

## How Green HRM Drives Hospitality Organizations Towards a Sustainable Future? Moderation Effect of Environmental Proactivity

كيف تقود إدارة الموارد البشرية الخضراء مؤسسات الضيافة نحو مستقبل مستدام؟ التأثير المُعدل للاستباقية البيئية

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### Abstract

الملخص

This paper addresses a significant gap in the existing literature by investigating the pivotal role of green HRM in promoting sustainability within the hotel setting. Further, this paper explores the mediating effect of organizational culture and the moderation effect of employee environmental proactivity. A structured questionnaire was administered to 369 frontline employees across 35 five-star hotels in Alexandria, Greater Cairo and Sharm El sheikh. The results proved a positive nexus between green HRM and organizational sustainability through the partial mediation of organizational culture. Further, employee environmental proactivity strengthened the nexus between organizational culture and both green HRM and organizational sustainability. This paper promises to offer valuable insights for the Egyptian hotel industry, indicating how green HRM can drive sustainability and contribute to competitive advantages in an increasingly environmentally conscious world. Accordingly, our findings recommend that hospitality organizations incorporate employee attitudes that drive organizational green management and foster a culture of rewarding employees for their environmentally conscious behavior, which has the potential to change overseas customers' perceptions of Egyptian hotel settings and their services.

يتناول البحث فجوة ملحوظة في الأدبيات الحالية من خلال التحقق من الدور المحوري لإدارة الموارد البشرية الخضراء في تعزيز الاستدامة داخل السياق الفندقي. علاوة على ذلك، تستكشف الدراسة التأثير الوسيط للثقافة التنظيمية والتأثير المُعدل للاستباقية البيئية للموظفين. تم إجراء استبيان منظم على 369 موظفًا بأقسام الخطوط الأمامية داخل 35 فندقًا من فئة الخمس نجوم في القاهرة الكبرى، شرم الشيخ ودهب. كشفت النتائج عن وجود علاقة إيجابية بين إدارة الموارد البشرية الخضراء والاستدامة التنظيمية من خلال الوساطة الجزئية للثقافة التنظيمية. علاوة على ذلك، عززت الاستباقية البيئية للموظفين العلاقة بين الثقافة التنظيمية وكل من إدارة الموارد البشرية الخضراء والاستدامة التنظيمية. تقدم الدراسة رؤى قيمة لصناعة الفنادق المصرية، مما يشير إلى كيف يمكن لإدارة الموارد البشرية الخضراء أن تدفع الاستدامة وتساهم في تحقيق ميزة تنافسية في عالم يزداد وعيه بيئيًا. بناءً على ذلك، توصي النتائج التي توصلنا إليها بأن تقوم منظمات الضيافة بدمج مواقف الموظفين التي تدفع الإدارة التنظيمية الخضراء وتعزز ثقافة مكافأة الموظفين على سلوكهم الواعي بيئيًا، والذي لديه القدرة على تغيير تصورات العملاء حول سياق الفنادق المصرية وخدماتها.

**Keywords:** Five-Star Hotels, Organizational Culture, Environmental Proactivity, Organizational Sustainability, Green HRM

**الكلمات الدالة:** فنادق الخمس نجوم، الثقافة التنظيمية، الاستباقية البيئية، الاستدامة التنظيمية، إدارة الموارد البشرية الخضراء

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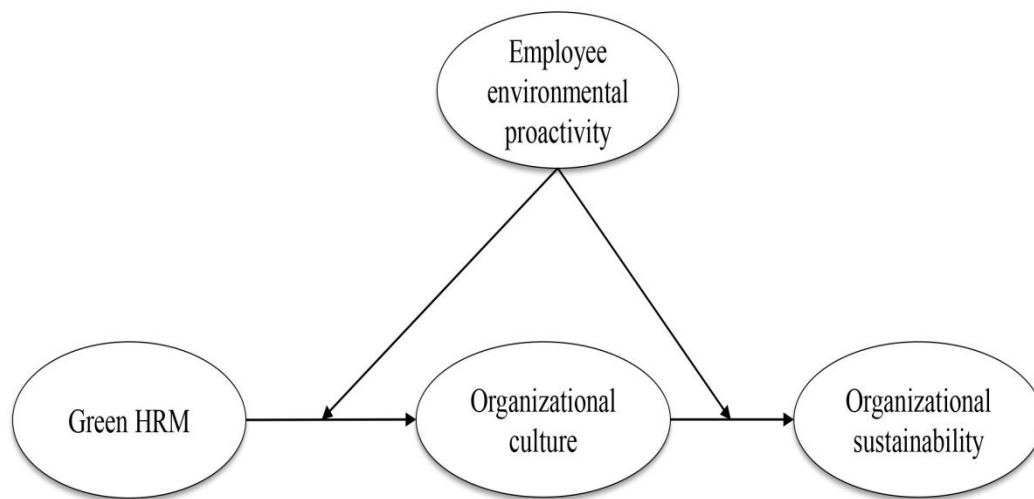
## 1. Introduction

Environmental challenges have raised worries about the sustainability of organizations globally in recent years (Ahmad, Yaqub & Lee, 2024), particularly in light of environment devastations caused by industrial revolutions (Jian et al., 2020). In the existing hospitality environment, an eco-friendly brand image has emerged as a crucial component that unifies technological adoption, procedures, and systems (Bouteraa, Raja Hisham & Zainol, 2023). Green organizations have been seen to have more sustainable business practices than their conventional rivals (Allal-Chérif, Climent & Berenguer, 2023). According to the hospitality literature, the hotel sector in developing nations has a variety of environmental issues (Selem, Sigala, Shoukat, Shehata & Mkheimer, 2023). As a result, hotel businesses must evaluate, track, and enhance management-related operations (Leyva & Parra, 2021).

On the other hand, eco-friendly services have grown to be crucial elements of modern organizations, technology adoption strategies, and operational system development (Abdullah & Lim, 2023). Therefore, hotel organizations that adopted sustainable practices showed competitive edges in terms of high earnings and cost savings (Kuo, Fang, & LePage, 2022). Adopting green HRM strategies can provide additional benefits for a healthy life and an environment free of pollution (Sathasivam, Abu Bakar, & Che Hashim, 2021). Employing green techniques in hospitality operations benefits society as a whole and demonstrates how socially conscious hotels can be (Floričić, 2020). Green management method adoption and promotion in hospitality businesses is crucial given escalating environmental concerns (Kuo et al., 2022).

Recent studies have demonstrated that the hospitality sector in developing nation's faces a variety of environmental issues and those hotels need to be actively involved in evaluating and improving management-related practices (see Abdullah & Lim, 2023; Bouteraa et al., 2023). Presently, hospitality organizations are viewed as having a major duty to society when it comes to environmental, social, and economic sustainability when it comes to environmental protection initiatives (Yousaf, Radulescu, Nassani, Aldakhil & Jianu, 2021). As a vital tactic for putting green HRM practices into practice that accomplish sustainable development, hotel businesses are more inclined to embrace green HRM (Irani, Kiliç & Adeshola, 2022). Numerous scholarly works have examined the influence of environmental proactive measures on hotel outcomes, yielding varying conclusions (Ghani, Mubarik & Memon, 2024; Olayeni, Ogbo, Okwo, Chukwu, Ifediora, & Ezenwakwelu, 2021; Patwary, Mohd Yusof, Bah Simpong, Ab Ghaffar & Rahman, 2023).

Recent studies found no obvious association or consider environmental proactivity to have detrimental impacts, while others feel that environmental proactivity has significant benefits (Do & Nguyen, 2020; Song, Peng, Shang, & Zhao, 2022). Song et al. (2022) suggested that the lack of homogeneity in environmental proactivity and hotel outcomes used (e.g., sales growth and customer satisfaction) may be one of the primary causes of any conclusive results. To bridge this gap, this paper pursues three objectives, as follows: 1) exploring the extent to which green HRM contributes to organizational culture; 2) encouraging organizational sustainability via frontline employees' environmental culture; and 3) fostering green organizational culture and green HRM through the boundary effect of employee environmental proactivity. Accordingly, Figure 1 highlights exploring the nexus between green HRM and organizational culture and the latter effect on organizational sustainability in the Egyptian hotel context, as well as examining the pivotal role of employee environmental proactivity as follows:



**Figure 1.** Research model.

## 2. Literature review

### 2.1. Green HRM

To achieve environmental sustainability inside hotel organizations, green HRM stands for strategic HRM practices in the creation and implementation of environmental business strategies (Napathorn, 2022). To balance HRM policies, practices, and activities with environmental management, green HRM uses a balanced viewpoint (Ari, Karatepe, Rezapouraghdam & Avci, 2020). The broader organizational green management objectives are served by green HRM practice activities, including green performance management, hiring and selection, training, and pay and incentive (Vázquez-Brust, Jabbour, Plaza-Úbeda, Perez-Valls, de Sousa Jabbour & Renwick, 2023). It is important for HRM to establish a green corporate culture (Muisyo & Qin, 2021), as it plays a crucial role in shaping employee behaviors during the hiring and training processes (Napathorn, 2022). To successfully accomplish hotel organizations' environmental goals through positive employee attitudes and behaviors, green HRM entails the systemic, intentional alignment of traditional HRM practices (Obeidat et al., 2023). Environmental management may be implemented in a company and promoted with green HRM principle usage as a pivotal tool (Ojo, Tan, & Alias, 2022).

### 2.2. Organizational culture

Organizational theories were the best ways to manage organizations in the late 1960s and early 1970s. Organizational culture theory evolved in this setting and has grown to be a debated subject in academia and a key theoretical component throughout time. However, the existing literature has failed to provide an accepted definition of organizational culture. The reasons for this variation in definitions might be attributed to various sets of values, the topics being addressed, or the viewpoints of the researchers. Within an organization, common values are highlighted in most organizational culture definitions.

Aiming to attain established principles and values that the organization's members aspire to, such as price leadership or product quality, Deal and Kennedy's method centers on the suggested ideals. A three-level culture framework that links and shapes the fundamental beliefs and values of organizational culture was presented. These levels are, namely: productions (i.e., stands for people's beliefs about reality and human behaviors); values (i.e., stands for how people should relate to one another and reasons behind their behaviors); and the third, basic underlying assumptions (i.e., stands for the most obvious cultural responses). Accordingly, organizational culture aids in shaping the tactics used by hotel businesses to gain competitive edge. By promoting hotel sustainability, green

culture engages all employees in the sharing of green ideals. When it comes to integrating environmental management and practices into HRM operations, environmental awareness issues affect HR functions. Hence, this research proposes that:

*H1. Green HRM positively affects organizational culture.*

### *2.3. Organizational sustainability*

According to Mahmoud, Gaafar and Zeid (2022), organizations that are sustainable may raise living standards for their constituents, provide better job opportunities, and establish their reputation. In this regard, sustainability is a method for increasing stakeholder value over the long run by putting into practice a business plan (Ketprapakorn & Kantabutra, 2022) that prioritizes sociological, environmental, cultural, and financial components of organizations (Bolis, Morioka, Leite & Zambroni-de-Souza, 2021). According to Miceli, Hagen, Riccardi, Sotti and Settembre-Blundo (2021), organizational sustainability is what keeps an organization operating. Similarly, Al Aina and Atan (2020) confirmed that sustainable businesses improve its stakeholder lives and increases profits for its investors, all while preserving natural orders.

According to dos Santos, Méxas, Meirino, Sampaio and Costa (2020), organizational sustainability requires integrating all three elements—economic, ecological, and societal—into hospitality management to guarantee sustainable practices over the long term. In this paper, organizational sustainability is defined from employee lens as a combination of three dimensions that guarantee the triple goal of being economically viable, and socially valuable, emphasizing a win-win strategy for hotels and their society. Hence, this research proposes that:

*H2. Organizational culture positively affects organizational sustainability.*

*H3. Organizational culture mediates the nexus between green HRM and organizational sustainability.*

### *2.4. Employee environmental proactivity*

The focus on natural resources paradigms that have been used to try to understand what influences employee environmental proactivity (Gomes Silva, Kirytopoulos, Pinto Ferreira, Sá, Santos and Cancela Nogueira, 2022). By strategically managing organization-environment interaction, the natural resource-based perspective of hotel businesses aims to explain how competitive corporate advantages evolve (Shaukat, Zaman, Nga, and Souvanhxay, 2023). According to this theory, an organization's capacity to deal with the increasing constraints imposed by the biophysical environment will determine when valuable, uncommon, and imperfectly imitable capabilities that yield better economic and social outcomes emerge (D'Ambra, 2024; Gomes Silva et al., 2022).

Consequently, environmental proactivity can serve as a source of long-term competitive advantages (Mishra & Yadav, 2021). This can be achieved through cost reduction, product differentiation, or opening up of new business opportunities (Shah & Soomro, 2021). Tarifa-Fernández, Céspedes-Lorente and de Burgos Jiménez (2023) affirmed the nexus between environmental proactivity and its outcomes, which is the ultimate goal and purpose of environmental management; doing otherwise would be futile. Conversely, there is a less evident correlation between environmental proactivity and sustainable outcomes in the service sector (Shah & Soomro, 2021). As such, the hospitality sector has actually seen little research done to determine the factors that give this business a competitive edge in terms of employee environmental proactivity (Kuo et al., 2022). Hence, this research proposes that:

*H4a. Employee environmental proactivity strengthens the nexus between green HRM and organizational culture.*

*H4b. Employee environmental proactivity strengthens the nexus between organizational culture and organizational sustainability.*

### **3. Methods**

#### *3.1. Data collection and sampling*

This paper is cross-sectional by design since the dataset was collected from five-star hotels in Egypt at a certain moment in time (Khdour, 2021). As per their usual operational standards, most hotels favored online responses obtained via Google links. The survey links were distributed in both Arabic and English. To control the process of filling out the questionnaires, one supervisor in each selected hotel was trained to communicate with his subordinates via WhatsApp or Telegram in their groups. He/she informed them of the purpose of this survey and that their response would benefit the hotel sector in achieving Egypt's 2030 vision.

Between March and April 2024, 500 frontline employees—that is, restaurant, front-office, and housekeeping employees—at 35 five-star hotels (9 in Alexandria, 16 in Greater Cairo and 10 in Sharm Elsheikh) answered this survey. Such employees were selected because they have direct contact with customers in guiding them towards environmental sustainability (Al-Hawari, Quratulain & Melhem, 2021). These hotels were chosen because they most use environmental management strategies and go green (Al-Hawari et al., 2021), and they also have the largest number of employees, including recent graduates and middle-aged youth, coming from various regions of Egypt (Selem et al., 2023). Moreover, these cities have many tourist attractions and are considered tourist destinations during summer and winter seasons for expatriates and residents (Mkheimer, Selem, Shehata, Hussain & Perez Perez, 2023). Therefore, 372 questionnaires were returned, yielding a 74.4% response rate.

Next, SPSS v.28 was employed to clean the collected dataset. After data cleaning, missing values and non-completed responses were eliminated, resulting in a final response of 369. Frontline employees' input was gathered using a simple random sampling approach to help shape and execute sustainability plans by helping to build green service improvement metrics (Ahmad, Yaqub & Lee, 2023). In this regard, international hotel brands coexist in Egypt's hospitality industry, which plays a significant role in the nation's GDP and national income (Selem et al., 2023). This industry operates in a more competitive, complicated, and unpredictable setting (Mkheimer et al., 2023). Based on the thumb rule published by Hair, Sarstedt, Ringle and Mena (2012), the minimum sample size required to achieve this paper's objectives was 270 ( $32 \times 5$ ). Five times the whole quantity of survey items. As a result, 369 responses were judged enough for further analysis to be conducted.

#### *3.2. Measurements*

Four professors from two public universities and high institutes, In addition to experts from first-class hotels assessed each measure representativeness and appropriateness to determine its validity. Next, this instrument's face-validity in terms of its item readability and clarity was evaluated. In this paper, 32 items were relied upon to assess measuring variables extracted from previous studies related to the hospitality sector's orientation towards environmental sustainability from its employee perspective. Green HRM was gauged with five items, developed from Aboramadan and Karatepe (2021). Six items were employed to assess organizational culture, modified from Shahriari, Tajmir Riahi, Azizan and Rasti-Barzoki (2023). Organizational sustainability was measured using nine items derived from Mahmoud et al. (2022). To assess employee environmental proactivity, 12 items were

adopted from Barba-Sánchez and Atienza-Sahuquillo (2016). A 7-Likeret point scale was conducted on all measuring items.

### 3.3. Analysis technique

The variance inflation factor (VIF) values should be less than 3.3 at the factor level to verify the absence of common method variance (CMV) (Kock, 2021). To complete this objective, partial least squares (PLS)-SEM was employed. The PLS algorithm's results verified that each item was less than 3.3 (Ghasemy, Jamil & Gaskin, 2021). Furthermore, principal component analysis without rotation was run to perform Harman's single-factor test. Results proved that none of the factors created could account for more than 50% of the variation (Podsakoff, Podsakoff, Williams, Huang, & Yang, 2024), indicating that CMV was not a problem. The variance-based strategy, known as PLS-SEM (Kock, 2021), was applied. Its goal is to predict and maximize the explained variation in outcome variables (Guenther, Guenther, Ringle, Zaefarian & Cartwright, 2023). Furthermore, the use of PLS is justified because this paper is exploratory and seeks to assess novel associations (Richter & Tudoran, 2024). According to Richter, Hauff, Ringle, Sarstedt, Kolev and Schubring (2023), PLS-SEM has also been suggested for intricate models with several structures and interactions.

## 5. Results

### 4.1. Respondent profile

Table 1 presents the demographic characteristics of the respondents. The majority were males (83.7%), implying that the hospitality workforce in this context is predominantly male, possibly due to cultural or industry-specific factors. Regarding age, 45.5% of the respondents were between 35–44 years old, indicating a mature workforce with significant experience. Educationally, 99.2% of respondents had a bachelor's degree, showing a high level of education among the employees, which may contribute to better understanding and implementation of green HRM practices. Most respondents (33.6%) had 3–4 years of job experience, suggesting that a considerable portion of the workforce is relatively experienced but not overly senior. In terms of departmental affiliation, 41.5% of respondents worked in the front-office department, followed by 30.9% in the restaurant department, proving that these two departments constitute a large part of the workforce engaged in customer interaction and sustainability practices.

**Table 1.** Demographic characteristics

Characteristics	Category	N = 369	
		Frequency	%
Gender	Male	309	83.7
	Female	60	16.3
Age (years)	Below 21	39	10.6
	21-34	86	23.3
	35-44	168	45.5
	45 and more	76	20.6
Education	Diploma	0	0
	High school	3	0.8
	Bachelor	366	99.2
Job experiences (years)	Below 3	87	23.6
	3-4	124	33.6
	5-6	88	23.8
	7-8	48	13.0

	9 and more	22	6.0
Affiliated department	Restaurant	114	30.9
	Front-office	153	41.5
	Housekeeping	102	27.6

4.2. Outer model

Cronbach’s alpha, composite reliability (CR) and indicator reliability were used to assess the measurement model (see Figure 2). Factor loadings were higher than 0.70 for each item (Guenther et al., 2023). Besides, all constructs’ CR and Cronbach’s alpha values were higher than the 70% threshold, indicating construct reliability (Cho, Kim, Lee, Hwang, Sarstedt & Ringle, 2023). Next, average variance extracted (AVE), which shows the common variance between a construct and its item was employed to assess convergent validity (Nasution, Fahmi & Prayogi, 2020). Convergent validity is confirmed by all constructs (see Table 2) have AVE values greater than 50% (dos Santos & Cirillo, 2023).

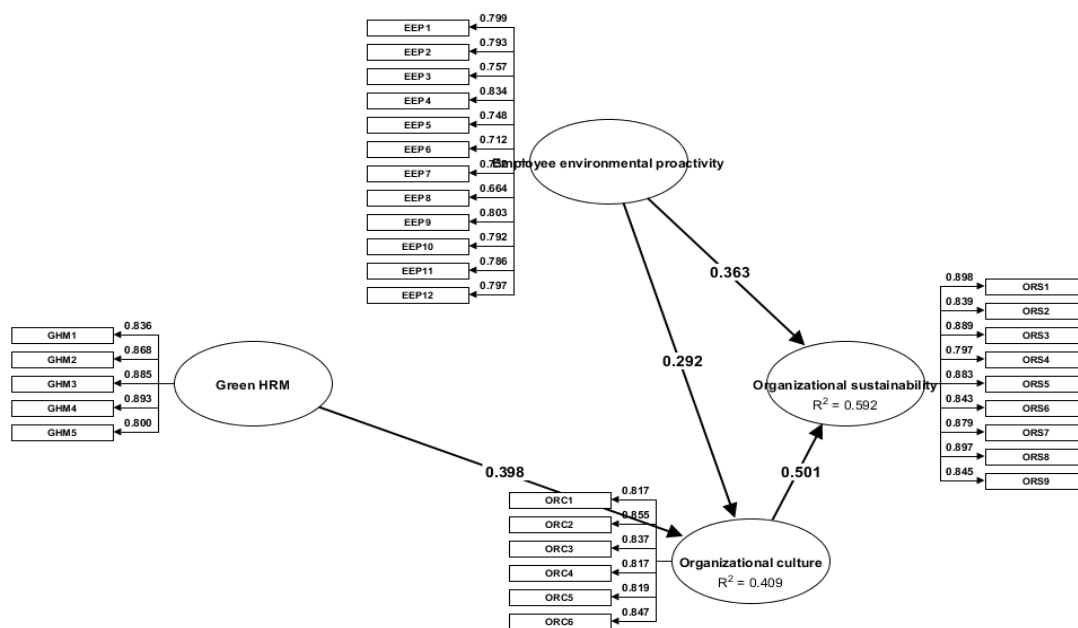


Figure 2. Measurement model findings

The heterotrait-monotrait (HTMT) technique was performed to evaluate discriminant validity, which verifies that each construct possesses unique characteristics that set it apart from other constructs (Guenther et al., 2023). This technique was used, which involves calculating the ratio of constructs to within-construct correlation. According to Nasution et al. (2020), HTMT scores must be less than 0.85 to demonstrate the discriminant validity of the conceptual framework’s notions. Table 3 shows that all HTMT values were less than 0.85 to account for HTMT 0.85 values, validating the discriminant validity.

Table 2. Reliability and validity

Constructs	Code	Items	Indicator loadings	Composite reliability (CR)	Cronbach’s alpha	Average variance extracted (AVE)
Green HRM	GHM1	Green values, sensitivity, and expertise are qualities that our hotel looks for in candidates.	0.836	0.933	0.909	0.735
	GHM2	Green skills and habits are developed in our hotel employees through green training programs.	0.868			

	GHM3	Through performance management procedures, our hotel assesses the environmentally friendly actions of its employees.	0.885			
	GHM4	This hotel offers its employees the chance to engage in environmentally conscious practices.	0.893			
	GHM5	Green conduct is rewarded among our hotel employees.	0.800			
Organizational culture	ORC1	This hotel where I work has a lot of environmental issues.	0.817	0.931	0.911	0.692
	ORC2	This hotel where I work makes an effort to preserve the environment.	0.855			
	ORC3	This hotel where I work complies with all applicable environmental rules and regulations.	0.837			
	ORC4	To safeguard the environment, this hotel I work for has changed several of its management procedures.	0.817			
	ORC5	I work at this hotel that takes environmental responsibility seriously.	0.819			
	ORC6	This hotel, where I work has an environmental protection vision.	0.847			
Organizational sustainability	ORS1	This hotel has the capacity to handle vast amounts of data and information.	0.898	0.964	0.957	0.746
	ORS2	This hotel has the capacity to exchange knowledge and information.	0.839			
	ORS3	This hotel practices expenditure management, cost-benefit analysis, and cost-cutting.	0.889			
	ORS4	This hotel strives to recycle waste materials.	0.797			
	ORS5	This hotel is always searching for green energy sources.	0.883			
	ORS6	This hotel has a transparent reporting framework.	0.843			
	ORS7	This hotel has the capacity to adjust to evolving market demands, including new laws and rules pertaining to.	0.879			
	ORS8	The hotel intends to keep an eye on targeted markets to spot possibilities and potential dangers.	0.897			
	ORS9	This hotel ensures the timely execution of environmental contracts with third parties.	0.845			
Employee environmental proactivity	EEP1	This hotel has an official, documented, and well-defined environmental policy.	0.799	0.946	0.937	0.592
	EEP2	The environmental goals of our hotel are covered in great length in our strategic plan.	0.793			
	EEP3	We are always looking for new environmental factors and assessing how they may affect our property.	0.757			
	EEP4	We furnish our vendors with an exhaustive, documented inventory of environmental prerequisites.	0.834			



EEP5	We have performed a life-cycle study on the primary goods produced by this hotel.	0.748			
EEP6	Each employee at this hotel bears responsibility for their environmental performance.	0.712			
EEP7	Ideas to improve environmental results can be found in plenty of employee proposals.	0.732			
EEP8	Identifying environmental issues and possibilities and creating solutions are done through formal work teams.	0.664			
EEP9	At least once a year, an official evaluation is conducted to assess the environmental effects of activities.	0.803			
EEP10	To assess the environmental effects of new investments, formal processes are in place.	0.792			
EEP11	This hotel does an annual assessment of its waste reduction initiatives and outcomes.	0.786			
EEP12	This hotel does an annual evaluation of its current production processes' environmental concerns.	0.797			

**Table 3.** Discriminant validity (HTMT)

	Construct	1	2	3	4
1.	Green HRM				
2.	Organizational culture	0.660			
3.	Organizational sustainability	0.797	0.756		
4.	Employee environmental proactivity	0.761	0.622	0.679	

**4.3. Inner model**

To assess the statistical significance of path coefficients, a bootstrapping procedure was run using a sub-sample of 5,000 (Cho et al., 2023). H1 is supported by Table 4 and Figure 3, which proves that green HRM positively affected organizational culture ( $\beta = .398$ ,  $t = 6.031$ ,  $p < .001$ ). Similarly, organizational culture positively affected organizational sustainability ( $\beta = .501$ ,  $t = 8.744$ ,  $p < .001$ ), supporting H2 as proven in Table 4 and Figure 3. Employing 5,000 samples, a bootstrapping approach was run to determine path coefficient values to evaluate the mediation effect of organizational culture. According to Table 4, the positive nexus between green HRM and organizational sustainability was shown to be significantly affected by organizational culture ( $\beta = .199$ ,  $t = 4.188$ ,  $p < .001$ ). These findings supported H3 by providing evidence for the organizational culture’s partial mediation effect.

**Table 4.** Paths testing findings

	Paths	$\beta$	t-value	p-value	f <sup>2</sup>	Supported?
H1	Green HRM → Organizational culture	0.398***	6.031	0.000	0.131	Yes
H2	Organizational culture → Organizational sustainability	0.501***	8.744	0.000	0.411	Yes
H3	Green HRM → Organizational culture → Organizational sustainability	0.199***	4.188	0.000	-	Yes
	Employee environmental proactivity → Organizational culture	0.292***	4.231	0.000	0.071	
	Employee environmental proactivity → Organizational sustainability	0.363***	6.899	0.000	0.215	
H4a	Employee environmental proactivity*Green HRM → Organizational culture	0.276**	5.271	0.004	-	Yes

H4b	Employee proactivity*Organizational sustainability	environmental culture →	0.298***	6.092	0.001	-	Yes
<i>Overall model assessment</i>			Organizational culture		Organizational sustainability		
R <sup>2</sup>			0.409		0.592		

Next, R<sup>2</sup> values were calculated to evaluate the model’s explanatory ability (Hair, Risher, Sarstedt & Ringle, 2019). R<sup>2</sup> shows how much each external variable contributes overall to the variance explanation level of endogenous variables. The R<sup>2</sup> values of 0.26, 0.13, and 0.03 denote considerable, moderate, and weak. Findings proved that R<sup>2</sup> values explained 40.9% of organizational culture and 59.2% of organizational sustainability (see Table 4 and Figure 2). This suggests that the inner model has a strong capacity for explanation. Furthermore, Cohen’s effect sizes (f<sup>2</sup>) at values of 0.01, 0.06, and 0.14 are classified as small, medium, and large (Khalilzadeh & Tasci, 2017). Therefore, f<sup>2</sup> values in Table 4 denote medium and large effect sizes, which ranged between 0.071 and 0.411.

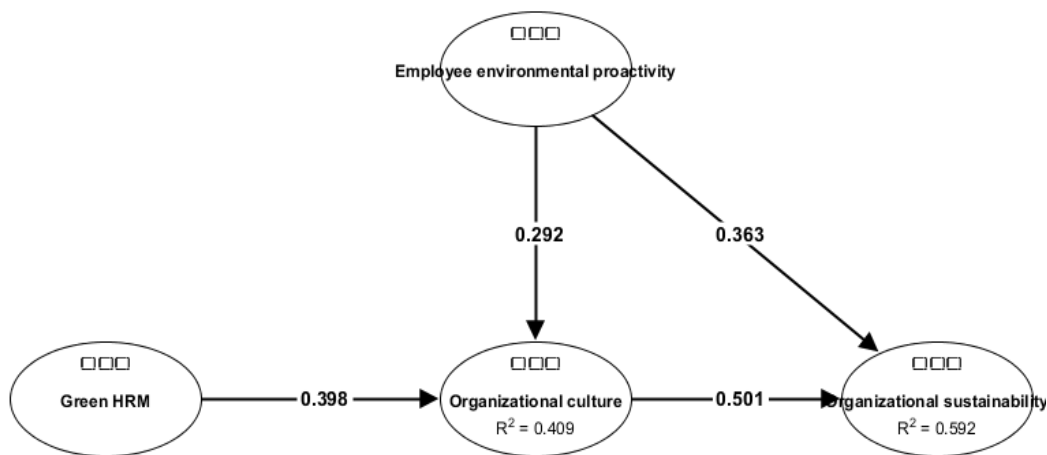


Figure 3. Structural model findings

Examining the moderating effect of employee environmental proactivity involves a two-stage approach (see Table 4). Findings demonstrated a significant moderating effect of employee environmental proactivity on organizational culture ( $\beta = .292, t = 4.231, p < .001$ ) and organizational sustainability ( $\beta = .363, t = 6.899, p < .001$ ). As a result, interaction effect results demonstrated that employee environmental proactivity x green HRM on organizational culture was positive ( $\beta = .276, t = 5.271, p < .01$ ). Further, interaction effect results demonstrated that employee environmental proactivity x organizational culture on organizational sustainability was positive ( $\beta = .298, t = 6.092, p < .01$ ). Hence, hypotheses H4a–H4b were accepted. Figure 4 showed that employee environmental proactivity strengthened these linkages, demonstrating that the higher the employee environmental proactivity, the higher the positive effect of green HRM on their culture towards environmental sustainability. As such, employee environmental proactivity achieved a buffering moderation effect.

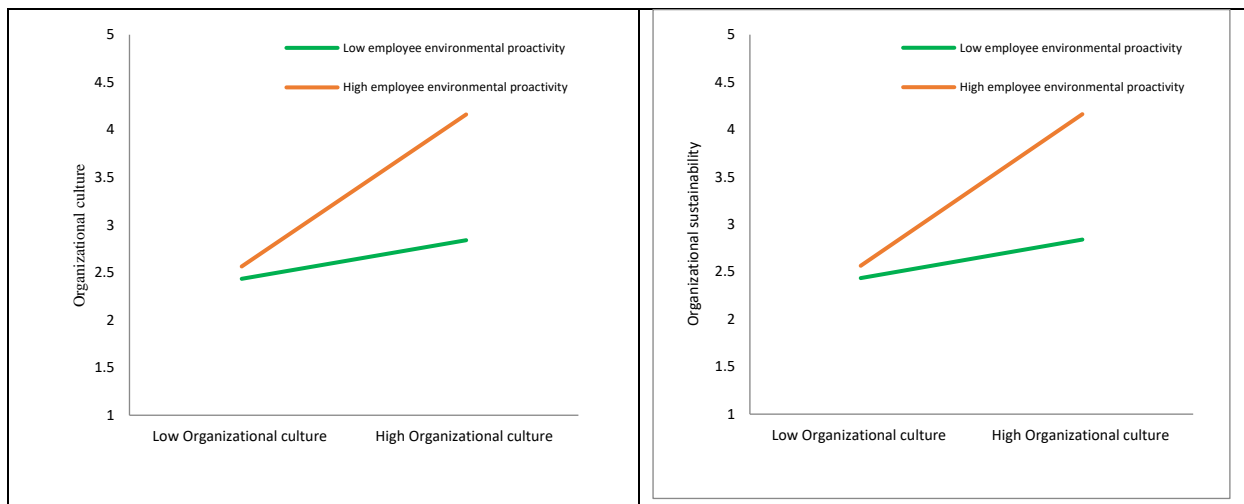


Figure 4. Moderation analysis findings

## 5. Conclusion and discussion

### 5.1. General discussion

Our findings offer valuable insights into the dynamics between green HRM and organizational sustainability within the realm of five-star hotels in Egypt. Findings revealed significant associations between green HRM and organizational culture. Specifically, this paper confirmed the positive effect of green HRM practices on organizational culture within the hospitality industry. This finding suggests that green HRM adoption in five-star hotels in Egypt contributes to a supportive culture development that values environmental sustainability. This is consistent with Ari et al. (2020) and Napathorn (2022) emphasizing the focal role of HRM in shaping organizational values, behaviors, and practices toward sustainability.

Moreover, this paper underscores the significance of organizational culture in driving organizational sustainability. The results imply that a robust organizational culture that prioritizes environmental responsibility correlates with higher levels of organizational sustainability within the hospitality industry. An entrenched environmental ethos within organizational culture can motivate employees to adopt eco-friendly behaviors and contribute to sustainable practices (Shahriari et al., 2023). This finding aligns with Mahmoud et al. (2022) highlighting the pivotal role of organizational culture in fostering sustainability initiatives across diverse sectors.

Furthermore, this paper highlights the mediating effect of organizational culture in the nexus between green HRM and organizational sustainability. Organizational culture partially mediated the association between green HRM and organizational sustainability. This suggests that while green HRM practices directly shape organizational culture, their impact on sustainability outcomes is partly mediated by organizational culture. It indicates that an organizational culture that values and prioritizes environmental responsibility acts as a catalyst for translating green HRM initiatives into tangible sustainability outcomes (Richter & Tudoran, 2024).

Additionally, this paper reveals the moderation role of employee environmental proactivity on the nexuses between green HRM, organizational culture, and organizational sustainability. Employee environmental proactivity strengthens green HRM effect on organizational culture, as well as the latter's effect on organizational sustainability. This underscores the importance of empowering and incentivizing employees to take proactive steps toward environmental sustainability. This aligns with Ghani et al. (2024), emphasizing the importance of employee engagement and initiative in driving sustainability efforts. In conclusion, this paper emphasizes the need for integrating green HRM practices, fostering a supportive organizational culture, and empowering employees to drive

sustainability initiatives within the hospitality industry. By prioritizing environmental responsibility and sustainability, hotels can enhance their competitive advantage and contribute to broader environmental protection and societal well-being.

### 5.2. *Implications and conclusion*

For ensuring hospitality organizations' sustainability, this paper offers top managers helpful guidance on choosing green HRM. Additionally, this paper helps middle managers comprehend how to more efficiently and positively inspire their workforce to address environmental concerns. This paper emphasizes how crucial green HRM procedures are to the Egyptian hospitality industry. Through the integration of green HRM concepts into organizational vision and mission statement, senior management and human resources should take on the extra duty of adopting green practices in the age of globalization. To maintain a consistent hotel vision and image, senior management should integrate environmental objectives into operational decision-making. Our findings should encourage hoteliers to provide their employees with green HRM training and knowledge, since these practices are essential in this age. Additionally, it fosters a culture of rewarding employees for their environmentally conscious behavior, which has the potential to change overseas customers' perceptions of Egyptian hotel settings and their services.

Moreover, our findings imply that green HRM investment is crucial for improving green corporate culture. As a result, hotel businesses ought to implement green HRM to support environmental management. To incorporate employee attitudes that drive organizational green management, green HRM should establish a green organizational culture in the hospitality sector. Lastly, one intriguing conclusion is that, because environmental proactivity can directly boost efficiency and competitiveness. In turn, it achieves this by cutting expenses, encouraging innovation, or strengthening and expanding hotel brands. It is clear that operating green hotels promotes customer brand loyalty and draws in new business. Hence, hospitality managers are able to use innovative tactics to withstand economic downturns and improve their market placement because of their proactive environmental efforts.

### 5.3. *Limitations and future research*

While this paper is crucial for developing relatively new correlations, it does not have limitations. As a cross-sectional study, data was collected all at once, which may have an impact on cause-and-effect correlations. To provide a more thorough explanation of causation, future studies may choose to take a longitudinal approach. Furthermore, this study's framework was assessed inside Egypt's hotel business, which may have reduced the findings' generalizability due to its narrow focus. Hence, other sectors can imitate this research's paradigm to gain an additional understanding of green HRM practices. Future research may look at multi-dimensional organizational sustainability based on the TPL model; this paper examined sustainability as a one-dimensional construct. By doing this, service organizations—including the hotel industry—may be able to meet their sustainability targets.

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