individual and corporate level is crucial for the continuity of the ecosystem. Building a sustainable future is only possible through environmentally conscious, responsible, and informed choices. Today, the increase in environmental problems and the inclusion of sustainable development goals on the agenda of businesses have made it necessary to restructure HRM practices from an environmental perspective. In this context, Green Human Resources Management (GHRM) is a strategic approach aimed at increasing the environmental awareness of businesses, encouraging environmentally friendly behaviors of employees, and strengthening sustainability performance. The importance of GHRM practices is even more evident in companies such as the construction sector, where natural resource consumption is high and environmental impacts are intense. Practices such as green recruitment, green environmentally friendly training programs, green performance evaluation, green wages and rewards, green occupational health and safety, and finally, green employee relations support businesses not only in achieving environmental sustainability but also in achieving economic and social sustainability goals. The findings obtained within the scope of the research reveal that the adoption of green human resources management practices at the organizational level strengthens the understanding of sustainability. Shaping human resources policies in line with environmental responsibilities not only increases businesses' environmental awareness but also enhances their social responsibility consciousness and contributes to long-term corporate sustainability. The research shows that both green human resources practices and sustainability policies are implemented at a

medium-to-high level in the participating businesses. These findings indicate that environmental sustainability awareness is increasingly strengthening in the construction sector. In particular, the increasing environmental policies in recent years, such as reducing carbon footprint, energy efficiency, and waste management, have led businesses towards a greener human resources approach. Adopting green human resources practices contributes to businesses becoming more responsible not only towards the environment but also towards society and the economy.

The results obtained in this study are similar to those obtained in previous studies. For example, Jabbour (2013) stated that green human resources management practices provide strategic advantages to businesses in terms of environmentally friendly production, employee awareness, and sustainable corporate culture development. Renwick et al. (2013) emphasized that green human resources management has a direct impact on environmental performance and employee commitment. The average values obtained in this research show similar results to those studies.

The results of the independent samples t-test conducted according to the gender variable revealed that male employees have a higher level of interest in green human resources management than female employees. Levene test results showed that the variances were homogeneous, and the T-test findings confirmed that these differences were statistically significant. This indicates that male employees have more positive evaluations regarding environmental practices and sustainability activities.

In the ANOVA analysis conducted according to age, it was determined that the perception of green human resources management differed significantly among age groups. It was found that the perceptions of green human resources management (GHRM) among employees, particularly those in the 26-35 age group, were lower than those in the 36-45 and over 56 age groups. However, no significant difference was found in perceptions of green practices based on age. This result indicates that age is a factor influencing GHRM perception, but sustainability perception is age-independent. Regarding education level, the ANOVA results showed no significant difference in either GHRM or OS perceptions, demonstrating that employees' education level is not a determining factor in their perceptions of green practices and sustainability. The regression analysis conducted to evaluate the impact of green human resources management practices on sustainability, the main objective of the research, revealed that the model has high explanatory power. The strong and significant regression coefficient indicates that an increase in GHRM practices significantly increases the level of organizational sustainability. The regression equation obtained from the model clearly shows that each unit increase in GHRM leads to a significant increase in the level of sustainability. These findings are consistent with previous studies in the literature (Jackson et al., 2011; Renwick et al., 2016; Opatha & Arulrajah, 2014). These studies have also shown that green human resources practices increase sustainability in organizations through factors such as environmental performance, energy saving, waste management, and employee awareness. Therefore, the hypothesis of the study, “green human resources management has a significant effect on organizational sustainability,” has been accepted.

Correlation analysis revealed a positive and very strong relationship between green human resources management and organizational sustainability. The high correlation coefficient indicates that the relationship between the two variables involves a structural and holistic interaction. This finding supports the regression results and confirms that green human resources management practices are one of the critical determinants of organizational sustainability. This result is consistent with many studies in the literature. For example, Tang et al. (2018) stated that the effect of green human resources management practices on environmental performance is strengthened through employees' environmental behaviors. Similarly, Mishra (2017) stated that green human resources practices enhance the environmental reputation and long-term performance of businesses by

supporting sustainability strategies. Therefore, the findings of this study reveal that green human resources practices not only produce environmentally conscious policies but also transform the overall sustainability understanding of organizations.

When all the findings are evaluated together, it is clearly seen that Green Human Resources Management (NHRM) practices in the construction sector are a fundamental element that increases organizational sustainability. Adopting GHRM practices at the strategic level strengthens the environmental performance of businesses and contributes to the effective implementation of sustainability policies. The results of the study are consistent with similar research in the literature and strongly support the idea that GHRM plays a critical role in the context of sustainability. The research findings emphasize that human resources management is a strategic tool in achieving sustainability goals. These results support the view in the literature that GHRM is a “driving force” for corporate sustainability (Renwick et al., 2013; Opatha and Arulrajah, 2014; Pinzone et al., 2019).

Accordingly, it is recommended that businesses address GHRM practices with a holistic approach to improve their sustainability performance. In particular, practices such as training programs aimed at increasing employees' environmental awareness, sustainable job design, environmentally friendly performance appraisal systems, and green reward mechanisms are thought to be effective in strengthening corporate sustainability.

Considering the demographic differences revealed in the research findings, it is recommended that businesses take employee profiles into account when developing sustainability policies. Developing differentiated environmental awareness and sustainability programs based on employees' job areas, experience levels, and organizational roles can increase the effectiveness of GHRM practices. This approach will encourage more active employee participation in sustainability processes.

When evaluated specifically in the construction sector, the widespread adoption of GHRM practices is of great importance due to the sector's high environmental impact. Businesses should not limit environmentally friendly practices to technical processes but also support them with human resources policies; this will increase the efficiency of resource use and contribute to sustainable development goals. The findings of the study emphasize the importance of integrating sustainability policies with human resources processes in the construction sector and offer valuable contributions to sectoral practices. For future research, it is suggested that the relationship between green human resources management and sustainability be addressed within different sectors and cultural contexts. Furthermore, a more in-depth examination of employees' perceptions of sustainability using qualitative research methods or mixed methods approaches could make significant contributions to the literature. In addition, evaluating the long-term impacts of GHRM practices through longitudinal studies will allow for more comprehensive conclusions on the subject.

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