The relationship between green work engagement and green organizational citizenship behavior in hotels and travel agencies: the moderating role of environmental organizational culture

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Abstract

This study aimed to investigate the effect of green work engagement (GWE) on green organizational citizenship behavior (GOCB) taking into account the moderating role of environmental organizational culture (EOC). To examine the proposed model of the study, 417 valid responses were collected from five-star hotels and travel agencies operating in Egypt. The PLS-SEM approach was used to analyze data by WarpPLS software version 7.0. Results revealed that a positive correlation exists between green work engagement and green organizational citizenship behavior. In addition, EOC has a positive correlation with GWE and GOCB. Furthermore, EOC has a positive moderating effect on the relationship between GWE and GOCB. The study enhances Social Exchange Theory and green organizational behaviors by demonstrating that organizations promoting green work engagement encourage employees to reciprocate by adopting green citizenship behaviors. This study also offers practical guidance for hospitality and tourism practitioners and managers to promote green work engagement and green organizational citizenship behaviors for sustainable operations.

Keywords: Green work engagement, green organizational citizenship behavior, environmental organizational culture, five-star hotels, travel agencies.

Introduction

With the growing importance of environmental awareness, the hospitality and tourism industry, a major force in the global economy, faces the crucial task of integrating sustainability measures into its operations. This is essential for the industry's continued success in today's rapidly evolving world (Malheiro et al., 2020; Abdou et al., 2022; Legrand et al., 2022). The booming hospitality and tourism industry is causing significant environmental damage due to its heavy reliance on resources (Chakraborty, 2021; Ioannidis et al., 2021). As the industry tries to cater to the ever-increasing number of travelers, the environmental impact of tourism has become a major concern (Han, 2021). The hospitality industry faces growing concerns regarding its environmental impact due to its significant consumption of resources, energy, and generation of waste. This has led to calls for more sustainable practices within the industry (Khatter et al., 2019; Abdou et al., 2020). In response, hotels are actively seeking new strategies to not only minimize their carbon footprint but also cultivate a culture of environmental consciousness, green organizational citizenship behaviors (GOCB), and green work engagement (GWE) among their staff (Abdou et al., 2023).

Zheng et al. (2021) and Elshaer et al. (2021) emphasized the critical importance of employee behavior in ensuring the successful implementation of environmental

initiatives in the hospitality and tourism industry. The concept of green organizational citizenship behavior effectively captures the voluntary, proactive actions of employees aimed at environmental sustainability (Hooi et al., 2022). GOCB refers to discretionary efforts by employees to conserve resources, reduce waste, and promote environmental awareness in their organization (Boiral & Paillé, 2012; Chang et al., 2019). GOCB goes beyond job duties, highlighting employees' dedication and commitment to environmental issues. More expressly, employees who demonstrate strong green organizational citizenship behavior are proactive environmental allies. They go beyond their formal duties to enhance the organization's environmental performance, motivate others to adopt eco-friendly practices, and actively participate in environmental initiatives, especially when they receive encouragement and support from their supervisors. (Luu, 2019; Meng et al., 2022).

To clearly understand the relationship between GWE and GOCB, the study explored the role of environmental organizational culture. The term environmental organizational culture has various synonyms, such as sustainability-oriented culture, eco-friendly culture, green organizational culture, and environment-friendly culture. These terms all point to the same concept, which is the extension of organizational culture to include a focus on environmental issues and sustainability (Tahir et al., 2019; Liu & Lin, 2020). EOC is defined as a shared system of values, beliefs, and principles that promote environmentally responsible behavior and practices within the organization (Afum et al., 2020). Culture shapes employee thought patterns and provides a competitive edge for organizations (Shah et al., 2021). Green culture is built when employees actively integrate environmentally friendly practices into their daily work (Khazal, 2018). EOC fosters a workplace where employees develop new ways of thinking and acting to minimize the organization's environmental footprint. This culture is shaped by shared beliefs and assumptions about environmental issues and how they should be addressed. These assumptions translate into expected behaviors for all employees, guiding their actions toward environmental sustainability (Wang, 2019). The three aspects of EOC (degree, diffusion, and depth) contribute to a cultural shift within the organization, fostering a unique and hard-to-copy identity centered on sustainability (Aggarwal & Agarwala, 2021). Achieving sustainable goals requires institutionalizing environmental values and ensuring that the organization's vision and mission align with ecological principles (Aggarwal & Agarwala, 2023).

Few studies delved into the relationship between GOCB and GWE in the hotel sector (e.g., Abdou et al., 2023), a substantial knowledge gap that persists in recognizing the direct relationship between green work engagement and green organizational citizenship behavior within the hospitality and tourism sectors. To our knowledge, no prior study has investigated the indirect correlation between green organizational citizenship behavior and green work engagement, considering environmental organizational culture as a potential moderating factor, especially within the hospitality and tourism sectors. Consequently, there is a compelling need for empirical research that explicitly targets the hospitality and tourism sectors, as it may offer a more in-depth understanding of the GWE-GOCB relationship. Additionally, such research can help us understand the

potential factors, including an organization's environmental culture, that influence environmentally responsible behavior within hospitality and tourism businesses. This knowledge is valuable for researchers and practitioners alike as they work to promote sustainable practices in these industries.

Theoretical Framework and Hypotheses Development
Green Work Engagement and Green Organizational Citizenship Behavior
There is a well-established link between work engagement and organizational citizenship behavior. Extensive research has confirmed that work engagement significantly predicts organizational citizenship behavior (Xu et al., 2019; Ng et al., 2021). Numerous studies across various fields have consistently demonstrated a strong positive relationship between WE and OCB. For example, Zaabi et al. (2016) in the petroleum industry and Zhang et al. (2017) in the hotel industry found that increased WE led to a significant increase in OCB. In the same context, Farid et al. (2019) found that work engagement is a crucial factor in promoting organizational citizenship behavior among employees, particularly within the banking sector. Similarly, Ng et al. (2021) confirmed a strong positive relationship between work engagement and organizational citizenship behavior in the healthcare sector. Engaged, highly skilled employees are adept at leveraging resources like time, energy, and effort to benefit both colleagues and the organization as a whole. Additionally, these individuals possess a deep dedication to self-improvement. They view all aspects of their work as part of their domain and readily go the extra mile, exceeding expectations and venturing beyond formal job requirements (Priskila et al., 2021).

According to Zientara and Zamojska (2018), green behavior falls under the umbrella of OCB, representing voluntary actions that contribute to the organization. Employees' green behavior, particularly GOCB, is crucial for supporting an organization's environmental performance. Engaging in these behaviors contributes to both the organization's long-term sustainability and its ability to address environmental challenges (Pham et al., 2018). In the light of the social exchange theory of Blau (1964, 2017), employees who are intrinsically motivated and value environmental sustainability are likely to invest themselves in promoting green practices within their organizations (green work engagement). However, this engagement is driven by the expectation of receiving certain rewards and benefits from the organization, such as recognition, growth opportunities, and a positive work environment. When organizations fulfill these expectations and support green work engagement, employees feel a sense of positive exchange and are motivated to reciprocate by engaging in green organizational citizenship behavior. This means they go beyond their regular duties and actively take steps to promote environmental responsibility, such as conserving resources, reducing waste, and advocating for sustainable practices. In essence, GWE is considered a significant predictor of GOCB (Abdou et al., 2023). Therefore, the following hypothesis was proposed:

H1: there is a positive relationship between GWE and GOCB.

Environmental Organizational Culture and Green Work Engagement

GWE measures how deeply employees connect and actively participate in their workplace's sustainability initiatives. This engagement goes beyond mere compliance, reflecting a strong commitment to championing sustainable practices that reduce environmental and social harm (Karatepe et al., 2022). Employees with strong GWE will act as champions for environmentally friendly programs, ensuring their smooth operation and optimal alignment with the organization's goals. This dedication to sustainability ultimately translates to improved employee performance through increased engagement and motivation (Aboramadan, 2022). Culture is one of the main factors that shape the level of work engagement. As an organization's culture prioritizes environmental concerns, it can significantly boost work engagement with its sustainability initiatives (Scaliza et al., 2022). An organization's culture can be considered environmentally responsible when employees strive to reduce their environmental footprint and promote positive environmental practices rather than seeking profit goals (Muisyo et al., 2022). By cultivating an environmental organizational culture, employees are motivated to actively contribute to the organization's vision for environmental sustainability. This translates to tangible actions, such as reducing waste generation, implementing sustainable practices, and advocating for eco-friendly solutions (Tran, 2023). This aligns with contagion theory (Herrando & Constantinides, 2021) which forms the basis for the effectiveness of an environmental organizational culture, which motivates employees through the observed behavior of others to contribute to a collective effort towards environmental sustainability. Furthermore, EOC is crucial for successfully driving sustainable initiatives (Al-Swidi et al., 2021).

Organizations with strong morals and values around environmentalism can significantly impact their employees' green behavior. This is why EOC is crucial for the success of environmental practices (Ismail & Hilal, 2023). EOC acts as a foundation for continuous improvement in employee environmental performance. Cultural norms and values profoundly influence individual behavior. By encouraging the sharing of green values within an organization, it becomes possible to shift business strategies and work engagement toward greater environmental sustainability (Al-Swidi et al., 2021). When a company encourages eco-friendly culture, employees are more likely to be active participants in green initiatives (Khammadee & Ninaroon, 2022). In addition, organizations with a strong culture of environmental responsibility and sustainability tend to foster higher levels of work engagement, as employees are more likely to participate actively in environmentally friendly behaviors (Aggarwal & Agarwala, 2023). Consequently, the following hypothesis was formulated:

H2: EOC is positively influencing GWE.

Environmental Organizational Culture and Green Organizational Citizenship Behavior

A healthy organizational culture fosters positive employee behavior, leading to better outcomes (Jain & Jain, 2013). Essentially, organizational culture acts as a set of implicit rules and shared values that guide how employees behave within the organizational

hierarchy (Williams, 2022). Lasrado and Arora (2018) noted that organizations looking to enhance their environmental commitment and encourage employee participation in environmentally conscious behaviors need to foster a corporate culture that champions sustainability and green practices. An organization's success or failure in environmental management heavily relies on its organizational culture, particularly when built upon a foundation of sustainability. This culture is expressed through the values and activities the organization prioritizes, which then influence the environmental behaviors of employees and management (Danirmala & Prajogo, 2022). Encouraging a pro-environmental organizational culture allows employees to both contribute to sustainability efforts at work and gain valuable experience and knowledge through implementing environmentally friendly actions and practices (Úbeda-García et al., 2021). In addition, exposure to an environmental organizational culture, as described by Pan et al. (2022), leads to increased pro-environmental behaviors among employees, even in their personal lives and off work. An environmental organizational culture also encourages employees to embrace environmental innovations in the hospitality industry (Gürlek & Tuna, 2018). Where Aggarwal & Agarwala (2023) demonstrated how this culture motivates employees to actively engage in sustainable practices like recycling, energy conservation, printing reduction, and water conservation.

Organizations with a strong "green" culture, characterized by its environmental focus, cultivate a shared commitment to sustainability among employees. This shared commitment translates into employee behaviors that benefit the environment, known as green organizational citizenship behaviors. As employees embrace the organization's values, they become more dedicated to serving the company's mission, resulting in more frequent GOCBs (Putri, 2022). Several studies have highlighted the positive impact of environmental organizational culture on environmental behaviors and performance. For example, Pham et al. (2018) and Muisyo et al. (2022) found that a green culture encourages employees to engage in pro-environmental actions beyond their job duties. Al-Swidi et al. (2021) and Khairy et al. (2023) further demonstrated a direct link between green culture, employee green behaviors, and ultimately, improved environmental performance. Further, Al-Romeedy (2023) concluded that environmental organizational culture effectively promotes organizational citizenship behavior, resulting in reduced environmental damage from the organization's activities. This research proposes that fostering an environmental organizational culture can be a powerful strategy for organizations to promote environmental responsibility and green organizational citizenship behaviors among employees. Hence, the following hypothesis was proposed:

H3: EOC positively influences GOCB

The Moderating Role of Environmental Organizational Culture
Organizations with a green culture, characterized by shared assumptions, values, symbols, and artifacts that prioritize environmental sustainability, are more receptive to adopting environmentally friendly changes (Harris & Crane, 2002). This is because culture influences employee thinking, leading to a shift towards environmentally conscious behaviors and practices (Rao & Holt, 2005). Green culture fosters a sense of

environmental responsibility among employees, encouraging them to adopt sustainable practices in their work. This shared commitment actively participated in by all members of the organization, creates a powerful force for implementing green initiatives and driving positive behavioral change (Rizvi & Garg, 2021).

Employees' work behavior is influenced by their values, beliefs, and norms. This is supported by the value-belief-norm theory (Chou, 2014). Additionally, individuals who are concerned about environmental values are more likely to engage in green behavior (Hameed et al., 2020). Furthermore, self-determination theory (Lamm et al., 2013; Raineri & Paillé, 2016) suggests that employees with strong environmental beliefs tend to be more committed to environmental issues and are self-motivated to become more involved in green organizational citizenship behavior. Shah et al. (2021) emphasized that environmental organizational culture aims to cultivate a new organizational identity by encouraging employees to adopt environmentally friendly behaviors, ultimately transforming the organization through employees' green citizenship behaviors.

The level of work engagement is significantly influenced by the prevailing culture within an organization (Gabel-Shemueli et al., 2019). Muisyo et al. (2022) noted that factors fostering an environmental organizational culture are crucial for enhancing an organization's green competitiveness. These factors motivate employees to engage in green initiatives (Roscoe et al., 2019), ultimately leading to better environmental performance for the organization (Khairy et al., 2023). Tran (2023) suggests that GOC plays a significant role in shaping employee behavior within the organization, emphasizing its impact on GWE. Organizations that prioritize environmental culture and sustainability create an environment where employees are more engaged in their work and actively contribute to environmentally friendly practices (Aggarwal & Agarwala, 2023). Building on this, the following hypothesis was proposed:

H4: EOC positively moderates the relationship between GWE and GOCB.

The conceptual framework of the study is illustrated in Figure 1 below.
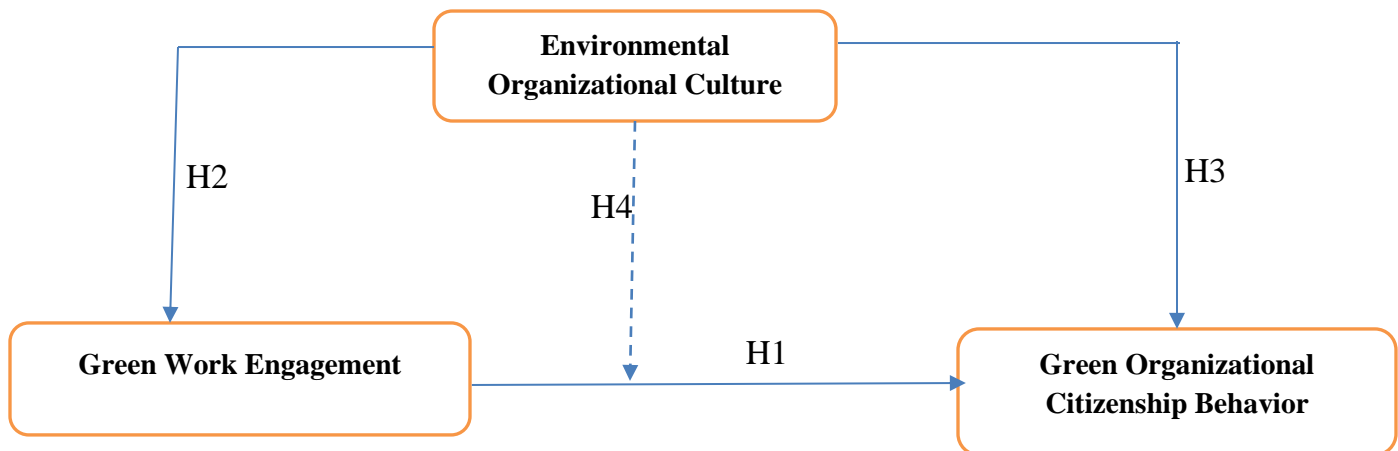
Figure (1): Conceptual framework of the study

Materials and Methods
Measures and Instrument Development
The research sample's gender, age, education, experience, and work enterprise were all questioned in this study, which employed a self-administered questionnaire to measure green work engagement, green organizational citizenship behavior, and environmental organizational culture. The study used a five-point Likert scale to measure all latent variables, ranging from 1 for strongly disagree to 5 for strongly agree.

Green work engagement was measured by a 6-item scale adapted from Aboramadan (2022). For example, "My environmental-related tasks inspire me" and "I am proud of the environmental work that I do". In addition, green organizational citizenship behavior was assessed by a 7-item scale suggested by Hooi et al. (2022). For instance, "I suggest new practices that could improve the organization's environmental performance" and "I encourage my colleagues to adopt more environmentally conscious behaviors". Moreover, a 6-item scale developed by Wang et al. (2020) was used to evaluate environmental organizational culture. Sample items include: "Our firm emphasizes environmental protection knowledge" and "Our firm emphasizes the cooperation of environmental protection". The comprehensive measurement items are presented in Appendix (A).

Sampling, data collection and analysis
Employees from five-star hotels and category (A) travel agencies in the greater Cairo region of Egypt were used to test the research model. The two business categories were chosen due to their dominance in Egypt's hospitality and tourism industry, which both cater to international tourists. The study utilized a convenience sample strategy due to the large population and limited resources of the researchers. In 2018, Egypt had 158 5-star hotels and 2222 category (A) travel agents, according to the Egyptian Ministry of Tourism (The Ministry of Tourism, 2018). In the investigated premises, 700 questionnaires were distributed to employees. There were 417 valid questionnaires collected, reflecting a response rate of 59.8%; 258 surveys (61.9%) were obtained from personnel working in 22 five-star hotels, while 159 (38.1%) were received from employees working in 35 travel agencies. The study utilized the PLS-SEM approach with WarpPLS software version 7.0 to analyze the study's measurement and structural model and evaluate the research hypotheses.

Results
Participant's profile
Among the 417 employees who participated in this study, 293 (70.3%) were men and 124 (29.7%) were women. Slightly more than half of respondents (n=221, 53.0%) were between the ages of 30 and less than 45. In addition, the majority of them (n=322, 77.2%) had a bachelor's degree. Moreover, 213 employees (51.1%) had two and less than five years of work experience. Furthermore, 258 (61.9%) of employees were working in five-star hotels, whereas, 159 (38.1%) were working in travel agencies.

Table 1. Participant's profile (N=417).

		Frequency	**Percent**
Gender	Male	293	70.3
	Female	124	29.7
Age group	< 30 years	134	32.1
	30 : < 45 years	221	53.0
	≥45 years	62	14.9
Educational level	High schools/institute	73	17.5
	Bachelor	322	77.2
	Master/PhD	22	5.3
Working experience	1:< 2 years	95	22.8
	2 to <5 years	213	51.1
	5 to 8 years	62	14.9
	> 8 years	47	11.2
Enterprise	Hotels	258	61.9
	Travel agency	159	38.1

Research model's reliability and validity

The study's confirmatory factor analysis (CFA) presented in Table (2) showed that item loadings between 0.728 and 0.877, acceptable levels according to Hair et al. (2010). Cronbach's alpha and composite reliability values are above 0.7 for all variables, demonstrating scale reliability, and AVE values are above 0.5 for all variables, demonstrating scale reliability (Hair et al., 2020). Furthermore, the variance inflation factor (VIF) is calculated, indicating pathological collinearity and common method bias, since it is ≤3.3 (Kock, 2015).

Table 2. Factor loadings, Cronbach's, CR, AVE, and VIF

	Item loading	**CR**	**CA**	**AVE**	**VIF**
Green Work Engagement (GWE)	-				
GWE.1	0.774**				
GWE.2	0.877**				
GWE.3	0.857**				
GWE.4	0.742**	0.922	0.897	0.663	2.582
GWE.5	0.825**				
GWE.6	0.802**				
Green Organizational Citizenship Behavior (GOCB)	-				
GOCB.1	0.795**				
GOCB.2	0.780**				
GOCB.3	0.788**				
GOCB.4	0.823**	0.916	0.893	0.610	2.954
GOCB.5	0.814**				

GOCB.6	0.736**				
GOCB.7	0.728**				
Environmental Organizational Culture (EOC)	-				
EOC .1	0.838**				
EOC .2	0.803**				
EOC .3	0.828**				
EOC .4	0.873**	0.933	0.913	0.697	3.038
EOC .5	0.853**				
EOC .6	0.814**				
"CR: Composite reliability; CA: Cronbach's alpha; AVE: average variance extracted; VIF: variance inflation factors "					
** P value for item loading (<0.001)					

Since the discriminant validity requires a significant correlation between latent variables and an AVE value greater than the greatest common value (Franke & Sarstedt, 2019), the results tabulated in Table (3) confirm the research model's discriminant validity.

Table 3. Research model's discriminant validity

	GOCB	GWE	EOC
Green Organizational Citizenship Behavior (GOCB)	0.781	0.704	0.786
Green Work Engagement (GWE)	0.704	0.814	0.713
Environmental Organizational Culture (EOC)	0.786	0.713	0.835

The research model's quality indices
All ten "model fit and quality indices" suggested by Kock (2021) were achieved for the current study research model as presented in Appendix (B).

Structural model and testing hypotheses
Figure 2 shows the results of testing the four (H1, H2, H3, and H4) hypotheses proposed in this study. Results revealed that a positive correlation exists between green work engagement (GWE) and green organizational citizenship behavior (GOCB) (β=0.28, P<0.01). This means that when GWE increases, GOCB tends to be high. Therefore, H1 is supported. In addition, EOC has a positive correlation with GWE (β=0.79, P<0.01) and GOCB (β=0.56, P<0.01). This means that when EOC increases, both GWE and GOCB tend to be high. Therefore, H2 and H3 are supported. Furthermore, EOC has a positive moderating effect on the relationship between GWE and GOCB (β=0.10, P=0.02). This means that EOC strengthens the positive relationship between GWE and GOCB. Thus, H4 is supported. Figure 2 also shows that EOC interprets 63% of the variance in GWE (R^2=0.63), while EOC and GWE interpret 68% of the variance in GOCB (R^2=0.68).
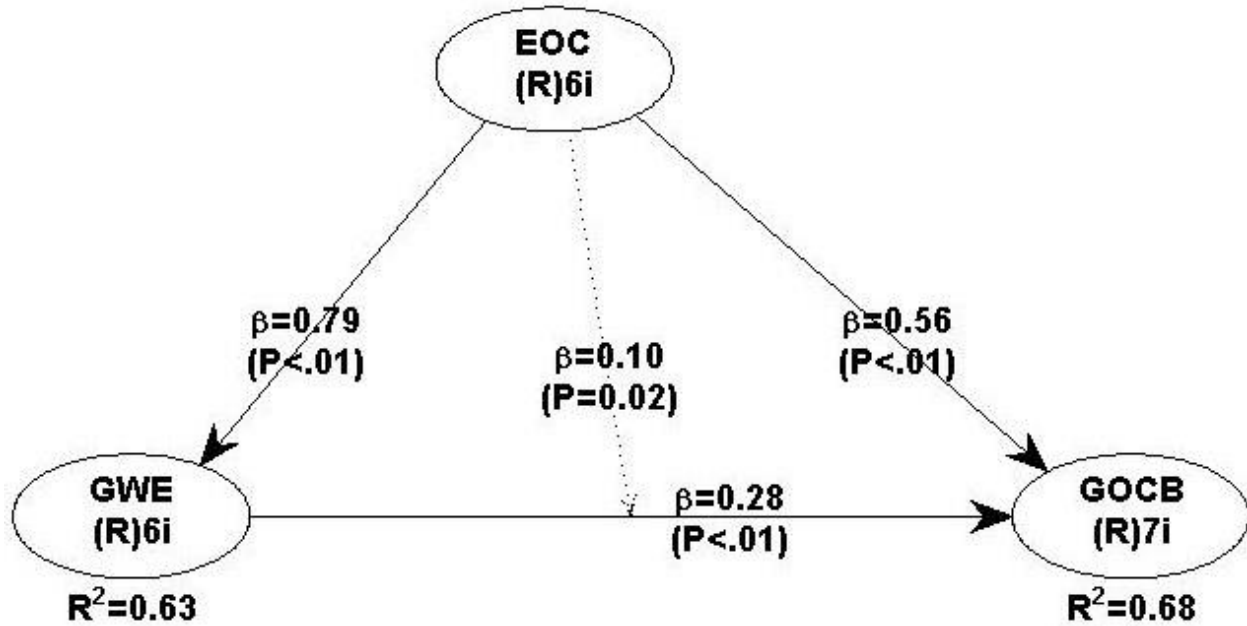
Figure 2: Final model of the study

Discussion

This study aimed to investigate the effect of green work engagement (GWE) on green organizational citizenship behavior (GOCB) taking into account the moderating role of environmental organizational culture (EOC). The research model was formulated and examined. Findings revealed that GWE positively affects GOCB. This finding is consistent with Abdou et al. (2023) who argued that GWE is a significant predictor of GOCB. Employees motivated by environmental sustainability are more likely to promote green practices within their organizations, expecting rewards like recognition and growth opportunities. When organizations support green work engagement, employees reciprocate by engaging in green organizational citizenship behavior. In addition, higher levels of green work engagement among employees lead to positive organizational interactions, influencing green-work outcomes like GOCB and motivating commitment to green initiatives for organizational sustainability (Luu, 2019).

Findings also revealed that EOC positively affects GWE and GOCB, and positively moderates the relationship between GWE and GOCB. These findings are consistent with Al-Swidi et al. (2021) and Aggarwal & Agarwala (2023) who argued that organizations with a robust environmental responsibility and sustainability culture tend to promote higher levels of green work engagement, Al-Swidi et al. (2021), Al-Romeedy (2023), and Khairy et al. (2023) who concluded that an environmental organizational culture effectively encourages organizational citizenship behavior, leading to reduced environmental damage from the organization's activities, and with Shah et al. (2021) and Muisyo et al. (2022) who asserted that encouraging an environmental organizational culture is vital for enhancing an organization's green competitiveness. Environmental organizational culture significantly influences employee behavior, with a positive relationship between EOC and GOCB. Employees aligned with organizational values and

ethics regarding environment preservation show better GOCB. In addition, the pro-environmental organizational members' values, beliefs, and behaviors shape a green culture (Chang, 2015).), influencing their actions toward the environment, particularly in terms of GWE and GOCB.

Theoretical and practical implications
This study provides significant theoretical contributions, particularly to Social Exchange Theory (SET) and the field of green organizational behaviors. The findings strengthen the core tenets of SET by demonstrating that organizations promoting green work engagement foster an environment where employees feel compelled to reciprocate by engaging in more green organizational citizenship behaviors. The positive link between green work engagement (GWE) and green organizational citizenship behavior (GOCB), moderated by environmental organizational culture, emphasizes how individuals respond favorably to green work engagement with increased GOCBs. Furthermore, this research pinpoints the crucial role of an environmental organizational culture in nurturing green work engagement and green organizational citizenship behaviors. It underlines that a green culture not only directly influences employees' green behaviors but also fosters a working environment where employees deeply identify with green values and actively engage in sustainability initiatives. Moreover, the study's findings contribute to the development of a holistic framework for understanding green organizational behaviors. It highlights the interlinked nature of engagement, culture, and citizenship behaviors in the context of environmental sustainability, offering researchers and practitioners a comprehensive perspective. The recognition of environmental organizational culture as a significant moderator in the GWE-GOCB correlation sheds light on the nuanced pathways through which green work engagement influences green citizenship behaviors. This advocates that organizations should prioritize environmental organizational culture as an integral facet of their strategies aimed at encouraging green engagement and employees' green citizenship behaviors, especially in the hospitality and tourism sectors. These perceptions provide valuable insights for further studies and the development of effective strategies for advancing environmental sustainability in these sectors.

For practitioners and managers in the hospitality and tourism sectors, the practical implications of this study present valuable guidance to promote green work engagement and green organizational citizenship behaviors to attain more sustainable operations. To achieve this, hospitality and tourism organizations aiming for environmental sustainability must ensure all their strategies, policies, and practices are aligned with environmental organizational culture. Firstly, this study emphasizes the significance of nurturing green work engagement among employees. To achieve this, hospitality and tourism organizations can cultivate a work environment that empowers employee participation in eco-friendly practices. This might involve providing resources, recognition, and opportunities for employees to actively contribute to green initiatives.

Secondly, managers should prioritize the comprehension and development of employees' green organizational citizenship behaviors. This requires from the beginning selecting and recruiting individuals who are passionate about sustainability and actively engage in

green initiatives. It also requires investing in developing employees' environmental awareness through green training and creating a supportive work environment that encourages green practices. Furthermore, hospitality and tourism organizations should explicitly acknowledge and reward the eco-friendly activities of employees. Supporting a culture that recognizes and rewards pro-environmental behaviors can inspire employees to exceed expectations and enthusiastically engage in GOCBs and sustainability efforts. Thirdly, implementing regular feedback systems and recognition programs to acknowledge and celebrate employee contributions to green initiatives. This reinforces positive behavior and encourages employees to go on with GOCBs. Lastly, building a robust environmental organizational culture is crucial for hospitality and tourism organizations. This means ensuring the organization's values, goals, and mission are deeply aligned with environmental consciousness. Implementing clear communication strategies that highlight the organization's dedication to eco-friendly culture not only strengthens its green image but also fosters a stronger connection among employees with those shared values and beliefs.

Limitations and further research
Every research regardless of its rigor carries inherent limitations that must be transparently acknowledged. First, the study investigated the relationship between GWE and GOCB with EOC within the context of five-star hotels and travel agencies category (A). The theoretical framework and empirical findings of the present study offer valuable insights applicable to similar contexts and organizations that share specific characteristics. Furthermore, investigations into these relationships within distinct industrial sectors or cultural settings could contribute to the construction of a more comprehensive understanding of these interdependencies. Consequently, future research endeavors that may replicate this study within diverse organizational environments, such as the restaurant industry, green hospitality venues, or airline companies, may generate differentiated outcomes, consequently enriching our understanding of the intricate interconnections among these variables.

Second, the current study investigated the moderating role of environmental organizational culture in the relationship between green work engagement and green organizational citizenship behavior. Therefore, further research needs to explore the mediation effect of EOC in the GWE-GOCB relationship or investigate the mediating/moderating role of other factors like green transformational leadership, green dynamic capabilities, green organizational identification, etc. Third, this study relied on online surveys for collecting data. Given the implicit limitations of quantitative studies, future research could use qualitative methods, like interviews or focus groups, to understand employee perceptions of GWE, GOCB, and EOC better. Finally, the study focused only on five-star hotels and travel agencies (A) in Egypt, which strengthens the relevance of the findings for that specific context. However, this focus also restricts the applicability of the findings to other populations or settings. Thus, future studies could replicate the research in broader contexts, like the Middle East or other foreign countries, to test the wider applicability of the findings.

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Appendix (A): Measurement scale items

Green Work Engagement
- GWE.1. My environmental-related tasks inspire me.
- GWE.2. I am proud of the environmental work that I do.
- GWE.3. I am immersed in my environmental work.

- GWE.4. I am enthusiastic about my environmental tasks at my job.
- GWE.5. I feel happy when I am working intensely on environmental tasks.
- GWE.6. With environmental tasks at my job, I feel bursting with energy.

Green Organizational Citizenship Behavior

- GOCB.1. I suggest new practices that could improve the organization's environmental performance.
- GOCB.2. I encourage my colleagues to adopt more environmentally conscious behaviors.
- GOCB.3. I stay informed of the organization's environmental efforts.
- GOCB.4. I make suggestions about ways to protect the environment more effectively.
- GOCB.5. I volunteer for projects or activities that address the organization's environmental issues.
- GOCB.6. I spontaneously give my time to help my colleagues take the environment into account.
- GOCB.7. I undertake environmental actions that contribute positively to the organization's image.

Environmental Organizational Culture

- EOC1: Our firm emphasizes environmental protection knowledge;
- EOC2: Our firm emphasizes the cooperation of environmental protection;
- EOC3: Our firm emphasizes the agreement of environmental protection;
- EOC4: Our firm emphasizes the change in environmental protection;
- EOC5: Our firm emphasizes the impact of environmental protection;
- EOC6: Our firm emphasizes the vision of environmental protection.

Appendix (B) Model fit and quality indices

	Assessment	Criterion	Supported/Rejected
Average path coefficient (APC)	0.435, P<0.001	P<0.05	Supported
Average R-squared (ARS)	0.656, P<0.001	P<0.05	Supported
Average adjusted R-squared (AARS)	0.655, P<0.001	P<0.05	Supported
Average block VIF (AVIF)	2.452	acceptable if <= 5, ideally <= 3.3	Supported
Average full collinearity VIF (AFVIF)	2.542	acceptable if <= 5, ideally <= 3.3	Supported
Tenenhaus GoF (GoF)	0.698	small >= 0.1, medium >= 0.25, large >= 0.36	Supported
Sympson's paradox ratio (SPR)	1.000	acceptable if >= 0.7, ideally = 1	Supported
R-squared contribution ratio (RSCR)	1.000	acceptable if >= 0.9, ideally = 1	Supported
Statistical suppression ratio (SSR)	1.000	acceptable if >= 0.7	Supported
Nonlinear bivariate causality direction ratio (NLBCDR)	0.750	acceptable if >= 0.7	Supported

الملخص العربى

العلاقة بين الارتباط بالعمل الأخضر وسلوك المواطنة التنظيمية الخضراء في الفنادق ووكالات السفر: الدور المعدل للثقافة التنظيمية البيئية

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هدفت هذه الدراسة إلى دراسة تأثير الارتباط بالعمل الاخضر على سلوك المواطنة التنظيمية الخضراء مع الأخذ بعين الاعتبار الدور المعدل للثقافة التنظيمية البيئية . لدراسة النموذج المقترح ، تم جمع 417 إجابة صالحة من فنادق الخمس نجوم ووكالات السفر العاملة في مصر. تم استخدام أسلوب PLS-SEM لتحليل البيانات بواسطة الإصدار 7.0 من برنامج WarpPLS. وأظهرت النتائج وجود علاقة ارتباطية موجبة بين الارتباط بالعمل الاخضر وسلوك المواطنة التنظيمية الخضراء. بالإضافة إلى ذلك، للثقافة التنظيمية البيئية علاقة إيجابية مع الارتباط بالعمل الاخضر و سلوك المواطنة التنظيمية الخضراء .علاوة على ذلك، فإن للثقافة التنظيمية البيئية تأثير إيجابي معدل على العلاقة بين الارتباط بالعمل الاخضر و سلوك المواطنة التنظيمية الخضراء .تعزز الدراسة نظرية التبادل الاجتماعي والسلوكيات التنظيمية الخضراء من خلال إظهار أن المنظمات التي تشجع المشاركة في العمل الأخضر تحفز الموظفين على المعاملة بالمثل من خلال تبني سلوكيات المواطنة الخضراء. تقدم هذه الدراسة أيضًا إرشادات عملية لممارسي ومديري الضيافة والسياحة لتعزيز المشاركة في العمل الأخضر وسلوكيات المواطنة التنظيمية الخضراء للعمليات المستدامة.

الكلمات المفتاحية: الارتباط بالعمل الأخضر ، سلوك المواطنة التنظيمية الخضراء، الثقافة التنظيمية البيئية، فنادق الخمس نجوم، وكالات السفر.