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Advancing Sustainability in Turkish Hospitality Sector: The Interplay Between Green HRM, Eco-Friendly Behaviors, and Organizational Support

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Abstract: This study critically examines the mediating role of employees' eco-friendly behavior (EFB) and the moderating role of green organizational support (GOS) within the relationship between green human resource management (GHRM) and environmental performance (EP) in Turkey's hospitality sector. As the global hospitality industry grapples with its significant environmental footprint, this research addresses an acute need for empirically grounded insights into how organizational strategies and employee behaviors can be leveraged to achieve sustainability objectives. The study draws on primary data collected from 346 employees across multiple five-star hotels in Turkey. Data collection was facilitated through structured surveys, and analysis employed confirmatory factor analysis and structural equation modeling. Results provide evidence for EFB's mediating role and GOS's moderating effects. Findings underscore the need for comprehensive GHRM strategies synergized with robust GOS systems to foster employee commitment to sustainability goals.

Keywords: green human resource management (GHRM); environmental performance (EP); eco-friendly behavior (EFB); green organizational support (GOS); sustainability; hospitality sector; mediation; moderation

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1. Introduction

The nexus between environmental sustainability and green management practices has been extensively explored in the recent literature, revealing significant benefits that extend beyond ecological outcomes to include enhanced corporate image, competitive advantage, and organizational longevity [1–5]. Within the hospitality sector, an industry characterized by high resource intensity and waste generation, the adoption of green human resource management (GHRM) practices has emerged as a strategic imperative [6]. Studies conducted in other countries substantiate the pivotal role of GHRM in shaping positive employee outcomes, thereby fostering a culture of sustainability [6]. However, the precise mechanisms through which GHRM influences organizational environmental performance (EP) remain inadequately understood, particularly in under-researched contexts such as Turkey.

Sustainable development is now a cornerstone of organizational strategy, reshaping the traditional roles of human resource management (HRM). Younger generations entering the workforce increasingly prioritize organizational commitment to ethical and

green standards when evaluating prospective employers [7]. This shift demands that HR managers not only incorporate green strategies into HRM systems but also ensure these strategies resonate with organizational goals and employee expectations [8,9]. While existing studies affirm the potential of GHRM to advance sustainable development [9,10], the literature remains fragmented in addressing critical gaps, such as the specific employee behaviors and organizational mechanisms that drive sustainability. Refs. [6,11] highlight that the interplay between traditional HRM and GHRM practices and their respective contributions to sustainability has yet to be fully delineated, underscoring the need for more granular investigations.

Studies like those by [12–14] emphasize the significance of employee engagement in achieving environmental goals [13], a perspective increasingly critical in modern HRM discourse.

The nexus between environmental sustainability and green management practices has been extensively examined, demonstrating significant benefits that transcend ecological outcomes to include an enhanced corporate image, competitive advantage, and organizational longevity [15–17]. However, despite the growing body of research, the intricate mechanisms through which green HRM practices influence environmental performance remain inadequately explored, particularly within under-researched sectors such as the Turkish hospitality industry, a sector characterized by resource-intensive operations and complex sustainability challenges [3,18,19].

Existing studies have primarily focused on green HRM in isolation, overlooking critical moderating and mediating factors, such as employees' eco-friendly behaviors (EFB) and green organizational support (GOS) [20,21]. Eco-friendly behavior, encompassing voluntary actions aligned with environmental goals, has been recognized as a vital determinant of the successful implementation of organizational green initiatives [22]. Simultaneously, GOS, which reflects the extent to which organizations support green initiatives, is posited to amplify the efficacy of green HRM strategies by fostering a conducive environment for sustainability practices [18].

This study addresses these research gaps by integrating theoretical frameworks, including the Ability–Motivation–Opportunity (AMO) model and the Resource-Based View (RBV). These frameworks underpin an investigation into how green HRM practices influence environmental performance through the mediating role of EFB and the moderating influence of GOS. By situating the research within the Turkish hospitality sector, this study contributes to advancing theoretical and practical understanding of green HRM, offering insights that are both globally relevant and locally specific.

Turkey's hospitality sector, experiencing rapid growth alongside substantial environmental challenges, presents a compelling context for addressing critical research gaps. Despite the sector's economic significance, limited attention has been given to studies exploring green human resource management (GHRM) within this domain, particularly concerning the mediating dynamics of employees' eco-friendly behaviors (EFB) and the moderating influence of green organizational support (GOS) [15,16]. This research aims to bridge these gaps by empirically examining the mechanisms through which GHRM impacts environmental performance (EP), focusing on data collected from five-star hotels that exhibit high levels of resource consumption. Specifically, the study makes a significant contribution to the literature by investigating the mediating role of EFB and the moderating role of GOS in the relationship between GHRM and EP.

The study is grounded in established theoretical frameworks to support the development of its hypotheses. A comprehensive review [23] highlights five dominant theories in GHRM research: the Ability–Motivation–Opportunity (AMO) framework [24–26], the

Resource-Based View (RBV) [27,28], Stakeholder Theory (SHT), Social Exchange Theory (SET), and Social Identity Theory (SIT).

This research utilizes the AMO framework and the RBV to provide an analysis of how employee abilities, motivation, and opportunities function as mediators and moderators in the relationship between GHRM practices and EP. By synthesizing these theoretical perspectives, the study offers a robust and comprehensive model for understanding the intricate dynamics of green HRM strategies within the hospitality industry [23–28]. The following section delves into these frameworks in greater detail, elucidating their relevance and practical application to sustainable organizational practices.

2. Literature Review and Developing Hypotheses

Environmental sustainability has evolved from being a peripheral concern to a central strategic priority for organizations globally. Within the hospitality sector—a resource-intensive industry characterized by high energy, water, and material consumption—the adoption of green human resource management (GHRM) practices has emerged as a critical pathway to achieving sustainable development [29,30]. Green HRM encompasses a suite of practices designed to align organizational human resource strategies with environmental objectives, including green recruitment, training, performance management, and employee engagement, fostering a culture of eco-consciousness within organizations [15,31].

2.1. Resource-Based Theory and Green Human Resource Management

The Resource-Based Theory (RBT) posits that a firm's ability to gain and sustain a competitive advantage is contingent upon its unique resources, which are valuable, rare, inimitable, and non-substitutable (VRIN) [32]. Among these, human capital—comprising employee skills, knowledge, and behaviors—plays a pivotal role, especially in dynamic industries such as hospitality [33]. Within the RBT framework, the application of green human resource management (GHRM) represents a strategic approach to leveraging human capital for achieving environmental performance and sustainability goals [30,31].

Green HRM practices operationalize the principles of the RBT by fostering eco-friendly behaviors and enhancing employees' environmental awareness through targeted HR interventions such as green training, performance management, and employee involvement [30,31]. These practices align with the Ability–Motivation–Opportunity (AMO) framework, which serves as a complementary theoretical lens for understanding how organizational systems influence employee behaviors and organizational performance [34,35].

2.2. AMO Framework in GHRM and Environmental Performance

The AMO framework identifies three critical dimensions—ability, motivation, and opportunity—as key drivers of employee discretionary effort and performance [34]. The integration of the AMO framework within GHRM practices elucidates how organizations can create an environment conducive to environmental sustainability by developing employees' green abilities, motivating pro-environmental behaviors, and providing opportunities for active participation in environmental initiatives [31,36].

Ability: Green training programs enhance employees' knowledge and skills related to environmental sustainability. For instance, training initiatives in Turkish hospitality firms can equip employees with practical tools to adopt eco-friendly practices, such as energy conservation and waste management [30,31].

Motivation: Performance management systems that reward eco-friendly behaviors and align individual goals with organizational sustainability objectives play a crucial role in fostering motivation. However, some studies have critiqued the limited effectiveness

of performance management systems in directly influencing environmental commitment, suggesting a need for more nuanced interventions [30,35].

Opportunity: Providing opportunities for employee involvement in decision-making processes and sustainability initiatives strengthens organizational citizenship behaviors towards the environment (OCBE) [3,30]. Empowering employees to contribute to environmental strategies fosters a sense of ownership and commitment, which are essential for achieving long-term sustainability.

2.3. Interaction Effects and Challenges

Research highlights that the interaction among ability, motivation, and opportunity significantly amplifies their individual effects on organizational outcomes—a concept underscored by the AMO framework's multiplicative model [3,30,34]. For example, in the Turkish hospitality sector, the combined application of green training (ability), incentivization of green behaviors (motivation), and participatory opportunities (opportunity) has shown potential for enhancing environmental performance [3,30].

However, the challenges in operationalizing these interactions include varying levels of environmental awareness among employees and organizational inertia. The high turnover rates in the hospitality industry further complicate efforts to embed these practices as sustained capabilities [31]. Additionally, while green training has proven effective in cultivating green mindsets, its impact is often diluted without corresponding motivational and structural support systems [34].

2.4. Development of Hypotheses

Green human resource management (GHRM) practices are designed to promote positive environmental outcomes by developing employee abilities, motivation, and opportunities in the environmental domain [37]. These practices help organizations achieve environmental objectives by leveraging employee engagement to reduce pollution and implement green initiatives [15,38]. Empirical evidence from various studies across different sectors and countries, such as Vietnam, Afghanistan, and South Africa, consistently demonstrates a significant positive relationship between GHRM and environmental performance [3,30,39,40]. Drawing on the Resource-Based View (RBV) and the AMO framework, the following hypothesis is proposed:

H1. *GHRM positively impacts hotels' environmental performance.*

Eco-friendly behaviors are actions taken by employees to support environmental sustainability, such as reducing energy use or minimizing waste. Studies in the hotel and public sectors reveal that GHRM practices, including green training and employee involvement, significantly enhance eco-friendly behaviors [41–43]. Green HRM aligns individual behaviors with organizational eco-objectives through formal policies and practices [15,44]. Based on these findings and theoretical frameworks, the following hypothesis is formulated:

H2. *GHRM positively influences employees' eco-friendly behavior.*

Employees' eco-friendly behavior is a critical determinant of organizational environmental performance, as these behaviors directly impact how green initiatives are implemented [45,46]. Studies show a strong positive relationship between individual eco-friendly behaviors and organizational environmental outcomes, reinforcing the importance of aligning individual actions with corporate sustainability goals [47]. Accordingly, the following hypothesis is formulated:

H3. *Employees' eco-friendly behavior positively relates to environmental performance.*

Employees play a pivotal role in translating GHRM practices into organizational environmental performance by acting as agents of green policy implementation [15]. Empirical studies indicate that employees' eco-friendly behavior mediates the relationship between GHRM and environmental performance [37,46]. This mediating role underscores the importance of fostering a workforce that internalizes and enacts the organization's environmental goals. Thus, the following hypothesis is proposed:

H4. *Employees' eco-friendly behavior mediates the effect of GHRM on environmental performance.*

Green organizational support (OS) enhances the impact of GHRM practices by creating a supportive environment for employees to engage in sustainability initiatives. Employees who perceive strong organizational backing for their green efforts are more likely to contribute effectively to environmental objectives [18,48]. Research shows that green OS can strengthen the link between GHRM and environmental performance by amplifying employees' motivation and commitment. Hence, the following hypothesis is proposed:

H5. *Green organizational support moderates the effect of GHRM on environmental performance.*

Organizational support influences how employees perceive and respond to GHRM initiatives. When employees believe that their contributions toward sustainability are valued, they are more likely to adopt eco-friendly behaviors [18,49]. Green OS acts as a moderator, enhancing the impact of GHRM on individual eco-friendly behaviors [18,48,49]. Thus, the following hypothesis is formulated:

H6. *Green organizational support moderates the effect of GHRM on employees' eco-friendly behavior [18,49].*

The variables and hypotheses encompassed in the research model are illustrated in Figure 1, providing a conceptual framework for the study.

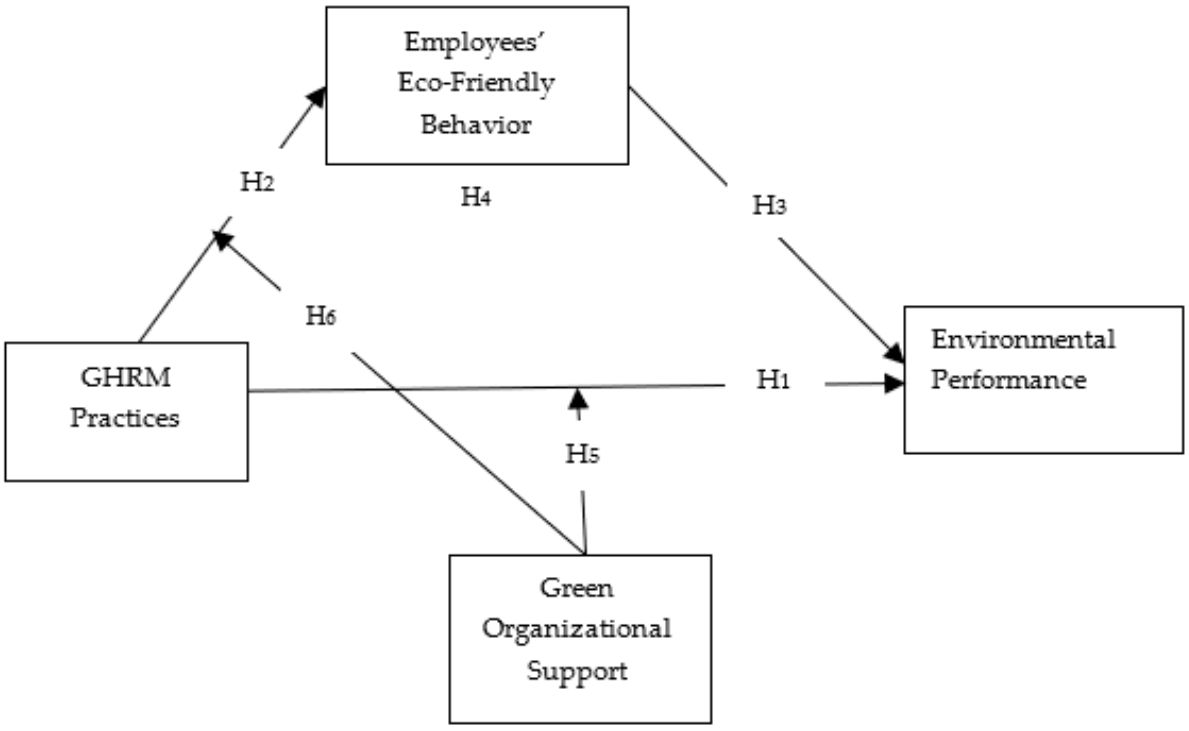


Figure 1. Conceptual model and hypotheses.

3. Research Method

3.1. Data Collection

The data for this study were obtained from hotels' employees, including managers, receptionists, concierges, and reservation agents, employed at five hotels in Turkey. These hotels, part of an international five-star hotel chain with operations in 32 countries, were located in İstanbul (9 hotels), Antalya (5 hotels), Bursa (1 hotel), İzmir (2 hotels), and Bodrum (2 hotels). To facilitate data collection, a total of 19 hotel managers were identified, and 25 questionnaires were distributed to each manager with a request for their support in having employees complete the surveys. Out of the distributed questionnaires, 409 were returned. Following a meticulous review, 31 questionnaires were excluded from further analysis due to incomplete responses.

Consequently, 378 fully completed and valid questionnaires formed the initial dataset for analysis. Further screening of the data identified 32 questionnaires as outliers, which were subsequently removed to ensure the robustness of the analytical process. The final dataset comprised 346 valid responses. The data collection process was conducted over a one-month period, from 15 October to 15 November 2023.

Five-star hotels are uniquely positioned to prioritize environmental awareness due to their international clientele and global operational scope. As part of their strategic management policies, these establishments often integrate environmental stewardship into their core values. Consequently, employees of five-star hotels represent an ideal sample group for research examining environmental management practices. This study specifically selected employees from such hotels as its research participants, aligning with the study's objectives to explore green human resource management (GHRM) practices. The demographic characteristics of the participants are summarized in Table 1.

Table 1. Demographic data $n = 346$.

Demographic Items	Frequency	(%)
Gender		
Male	116	66.5
Female	230	33.5
Age		
18–22	76	22.0
23–27	162	46.8
28–32	80	23.2
33 and above	28	8.1
Education		
Undergraduate	115	33.2
Graduate	165	47.7
Postgraduate	66	19.1
Position		
Manager	120	34.7
Non-manager	226	65.3
Tenure		
1–2 years	80	23.1
3–5 years	112	32.4
6 or more years	154	44.5

Ethical Considerations

Prior to commencing data collection, ethical approval for the study was secured from the Ethics Committee of Istanbul Commerce University on 11 October 2023. This approval encompassed all research instruments and procedures utilized in the study.

3.2. Sample Size

The determination of sample size in structural equation modeling (SEM) research involves adherence to specific guidelines to ensure robust statistical analysis. One commonly adopted criterion suggests that the sample size should be at least ten times the number of parameters estimated within the model. Additionally, a widely accepted threshold indicates that confirmatory factor analysis (CFA) and SEM require a minimum sample size of 150 participants as adequate for achieving reliable parameter estimates, minimizing errors, and ensuring proper model convergence to yield reliable results [48,49]. Considering these benchmarks, the inclusion of 346 data points in the present study satisfies these requirements, ensuring a sufficient sample size for SEM analysis [50].

3.3. Survey Development and Translation

The survey instrument (please, see Appendix A for more details) used in this study was initially developed in English and subsequently translated into Turkish using the back-translation method to ensure semantic and contextual equivalence [51,52]. Before formal data collection, a pilot test was conducted to assess the readability, clarity, and comprehensibility of the survey items. Additionally, the pilot study examined participants' understanding of the implementation of GHRM practices. All survey items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with the exception of control variables, which were analyzed separately. This methodological rigor was intended to enhance the reliability and validity of the research findings.

Green Human Resource Management (GHRM)

The GHRM construct was measured using two primary approaches documented in the literature. The first approach employs comprehensive scales with 4–5 items for each HR function [39,52], while the second uses a single-item scale for each HR function [17]. A review of recent studies suggests a preference for shorter scales [29,53]. Accordingly, this study adopted the concise six-item GHRM scale developed by [17,54,55]. A sample item from this scale is, "My hotel provides adequate training to promote environmental management as a core organizational value".

Environmental Performance (EP)

To evaluate environmental performance [55], the study employed a five-item scale developed by [29,55]. This scale has been widely validated in prior research (e.g., [29]). A representative item from the scale is, "Our hotel reduced purchases of non-renewable materials, chemicals, and components".

Employees' Eco-Friendly Behavior (EEFB)

Employees' eco-friendly behavior was assessed using a scale developed by [29,55]. This instrument includes items that measure environmentally conscious behaviors in the workplace. A sample item is, "I sort and recycle the garbage in the workplace".

Green Organizational Support (GOS)

Green organizational support was measured using a scale originally developed by [56,57] and later adapted for green management contexts by [18]. This scale has been employed in numerous studies [58]. A sample item is, "Our hotel values my contribution to green management issues".

Control Variables

Several control variables were included to account for potential demographic and organizational influences. These variables include:

Age (1 = 18–22; 2 = 23–27; 3 = 28–32; 4 = 33 and above), Gender (1 = male; 2 = female), Education level (1 = undergraduate; 2 = graduate; 3 = postgraduate), Tenure (1 = 1–2 years; 2 = 3–5 years; 3 = 6 or more years), Position (1 = top manager; 2 = manager; 3 = non-manager).

3.4. Statistical Analyses

Structural equation modeling (SEM) can be categorized into two primary approaches: covariance-based SEM (CB-SEM) and variance-based SEM, commonly known as partial least squares SEM (PLS-SEM) [59]. The philosophical distinction between these two methods is well established. CB-SEM is most suitable for studies aiming at theory testing and confirmation, while PLS-SEM is more appropriate for predictive purposes and theory development [60–63]. In this study, CB-SEM was employed as the primary analytical approach, as the objective was to validate a theoretically established model, and the dataset exhibited a normal distribution. The analysis was conducted using SPSS Amos 24, a robust and widely recognized software tool for CB-SEM [59,62].

3.4.1. Normality Assessment

The normality of the dataset was assessed through skewness and kurtosis, as summarized in Table 2. According to [64], normality thresholds for SEM include skewness values within the range of −3 to +3 and kurtosis values within −10 to +10 [65]. In this study, skewness values ranged from −0.012 to −0.862, while kurtosis values were between 0.014 and −1.309, indicating univariate normality across all variables. However, the multivariate normality value was found to be 83.15. Despite the dataset demonstrating univariate normality, the multivariate value exceeding 20 necessitated the application of maximum likelihood estimation alongside the bootstrap technique to ensure robustness in the analysis [50].

Table 2. Normality testing and descriptive statistics.

Variable	Min	Max	Skewness	c.r.	Kurtosis	c.r.
ef4	1000	5000	−0.211	−1601	−0.755	−2868
os7	1000	5000	−0.625	−4746	−0.724	−2750
os6	1000	5000	−0.334	−2540	−1223	−4643
os5	1000	5000	−0.188	1425	−1247	−4735
os4	1000	5000	−0.304	−2312	−1309	−4972
os3	1000	5000	−0.476	−3612	−1104	−4192
os2	1000	5000	−0.482	−3662	−0.946	−3592
ep5	1000	5000	0.178	1350	−1117	−4243
ep4	1000	5000	−0.151	−1148	−0.929	−3528
ep3	1000	5000	−0.012	−0.094	−0.634	−2407
ep2	1000	5000	0.144	1097	−0.531	−2017
ep1	1000	5000	−0.277	−2100	−0.873	−3316
ef7	1000	5000	−0.389	−2956	−0.271	−1030
ef6	1000	5000	−0.468	−3552	−0.125	−0.477
ef5	1000	5000	−0.587	−4458	0.014	0.055
ef3	1000	5000	−0.446	−3390	0.142	0.539
hr6	1000	5000	−0.526	−3996	0.361	1371
hr5	1000	5000	−0.332	−2521	−0.232	−0.881
hr4	1000	5000	−0.566	−4300	−0.032	−0.121
hr3	1000	5000	−0.862	−6549	2136	8109
hr1	1000	5000	−0.588	−4468	0.675	2563
Multivariate					277,869	83,149

3.4.2. Reliability and Validity

The maximum likelihood (ML) estimation method was employed in the Confirmatory Factor Analysis (CFA) due to the absence of missing data and the normal distribution of the dataset. Ensuring the reliability of the data is critical, as it represents the probability of obtaining consistent results across repeated measurements using the same methodological approach on different samples from the same population [66]. To assess the internal con-

sistency reliability, both factor loadings and Cronbach's alpha values were evaluated. For acceptable internal consistency, factor loadings of 0.50 or higher are considered sufficient, while values exceeding 0.70 are regarded as optimal [67,68]. As evidenced in Table 3, the majority of the factor loadings surpass the threshold of 0.70, indicating robust internal consistency within the constructs.

Table 3. CFA factor loadings. Cronbach's alpha.

Item	Factor Loading	Cronbach's Alpha
os3	0.863	0.941
os4	0.879	
os5	0.836	
os6	0.874	
ep1	0.872	0.918
ep2	0.834	
ep3	0.862	
ep4	0.890	
ep5	0.708	
ef4	0.464	0.878
ef5	0.908	
ef6	0.933	
ef7	0.951	
hr1	0.780	0.899
hr3	0.582	
hr4	0.938	
hr5	0.976	
hr6	0.716	
ef3	0.612	0.941
os2	0.827	
os7	0.845	

CMIN = 624.734. DF = 181. CMIN7DF = 3.4. CFI = 0.938. SRMR = 0.053. RMSEA = 0.084. Note: Green OS: Green organizational support. Green EP: Green environmental performance. Green EFB: Green eco-friendly behavior. GHRM: Green human resource management. α: Cronbach's alpha. CMIN: Chi-square minimum. CFI: Comparative fit index. RMSEA: Root mean square error of approximation. SRMR: Standardized root mean square residual.

Assessment of Structural Validity

Structural validity encompasses two critical dimensions: convergent validity and discriminant validity. Convergent validity necessitates that measurement tools designed to evaluate the same conceptual construct exhibit at least a moderate correlation ($r > 0.50$). Conversely, discriminant validity demands that the correlation between related yet distinct conceptual constructs remains low ($r < 0.50$). For a construct to demonstrate convergent validity, the average variance extracted (AVE) must exceed 0.50, and the composite reliability (CR) must be greater than 0.60. Additionally, the CR value should surpass the corresponding AVE value. As shown in Table 4, the AVE values of all factors are greater than 0.60, and the CR values exceed 0.90, providing strong evidence that the model satisfies the criteria for convergent validity.

Discriminant validity was initially assessed using the Fornell–Larcker criterion. According to this criterion, discriminant validity is achieved when the square root of a construct's AVE exceeds its correlations with other constructs [69–72]. However, the analysis results in Table 4 reveal that the square root of the AVE for the green human resource management (GHRM) variable is smaller than its correlation with the eco-friendly behavior construct. Consequently, the discriminant validity for the GHRM variable was not established under this criterion.

Table 4. Discriminant validity.

	Mean	SD	CR	AVE	1	2	3	4
GHRM	4.03	0.65	0.942	0.739	**0.860**			
Eco-friendly behavior	3.81	0.70	0.920	0.698	0.865	**0.799**		
Environmental performance	3.05	0.90	0.892	0.638	0.570	0.644	**0.835**	
Organizational support	3.52	2.09	0.903	0.687	0.715	0.684	0.623	**0.854**

Note: $p < 0.05$. $p < 0.01$. $p < 0.001$. CR: composite reliability. AVE: average variance extracted. On the diagonal, bold numbers are the square root of AVE.

To address this, the Heterotrait–Monotrait (HTMT) ratio was calculated as a second-stage analysis. According to [70,71], the HTMT values must be below 0.90 to confirm discriminant validity. As shown in Table 5, the HTMT analysis provided satisfactory results, confirming that discriminant validity is met for all constructs, including GHRM [73–75].

Table 5. HTMT values.

Variable	1	2	3	4
GHRM	1			
Eco-friendly behavior	0.900	1		
Environmental performance	0.624	0.723	1	
Organizational support	0.199	0.726	0.656	1

This analysis validates the structural integrity of the proposed model. Convergent validity was confirmed with AVE values exceeding 0.50 and CR values surpassing 0.60. While discriminant validity was initially unconfirmed for GHRM using the Fornell–Larcker criterion, the HTMT analysis provided conclusive evidence of discriminant validity across all constructs. These findings affirm the reliability and validity of the measurement model, enabling robust inferential analysis in subsequent stages of research [74,76,77].

4. Results

Following the validation of the measurement model, the research hypotheses were examined using a structural equation modeling (SEM) approach for the latent variable model. To test H1 (GHRM → EP), a structural model was specified where green human resource management (GHRM) was treated as an exogenous variable and environmental performance (EP) as an endogenous variable. The SEM results indicate that GHRM significantly predicted environmental performance ($\beta = 0.63$, $p < 0.01$). Therefore, H1 is supported (Please, see Figure 2).

To evaluate the remaining hypotheses, an alternative structural model was developed incorporating eco-friendly behavior (EFB) as a mediating variable. The results of this mediated model reveal that GHRM significantly predicted eco-friendly behavior ($\beta = 0.95$, $p < 0.01$), thus supporting H2. Furthermore, the mediator variable EFB demonstrated a significant positive effect on environmental performance ($\beta = 0.67$, $p < 0.01$), confirming H3.

Notably, when the mediator variable EFB was introduced into the model, the direct relationship between GHRM and environmental performance became insignificant ($\beta = 0.00$, $p > 0.05$). This result suggests full mediation, indicating that the effect of GHRM on environmental performance operates entirely through eco-friendly behavior. Collectively, GHRM and EFB accounted for 45% of the variance in environmental performance, highlighting the substantial explanatory power of the model.

The model fit indices demonstrate that the structural model achieved an acceptable fit with the data, aligning with established thresholds in the literature. Specifically, the fit

indices are as follows: $\chi^2 = 333.54$, $p < 0.01$; $\chi^2/df = 4.37$; comparative fit index (CFI) = 0.95; root mean square error of approximation (RMSEA) = 0.09; standardized root mean square residual (SRMR) = 0.06. These values collectively indicate a well-fitting model, consistent with theoretical expectations and prior empirical findings. This robust statistical performance underscores the validity of the hypothesized relationships and the overall adequacy of the proposed structural model [78].

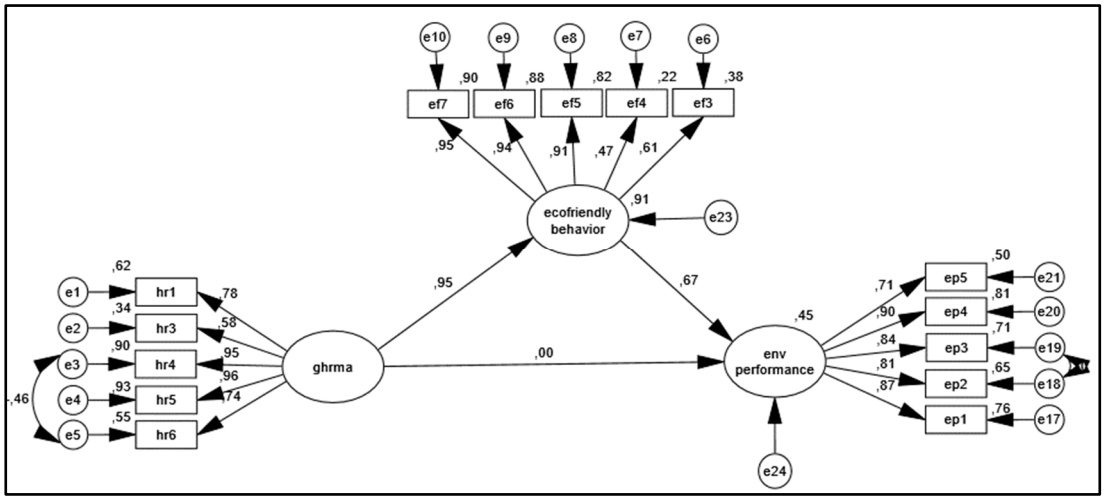


Figure 2. The research structural model.

4.1. Mediation Analyses

To examine whether EFB mediates the relationship between GHRM and EP, a path analysis was conducted using the bootstrap method. This analysis employed 5000 resamples to enhance the robustness and reliability of the mediation effect assessment. For the research hypothesis to be supported, the 95% confidence interval (CI) derived from the bootstrap analysis must not include zero. The findings from the bootstrap analysis revealed that the impact of GHRM on EP was statistically significant (B = 0.64, 95% CI [0.107, 0.201]). As the lower and upper bounds of the confidence interval, calculated via the percentile method, did not contain zero, these results confirm the mediating role of EFB in the relationship between GHRM and EP. Consequently, hypothesis H4 is supported. The results of the structural equation modeling (SEM) analysis are depicted in Figure 3, providing a visual representation of the mediating pathway and its significance.

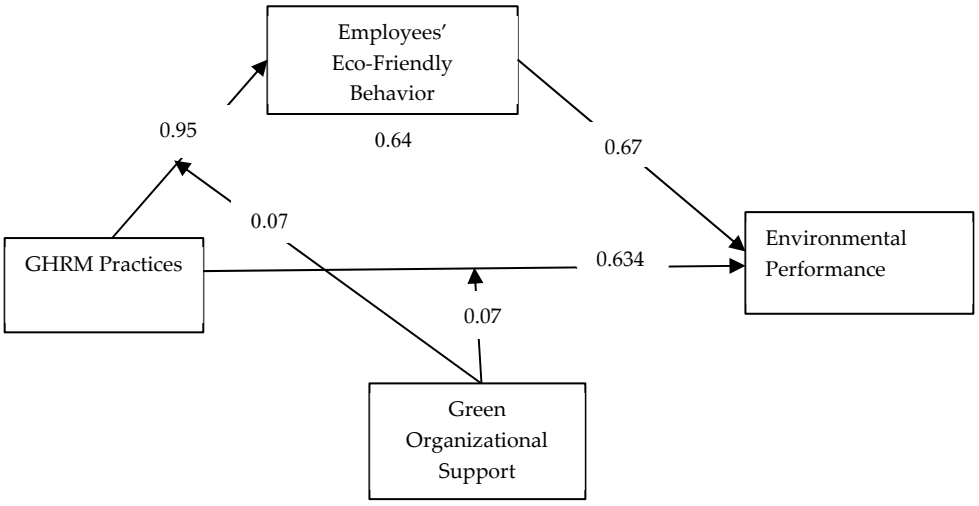


Figure 3. SEM analysis results.

4.2. Moderation Analyses

Moderation occurs when the relationship between two constructs varies based on the values of a third variable, termed the moderator. This moderator influences the strength or direction of the relationship between the independent and dependent variables within a model [79]. The two primary approaches to moderation analysis are multi-group analysis (MGA) and simple moderation analysis. When the moderator variable is categorical, such as industry type or nationality, MGA is the preferred technique, as it examines differences in all structural paths across groups. In contrast, when the moderator is continuous, as in the case of green organizational support (GOS), simple moderation analysis is more appropriate for testing its influence on specific structural paths [79,80].

In this study, GOS was hypothesized to moderate the relationships between green human resource management (GHRM) and two outcomes: environmental performance (EP) and eco-friendly behavior (EFB). Given that GOS is a continuous variable, a simple moderation analysis approach was employed, which is suited for examining interactions on specific paths with theoretical support [80]. The analysis was conducted using SPSS Amos 24, leveraging its capabilities for path analysis and interaction term computation. Standardization of predictive and moderating variables was performed prior to analysis to ensure interpretability of the results.

4.2.1. Results of Moderation Analysis

For the first model, where hypothesis H5 posited that GOS moderates the relationship between GHRM and EP, path analysis revealed that the model accounted for 43% of the variance in EP ($R^2 = 0.43$). The results demonstrated significant direct effects of GHRM on EP ($\beta = 0.27$, $p < 0.001$) and GOS on EP ($\beta = 0.42$, $p < 0.001$). However, the interaction term representing the moderating effect of GHRM and GOS on EP was not statistically significant ($\beta = -0.07$, $p > 0.05$). As such, hypothesis H5 was not supported. These findings are visualized in Figure 4, and the detailed regression results are presented in Table 6.

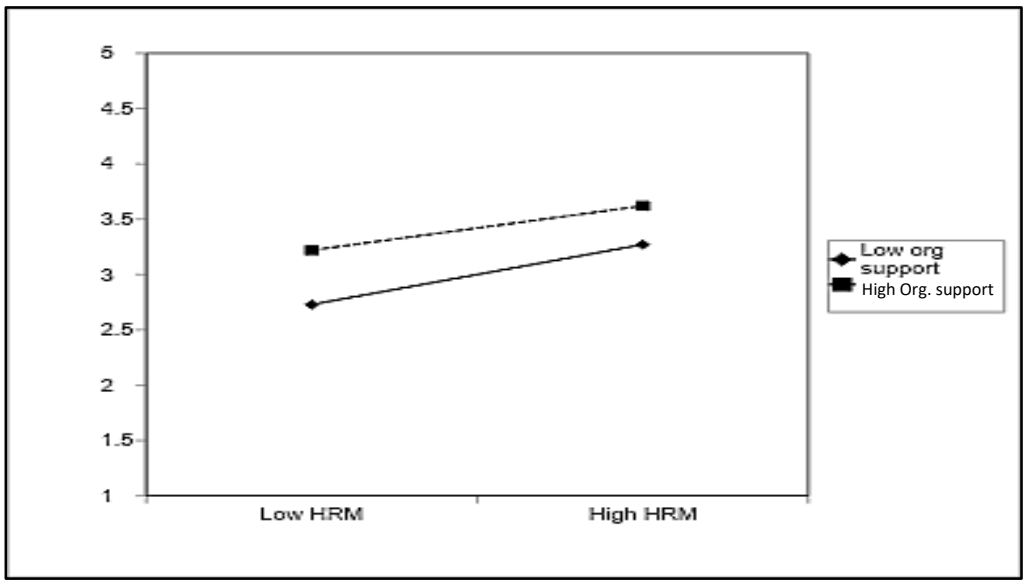


Figure 4. The moderating role of GOS in the GHRM–EP relationship (H5).

For the second model, hypothesis H6 proposed that GOS moderates the relationship between GHRM and EFB. The analysis indicated that the variables explained 69% of the variance in EFB ($R^2 = 0.69$). The path analysis revealed significant direct effects of GHRM on EFB ($\beta = 0.71$, $p < 0.001$) and GOS on EFB ($\beta = 0.20$, $p < 0.001$). Furthermore, the interaction term for GHRM and GOS on EFB was significant ($\beta = 0.07$, $p < 0.05$), providing support

for hypothesis H6. These findings are graphically illustrated in Figure 5, with detailed regression results available in Table 7.

Table 6. Regression analysis results show the moderator effect of GOS on the relationship between GHRM and EP. (n = 346).

Variables	*B*	*SE*	*t*
GHRM (X)	0.27	0.080	4.33
Org support (W)	0.42	0.052	7.33
X.W	0.07	0.048	−3.26
$R^2 = 0.43$. $p < 0.05$			

Note: $p < 0.001$. $p < 0.01$. $p < 0.05$. *SE*: Standard error. Standardized beta coefficients are reported.

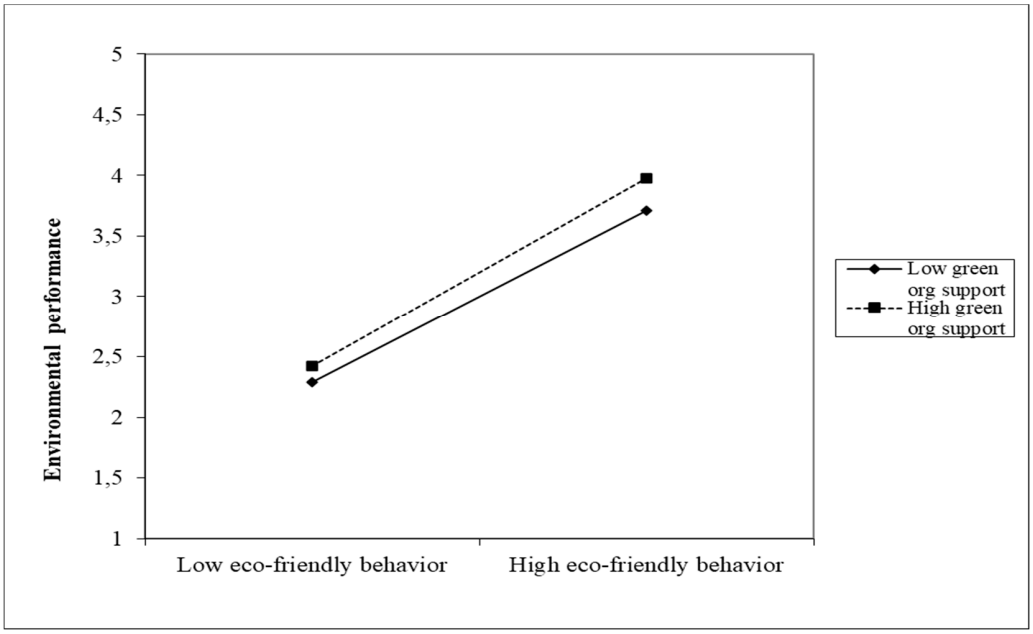


Figure 5. Hypothesis H6: Green organizational support moderates the effect of GHRM on employees' eco-friendly behavior.

Table 7. Regression analysis results show the moderator effect of GOS on the relationship between GHRM and EFB. (n = 346).

Variables	*B*	*SE*	*t*
GHRM (X)	0.71	0.080	4.33
Org support (W)	0.20	0.052	7.33
X.W	0.07	0.048	−3.26
$R^2 = 0.69$. $p < 0.001$			

Note: $p < 0.001$. $p < 0.01$. $p < 0.05$. *SE*: Standard error. Unstandardized beta coefficients (B) are reported.

4.2.2. Theoretical Justification for the Approach

The choice of simple moderation analysis is grounded in its suitability for continuous moderators with expected influences on specific paths, guided by theoretical support. Memon et al. [79] emphasize that such analysis is ideal for models focusing on path-specific interactions rather than the entire structural model [80]. Furthermore, the inclusion of GOS as a moderator is supported by prior studies identifying its critical role in strengthening green practices and sustainability outcomes in organizations [80].

5. Discussion

This study examined six hypotheses to explore the relationships between green human resource management (GHRM) practices, employees' eco-friendly behaviors (EFB), green organizational support (GOS), and environmental performance (EP) in Turkey's hospitality sector. The findings support five out of the six proposed hypotheses, advancing theoretical and practical understanding in the field of sustainability.

5.1. Direct Relationships

The results confirm the positive influence of GHRM practices on EP (H1), aligning with prior studies that highlight GHRM as a key driver of environmental performance in resource-intensive industries like hospitality [51]. This finding underscores the potential of GHRM initiatives to align organizational objectives with sustainable practices.

The study also supports the positive relationship between GHRM and EFB (H2), reflecting the role of GHRM practices in promoting employees' environmentally conscious actions. Furthermore, EFB significantly enhances EP (H3), reaffirming existing research that emphasizes employee-driven sustainability as a critical component of organizational environmental outcomes [41,42,45,47]. These results contribute to the growing evidence that fostering eco-friendly behaviors among employees is instrumental in achieving broader sustainability goals.

5.2. Mediating Effects

The mediating role of EFB in the relationship between GHRM practices and EP (H4) was supported. This finding highlights the centrality of employee attitudes and behaviors in realizing the potential benefits of GHRM initiatives. The mediating effect illustrates how EFB facilitates the implementation of GHRM practices, aligning with the existing literature that identifies employee engagement as a determinant of successful sustainability efforts [15,37,46].

5.3. Moderating Effects

Two hypotheses examined the moderating role of GOS. The study confirms that GOS moderates the relationship between GHRM and EFB (H6). Employees are more likely to exhibit eco-friendly behaviors when they perceive organizational support for their sustainability efforts, which reinforces the critical role of GOS in enhancing the effectiveness of GHRM practices [18,48,49]. However, the moderating role of GOS in the relationship between GHRM and EP (H5) was not supported. While theoretically plausible, this finding suggests that the high mediating effect of EFB may overshadow the direct influence of GOS on EP. The average score for EFB was observed to be 0.29 points higher than that for EP, indicating that employees' eco-friendly behaviors may act as a more significant conduit for achieving environmental performance than direct organizational support.

5.4. Theoretical and Practical Implications

The findings provide a novel contribution to the GHRM literature by demonstrating the mediating role of EFB and the moderating influence of GOS in the Turkish hospitality context, a region underexplored in sustainability research. The results emphasize the importance of integrating employee behaviors into organizational sustainability frameworks, reinforcing the role of GHRM practices in promoting environmental outcomes.

This study integrates the Ability–Motivation–Opportunity (AMO) framework and the Resource-Based Theory (RBT) to highlight the strategic interplay between organizational resources and employee capabilities in fostering sustainability. The AMO framework underscores the significance of employees' abilities, motivation, and opportunities in driving

discretionary eco-friendly behaviors, which aligns closely with the findings of this research. By positioning employee engagement and capability-building processes at the core of sustainability initiatives, the AMO framework provides a robust basis for understanding the mechanisms through which green human resource management (GHRM) influences environmental performance (EP).

Similarly, the RBT emphasizes the strategic importance of human and organizational capital as critical resources for achieving long-term environmental performance. This theoretical lens advocates for significant investment in GHRM practices, recognizing them as key drivers of competitive advantage and organizational sustainability. Future research could delve deeper into the convergence of these frameworks to establish GHRM as a cornerstone for competitive and sustainable organizational behavior. Such efforts would further elucidate the dynamic interconnections between organizational resources, employee actions, and environmental outcomes.

Practically, organizations should prioritize GHRM strategies that actively engage employees in sustainability initiatives. Additionally, fostering a supportive organizational culture through GOS can enhance the efficacy of these strategies, particularly in encouraging eco-friendly behaviors. The study underscores the necessity of tailoring GHRM practices to specific industry contexts, such as hospitality, where resource utilization and environmental impact are critical considerations.

The findings of this study offer actionable insights for the Turkish hospitality sector, which is characterized by resource-intensive operations and growing environmental challenges. The following strategies are recommended:

Holistic Implementation of GHRM Practices

Organizations should adopt an integrated approach to GHRM by combining green-focused training programs, performance management systems, and employee engagement initiatives. These efforts would not only enhance employees' awareness of sustainable practices but also encourage active participation in achieving environmental goals.

Fostering a Green Organizational Climate

Establishing a psychological climate that supports and values eco-friendly behaviors is essential for amplifying the effectiveness of GHRM practices. This can be achieved by promoting leadership commitment to sustainability, rewarding eco-friendly initiatives, and embedding environmental values into organizational culture.

These strategies are instrumental in enhancing environmental sustainability while simultaneously strengthening organizational reputation and competitiveness. In a global market increasingly prioritizing green standards, adopting these practices enables organizations to meet evolving consumer expectations and regulatory requirements, thereby securing long-term success.

6. Conclusions

This study advances the discourse on green human resource management (GHRM) by systematically examining its impact on environmental performance (EP) and eco-friendly behavior (EFB) within the context of the Turkish hospitality sector. By incorporating theoretical frameworks such as the Ability–Motivation–Opportunity (AMO) framework and the Resource-Based Theory (RBT), the research offers a nuanced understanding of how organizational strategies and employee behavior converge to achieve sustainability goals. Specifically, the study highlights the mediating role of EFB in the GHRM–EP relationship and the moderating influence of green organizational support (GOS) on the GHRM–EFB nexus, thereby providing critical insights into the mechanisms underlying sustainable organizational practices.

The findings of this research have both theoretical and practical implications. Theoretically, the study bridges significant gaps in the GHRM literature by extending its application to the Turkish hotel industry, a region and sector where sustainability challenges are particularly acute. While much of the extant research has been concentrated in Asian contexts, this study provides empirical evidence from an emerging economy, underscoring the global relevance of GHRM strategies. Furthermore, integration of the AMO and the RBT frameworks enriches the theoretical foundation of GHRM by demonstrating how organizational resources and employee capabilities can be strategically aligned to enhance sustainability outcomes.

Practically, the findings offer actionable guidance for industry practitioners seeking to implement effective GHRM strategies. The demonstrated impact of GHRM on EP and EFB underscores the importance of embedding sustainability into core HR functions, including recruitment, training, performance management, and employee engagement. Moreover, the significant role of GOS in facilitating eco-friendly behavior highlights the need for organizations to cultivate a supportive organizational climate that empowers employees to adopt sustainable practices. This dual emphasis on structured HR interventions and organizational support provides a robust framework for driving sustainability in resource-intensive industries such as hospitality.

The study also sheds light on the interplay between micro-level (employee behavior) and macro-level (organizational practices) dynamics in achieving sustainability objectives. This multi-level perspective is critical in an era where environmental accountability has become a key determinant of organizational success. The findings suggest that sustainable practices are not only a moral and environmental imperative but also a strategic lever for enhancing competitiveness, reputation, and long-term viability in the global market.

Despite its contributions, the study is not without limitations, which pave the way for future research. The cross-sectional design, while providing valuable insights into variable relationships, does not capture the temporal dynamics of GHRM practices and their long-term effects. Future research could adopt longitudinal approaches to explore these effects over time. The workload in the hospitality sector varies significantly with seasonal changes, potentially influencing employees' perceptions of GHRM practices. Conducting similar research during both high and low workload periods could offer deeper insights into the trends and shifts in employee perceptions. Furthermore, relationships in organizational settings are often too complex to be fully explained by two variables alone. Identifying and testing additional mediating and moderating variables would enrich the research model. In this study, the mediating role of EFB and the moderating role of GOS were examined. Future researchers could replicate the study by incorporating different mediators and moderators to broaden understanding.

Additionally, while this research focuses on the Turkish hospitality sector, comparative studies across various countries and industries would enhance understanding of the universal applicability and context-specific differences and similarities of GHRM practices.

In conclusion, this research underscores the transformative potential of GHRM as a strategic tool for fostering environmental sustainability. By highlighting the mediating role of EFB and the moderating influence of GOS, it reveals the critical mechanisms through which GHRM practices influence organizational and environmental outcomes. Beyond contributing to the academic discourse on sustainable HRM, the study offers a practical roadmap for organizations navigating the intricate interplay of economic, social, and environmental imperatives.

As global emphasis on sustainability continues to intensify, the insights generated from this research provide a valuable foundation for advancing both theory and practice in the pursuit of a more sustainable future.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets presented in this article are not readily available because the data are part of an ongoing study.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A Measurement Scales

Green human resources management scale

	Items
1	My hotel provides adequate training to promote environmental management as a core organizational value
2	My hotel considers how well employees are doing at being eco-friendly as part of their performance appraisals
3	My hotel relates employees' eco-friendly behavior to rewards and compensation
4	My hotel considers the personal identity–environmental management fit in recruitment and selection
5	Employees fully understand the extent of corporate environmental policy
6	My hotel encourages employees to provide suggestions on environmental improvement

Work engagement scale

	Items
1	My environmental-related tasks inspire me
2	I am proud of the environmental work that I do
3	I am immersed in my environmental work
4	I am enthusiastic about my environmental tasks at my job
5	I feel happy when I am working intensely on environmental tasks
6	With environmental tasks at my job, I feel bursting with energy

Environmental performance scale

	Environmental management within our hotel has…
1	Reduced wastes
2	Conserved water usage
3	Conserved energy usage

4	Reduced purchases of non-renewable materials, chemicals, and components
5	Reduced overall costs
6	Improved its position in the Marketplace
7	Helped enhance the reputation of our hotel

Employees' eco-behavior scale

	Items
1	Before I get off work, I turn off the electric appliances, such as computers, TV monitors, etc.
2	When I leave a room that is unoccupied, I turn off the light
3	I sort and recycle garbage in the workplace
4	I conserve materials at work
5	I reuse materials at work
6	I limit water use in toilets to save water
7	I pay close attention to water leaks

Green organizational support scale

	Items
1	Our hotel values my contribution to green management issues
2	Our hotel really considers my environmental values and goals
3	Our hotel cares about my opinions on green management issues
4	Our hotel takes pride in my accomplishments on green management issues
5	Our hotel would ignore any complaint from me on green management issues
6	Our hotel values extra effort from me on green management issues
7	Our hotel cares about my satisfaction with green management

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