

# Environmentally specific empowering leadership and organizational citizenship behavior toward the environment: The roles of green work engagement, psychological ownership, and environmental concern

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## Article History

Received : 2025-01-22

Revised : 2025-02-04

Accepted : 2025-02-04

Published : 2025-02-25

## Keywords:

Environmentally specific empowering leadership; organizational citizenship behaviors for the environment; psychological ownership; green work engagement; environmental concern; hospitality.

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## DOI:

[10.20885/AMBR.vol5.iss1.art10](https://doi.org/10.20885/AMBR.vol5.iss1.art10)

## Abstract

This study investigates the influence of environmentally specific empowering leadership on organizational citizenship behavior towards the environment (OCBE) among employees in hospitality firms. A theoretical framework posits that environmentally specific empowering leadership enhances OCBE, with psychological ownership and green work engagement acting as mediating variables. Furthermore, environmental concern among co-employees moderates this relationship. Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to analyze data collected from 525 mid-level managers working in three- to five-star hotels in the municipalities of Tshwane and Johannesburg using structured questionnaires. The findings confirm that environmentally specific empowering leadership significantly enhances OCBE. Psychological ownership and green work engagement are critical pathways in translating leadership practices into pro-environmental employee behaviors. Additionally, the moderating role of environmental concern underscores the importance of cultivating an organizational culture that values environmental sustainability. The study recommends that hospitality firms embed environmentally focused leadership practices within their organizational structures, emphasizing empowerment and employee engagement to foster pro-environmental behaviors. Policymakers are encouraged to incentivize sustainable leadership practices and provide training programs that equip managers with skills to inspire environmental responsibility among employees. These contributions advance policy and practice by highlighting the strategic role of leadership in promoting sustainability and positioning the hospitality sector as a model for environmentally conscious business operations.

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## Introduction

Environmental challenges such as pollution, deforestation, resource depletion, biodiversity loss, global warming, and ozone layer depletion are increasingly acknowledged as serious problems on a worldwide scale (Ivar & Robert, 2022; Shivanna, 2022). Climate change, primarily driven by human activity, poses a significant threat to global stability, with extreme weather events, climate action failures, and human environmental damage identified as the top global risks (Abbass et al., 2022). While businesses, particularly in the hospitality sector, are major contributors to environmental degradation through resource over-consumption and pollution (Abubakar et al., 2022), they also have the potential to drive positive environmental outcomes. Promoting pro-

environmental behaviors (PEB) among employees is essential in managing environmental challenges and achieving sustainability in sectors such as tourism (Bilynets & Cvelbar, 2022).

Leadership is crucial in encouraging employees' pro-environmental behavior (PEB). Leaders are role models and can shape employees' prosocial actions through their conduct and decisions (Farrukh et al., 2022; Shah et al., 2023). By providing a fresh and alternative theoretical framework to explain employees' OCBEs, empowering leadership will enhance employees' OCBEs and complement social exchange theory viewpoints (Ullah et al., 2021; Yin et al., 2021). However, the new paradigm uses target-specific leadership styles to predict specific outcomes (Deng et al., 2022; Liao, 2022). This study aims to combine empowering leadership with environmental considerations to establish a new concept called environmentally specific empowering leadership, also called green empowering leadership. This construct, introduced by the study, is defined as a leadership style that prioritizes environmental sustainability while fostering employees' empowerment, autonomy, and overall well-being.

Psychological ownership is when individuals feel they own 'a piece of thing' (Guarana & Avolio, 2022). Employees who develop psychological ownership (PO) toward their organization tend to feel more connected to it, take greater responsibility for its well-being, and actively work to safeguard its interests (Abbas et al., 2021; Sarfo et al., 2022). This suggests that PO can affect employees' OCBE (Abbas et al., 2021). Heyns et al. (2021) describe work engagement as the situation of an individual's positive, work-related state of mind that is characterized by vigor and dedication; work engagement is a significant predictor of work performance and extra-role behaviors. Green work engagement (GWE) describes the situation in which an employee has a work-related state of mind that supports sustainability initiatives (Huo et al., 2022). GWE can motivate employees to participate in green practices (Aboramadan, 2022). This suggests that employees' PO and GWE can play a mediating role in the relationship between perceived green empowering leadership and employees' OCBE (Liu & Ren, 2022; Yue et al., 2022). Understanding the mediating role of factors such as EPO and green work engagement is crucial in exploring the relationship between green empowering leadership and OCBE. By examining these mediating factors, researchers can understand how employees' perceptions of ownership and engagement influence their behavior toward sustainability initiatives. This investigation is significant as it offers a unique perspective on the underlying mechanisms that drive the relationship between leadership, employees' attitudes, and environmentally responsible behavior within organizations (Bhattacharya et al., 2023).

In addition, co-employees' behavior can directly or indirectly impact employees' relevant behaviors through personal interactions (Zhenjing et al., 2022). Employees are more likely to adopt sustainable behaviors when they perceive their colleagues as environmentally conscious or eco-friendly and view their co-workers' green initiatives positively (Ren et al., 2022; Zhenjing et al., 2022). When employees recognize their perception of co-workers' environmental concerns, this can strengthen their green work engagement and the desire to work in a more environmentally friendly organization (Karatepe et al., 2022). Based on this reasoning, co-employees' environmental concerns can influence employees' OCBE through social and work interactions. Based on this background, this study intends to develop and test a uniquely new theoretical (moderated mediated) model that examines the relationship between employees' perception of green empowering leadership and OCBE. In addition, the indirect role/roles of employee factors (psychological ownership and GWE) and co-employees' environmental concerns will be explored. One aspect that makes the study significant is its examination of how environmental concern moderates green work engagement and organizational citizenship behavior toward the environment (OCBE). Prior research has focused on the direct relationship between environmental concern and green work engagement or OCBE (Woo & Kang, 2021). By investigating the moderating role of environmental concern in the relationship between GWE and OCBE, this study offers new insights into the interactive effects of individual and organizational factors on environmentally responsible behaviors in the workplace. The study aims to investigate the relationship between environmentally specific empowering leadership and the OCBE of employees in hospitality firms while introducing a novel theoretical model that accounts for mediating and moderating factors in this context.

## **Literature Review and Hypotheses Development**

According to Duarte and Mouro (2022), the social exchange theory strongly focuses on people exchanging resources to preserve their ties. Studies on environmental leadership can employ the social exchange theory to describe how followers and leaders exchange sustainable practices (Xu et al., 2022). Leaders may encourage sustainable behavior and change by sharing information, resources, and rewards for ecologically conscious activity. In communities and organizations, this interaction can support the development of a sustainable culture (Abbas et al., 2022; Liao, 2022). According to the social exchange concept, environmental leadership necessitates reciprocity. Leaders may cultivate trust and a feeling of collective environmental responsibility by actively communicating, involving, and working with stakeholders (Aboramadan et al., 2022; Jayashree et al., 2022). To inspire followers to participate in environmentally friendly activities, leaders can establish a reciprocal relationship by sharing ideas, resources, and solutions (Boeske, 2023). According to Alo and Arslan (2022), Jayashree et al. (2022), and Onyinyechi et al. (2022), the social exchange theory offers a framework for understanding how leaders can have positive interactions with their followers, promoting desired behaviors and creating productive relationships. This framework can be applied to environmental leadership studies.

### **Environmentally Specific Empowering Leadership and Organizational Citizenship Behaviors for the Environment**

The theory of planned behavior (Omarova & Jo, 2022) and the normative behavior theory (Asante, 2023; Wang et al., 2023) have been the main focus of studies on green leadership. Environmental leadership represents a distinct leadership style that addresses ecological challenges by promoting sustainable practices to meet present needs without compromising future generations (Boeske, 2023). A relatively new construct within this field, environmentally specific empowering leadership integrates empowerment and environmental priorities. Despite its potential, empirical studies examining its relationship with organizational citizenship behavior towards the environment (OCBE) and voluntary pro-environmental behavior remain scarce, likely due to the emerging focus on sustainability in leadership (Yue et al., 2022). This leadership style can enhance OCBE by fostering ownership, motivation, and skills development while promoting transparency and trust (Piwowar-Sulej & Iqbal, 2023; Ye et al., 2022). Future research is essential to explore its impact on employees' engagement in sustainability initiatives and OCBE, offering valuable insights into how leadership can drive environmentally responsible behaviors within organizations. Based on these concepts, the following hypothesis is proposed:

H<sub>1</sub>: There is a significant positive relationship between environmentally specific empowering leadership (ESEL) and organizational citizenship behaviors for the environment (OCBE).

### **Environmentally Specific Empowering Leadership and Employees' Psychological Ownership**

Empowering leader behaviors are essential in fostering self-identity among individuals, as people seek to define their identities within work environments and develop psychological ownership through their interactions with the organization (Wang et al., 2023). According to Schermuly et al. (2022), empowering leadership promotes psychological ownership through four key mechanisms. First, it emphasizes the meaningfulness of employees' work, helping them better understand their goals and contributions and strengthening their connection to the organization and their work. This familiarity is crucial for psychological ownership. Second, empowering leadership involves employees in decision-making, granting them more control over their work conditions, which fosters a sense of ownership (Medhn Desta & Mulie, 2024). Third, empowering leadership boosts employees' self-efficacy by expressing confidence in their abilities to achieve high performance, as noted by van Graan et al. (2023). These behaviors collectively enhance employees' psychological ownership, increasing their engagement and commitment to the organization. Based on this information, the following hypothesis is proposed:

H<sub>2</sub>: There is a significant positive relationship between environmentally specific empowering leadership (ESEL) and employees' psychological ownership (EPO).

### **Environmentally Specific Empowering Leadership and Green Work Engagement**

Environmentally specific leadership has emerged as a significant driver of green work engagement, with leaders prioritizing environmentally friendly practices fostering higher levels of employee engagement in green behaviors (Abdou et al., 2023; Aboramadan, 2022; Tran, 2023). Leaders with expertise in environmental issues can motivate employees to adopt sustainable practices, enhancing organizational sustainability efforts (Khan et al., 2023). Studies highlight that environmental leadership, defined by the ability to support and promote eco-friendly behaviors within organizations, positively influences employees' adoption of green practices such as waste reduction and energy conservation (Duarte & Mouro, 2022; Noor et al., 2023). Leadership styles emphasizing environmental responsibility enhance employee motivation and engagement, encouraging active participation in sustainability initiatives (Khan et al., 2023; Liao, 2022). As a result, organizations implementing environmentally focused leadership approaches can drive green work engagement and contribute significantly to environmental sustainability (Suliman et al., 2023). Based on this information, the following hypothesis is proposed:

H<sub>3</sub>: There is a significant positive relationship between environmentally specific empowering leadership (ESEL) and green work engagement (GWE).

### **Employees' Psychological Ownership and OCBE**

Employees' sense of psychological ownership has been shown to influence their organizational citizenship behavior towards the environment positively (OCBE) by fostering a sense of responsibility and commitment to the organization's sustainability goals (Kim & Chung, 2023; Abbas et al., 2022). Psychological ownership develops when employees perceive the organization as "theirs," creating a deep sense of attachment and accountability that motivates them to engage in extra-role behaviors to support the organization. Research by Gardner et al. (2022) demonstrates that employees with heightened psychological ownership are more likely to go beyond formal job requirements and participate in OCBE. This is attributed to their self-perception as integral contributors to the organization's success (Zhenjing et al., 2022). Similarly, Sheikhi and Yousefi (2023) highlight that employees with a strong sense of ownership are more likely to identify with their organization, increasing their willingness to engage in environmentally responsible actions. Ullah et al. (2021) further suggest that such employees, viewing themselves as stakeholders in the organization, take proactive steps not only to fulfill their work tasks but also to enhance the organization's overall well-being and sustainability. These findings underscore the critical role of psychological ownership in fostering proactive environmental initiatives within organizations. Based on this information, the following hypothesis is proposed:

H<sub>4</sub>: There is a significant positive relationship between employees' psychological ownership (EPO) and organizational citizenship behaviors for the environment (OCBE).

### **Green Work Engagement and OCBE**

Employees actively addressing environmental issues tend to possess more excellent knowledge and problem-solving capabilities, which enhance organizational environmental performance (Pham et al., 2022; Zhang et al., 2021; Omarova & Jo, 2022). Empowering employees in decision-making fosters their problem-solving skills and self-control, enabling them to take meaningful actions toward sustainability (Xiang et al., 2021; Ye et al., 2022). Opportunities for involvement in environmentally friendly initiatives are facilitated through shared visions, idea exchange, and open discussions about environmental matters (Woo & Kang, 2021). Employees contribute to green initiatives via formal and informal communication channels, supported by an organizational vision for sustainability (Mmutle, 2021). Green teams enhance environmental management by enabling teamwork on complex problems, knowledge sharing, and collaborative efforts (Zajac et al., 2021). Engaged employees who align sustainability with their values actively support organizational green

initiatives, fostering behaviors consistent with organizational citizenship behavior towards the environment (OCBE). Based on this information, the following hypothesis is proposed:

H<sub>5</sub>: There is a significant positive relationship between green work engagement (GWE) and organizational citizenship behaviors for the environment (OCBE).

### **Employees' Psychological Ownership Mediates the Relationship between Environmentally Specific Empowering Leadership and OCBE**

Empowering leadership emphasizes the significance of work, promotes employee involvement in decision-making, instills confidence in their ability to excel, and grants them considerable autonomy (Wang & Yang, 2021; Xiang et al., 2021; Ye et al., 2022). These empowering practices foster a sense of psychological ownership among employees, which, in turn, increases their sense of responsibility for the organization's sustainability and encourages greater engagement in organizational citizenship behaviors for the environment (OCBEs) (Chen et al., 2021; Ye et al., 2022). The mediation effect of EPO suggests that the relationship between environmentally specific empowering leadership and OCBE is not only based on empowering employees, but it also rests on employees developing a sense of psychological attachment to the organization's values and goals. This highlights the importance of promoting a culture of ownership in the workplace to enhance environmental sustainability and employee engagement (Abbas et al., 2022). Based on this information, the following hypothesis is proposed:

H<sub>6</sub>: Employees' psychological ownership (EPO) mediates the relationship between empowering leadership (ESEL) and OCBEs.

### **Green Work Engagement Mediates the Relationship between Environmentally Specific Empowering Leadership and OCBE**

Work engagement has been established as a critical mediator in various studies, serving as a motivational mechanism that impacts performance outcomes (Heyns et al., 2021; Kossyva et al., 2023; Ma, 2023; Pincus, 2023). This study extends the concept by proposing green work engagement (GWE) as a mediating factor between green transformational leadership and organizational citizenship behavior towards the environment (OCBE). Drawing on social exchange theory (SET), it suggests that employees with higher GWE are more likely to engage in quality exchanges with their employers, leading to positive green outcomes (Aboramadan, 2022). While research on this mediating role in the hospitality sector is sparse, a related study in the textile sector found that GWE significantly partially mediated the relationship between green transformational leadership and employees' environmental performance (Suliman et al., 2023). These findings support the hypothesis that green transformational leadership fosters GWE, subsequently enhancing OCBE. Therefore, this study posits that GWE is a pivotal mechanism through which green transformational leadership can inspire employees to adopt and sustain environmentally responsible behaviors. Based on this information, the following hypothesis is proposed:

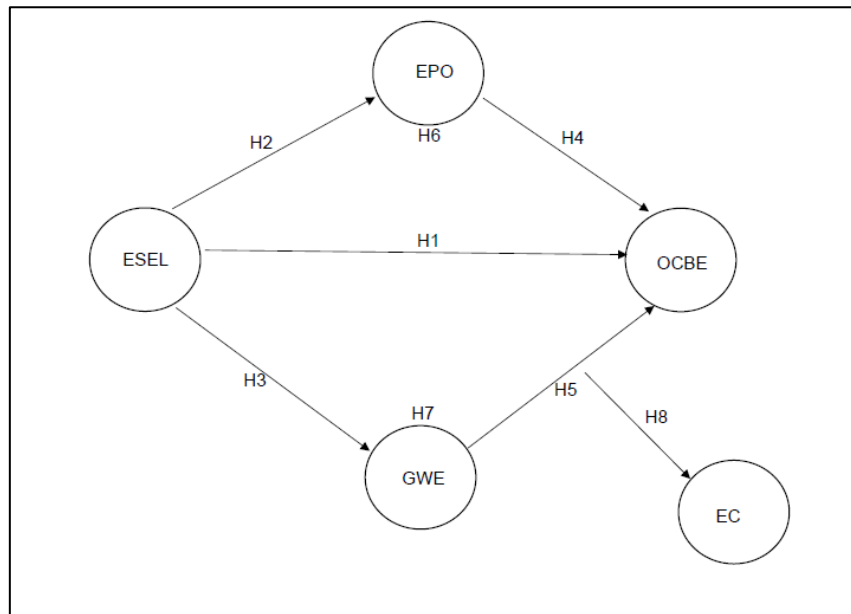
H<sub>7</sub>: Green work engagement (GWE) mediates the relationship between environmentally specific empowering leadership (ESEL) and organizational citizenship behaviors for the environment (OCBE).

### **Environmental Concern Moderates the Relationship between Green Work Engagement and OCBE**

Environmental concern encompasses individuals' awareness of ecological challenges and their willingness to address them through proactive efforts (Chen et al., 2022). Managers with heightened environmental concerns are better equipped to recognize the urgency of environmental issues, fostering collective awareness and promoting green organizational climates by emphasizing shared environmental goals and facilitating knowledge exchange (Abubakar et al., 2022). Such managers actively engage in environmental initiatives and prepare their organizations to manage risks and uncertainties effectively (Wang et al., 2022). Their leadership influences employee behaviors, as employees are more likely to engage in pro-environmental actions that align with the environmental

priorities of their leaders (Zappalà et al., 2023). Leaders with strong environmental values act as role models, translating their attitudes into actionable behaviors that inspire employees to adopt similar practices (Debrah et al., 2021; Lu et al., 2021; Zhao & Liang, 2023). By establishing descriptive norms and conveying clear environmental expectations, these leaders encourage employees to take the initiative in sustainability efforts, strengthening the organization's environmental commitment (Yuan & Li, 2023). Based on such information, the following hypothesis is proposed:

H<sub>8</sub>: Environmental concern (EC) moderates the relationship between green work engagement (GWE) and organizational citizenship behaviors for the environment (OCBE).



**Figure 1.** Conceptual Model  
Source: author's conceptualization

## Research Methods

This study utilized a quantitative research approach, employing a cross-sectional survey to gather data from three-, four-, and five-star hotels in Johannesburg and Tshwane municipalities, South Africa. The focus on larger hotels was based on their more defined environmental strategies than smaller establishments. The research specifically targeted mid-level managers, including department managers and supervisors, who are crucial in implementing green leadership practices within organizations. The study was conducted in two waves: Wave 1 (T1) collected data on green empowering leadership and employees' environmental citizenship behavior (OCBE) to establish an initial understanding of the relationship between leadership empowerment and employees' environmental behaviors. Wave 2 (T2) focused on mediators and moderators influencing this relationship. Previous studies, such as those by Abbas et al. (2022), have similarly employed a two-wave approach to examine the long-term impact of green and transformational leadership on employees' organizational citizenship behavior. Their findings suggest that green leadership positively influences OCBE over time, reinforcing the need for continuous leadership-driven environmental initiatives in the workplace.

To ensure robust data collection, the study employed a combination of convenience and purposive sampling, selecting hotels based on accessibility and specific criteria, such as geographic location, star rating, and environmental practices. A self-administered questionnaire was distributed via phone, email, and in-person visits, with non-responses excluded after two months. The questionnaire maintained participant anonymity and confidentiality. A pilot study involving 30 employees was conducted to validate the questionnaire's effectiveness, with trained field agents assisting in collecting data. The questionnaire was divided into six sections: (1) biographical

information, (2) environmentally specific empowering leadership (ESEL), (3) organizational citizenship behavior toward the environment (OCBE), (4) employee psychological ownership (EPO), (5) green work engagement (GWE) and (6) environmental concern (EC). Data analysis involved descriptive statistics and structural equation modeling (PLS-SEM), with Cronbach's alpha verifying internal consistency (minimum acceptable value of 0.70). Measures included 23 items from Yue et al. (2022) for ESEL, 10 items from Sheikhi and Yousefi (2023) for OCBE, five items from Guarana and Avolio (2022) for employees' psychological ownership (EPO), five items from Tran (2023) for green work engagement (GWE), and three items from Zappalà et al. (2023) for environmental concern (EC). This comprehensive methodology ensured the collection of robust and meaningful data for examining green leadership and sustainability practices in the hotel sector.

## Results and Discussion

### Response Rate and Demographic Details

The actual survey distributed 1100 questionnaires, and 525 usable questionnaires were returned. Table 1 shows the demographic respondents below.

**Table 1.** Biographical Details of the Respondents

Biographical Details	Frequency (N=525)	Percentage (%)
<i>Gender</i>		
Male	296	56.4
Female	229	43.6
<i>Ages (years old)</i>		
Below 20	3	0.6
21 – 30	137	26.1
31 – 40	179	34.1
41 – 50	103	19.6
51 – 60	95	18.1
Above 60	8	1.5
<i>Education background</i>		
Below matric	7	1.3
Matric	172	33
Diploma/degree	308	58.7
Honors	36	6.8
Masters	2	0.2
<i>Years employed in the hotel</i>		
0 – 1	19	3.6
2 – 5	106	20.2
6 – 10	204	38.9
11 – 15	142	27
Above 16	54	10.3
<i>The department where participants work</i>		
Reservations and marketing	15	2.9
Human resource	94	17.9
Finance	106	20.2
General management	156	29.7
Front office	59	11.2
Food and beverage	34	6.5
Housing	26	4.9
Maintenance	22	4.2
Other	13	2.5
<i>Grading of the hotel</i>		
Three-star	128	24.4
Four-star	202	38.5
Five-star	195	37.1

## Reliability and Validity

Partial Least Squares Structural Equation Modelling (PLS-SEM) evaluates a research model's validity and correctness using various methods. These include looking at factor loadings, reliability (measured using Composite Reliability [CR]), and convergent validity (measured using Average Variance Extracted [AVE], as suggested by Fornell and Larcker, 1981). According to Hair et al. (2019), a factor loading of 0.7 or higher should be used for each item, and CR values should be equal to or greater than 0.7 to ensure measurement reliability. Convergent validity is achieved when the AVE value meets or exceeds 0.5 (Fornell & Larcker, 1981). Discriminant validity can be evaluated using the Heterotrait-Monotrait (HTMT) ratio or the Fornell and Larcker criterion, where the highest factor loading for each item should align with its corresponding construct (Fornell & Larcker, 1981; Henseler et al., 2015). Factor loadings indicate how well items measure a specific construct and generally range from 0.5 to 0.9. Construct validity is considered acceptable when factor loadings exceed 0.7. Table 2 highlights the factor loadings for each construct in the model, which ranged from 0.737 to 0.989, with all loadings exceeding the 0.5 threshold. Items with lower factor loadings (less than 0.5) enhanced model validity. These findings confirm that the instruments accurately measure the intended constructs, validating their soundness. The results for AVE, Composite Reliability, and Cronbach's alpha are also summarized in Table 2. The dependability of the data was verified through Cronbach's alpha and Composite Reliability scores, with all constructs achieving values above the acceptable threshold of 0.7. Additionally, the AVE for each construct exceeded 0.5, further supporting the model's validity and reliability.

**Table 2.** Reliability and validity

Variable	Items	Loadings	CA	CR	AVE
Environmentally specific empowering leadership (ESEL)	ESEL1	0.765	0.932	0.891	0.506
	ESEL2	0.837			
	ESEL3	0.855			
	ESEL4	0.871			
	ESEL5	0.864			
	ESEL6	0.989			
	ESEL7	0.819			
	ESEL8	0.843			
	ESEL9	0.833			
	ESEL10	0.935			
	ESEL11	0.816			
	ESEL12	0.741			
	ESEL15	0.887			
ESEL17	0.740				
ESEL22	0.759				
Organizational citizenship behavior for the environment (OCBE)	OCBE1	0.887	0.824	0.946	0.786
	OCBE2	0.932			
	OCBE4	0.893			
	OCBE5	0.903			
	OCBE8	0.899			
OCBE9	0.799				
Green work engagement (GWE)	GWE1	0.873	0.901	0.801	0.515
	GWE2	0.737			
	GWE4	0.871			
	GWE5	0.764			
Employees' psychological ownership (EPO)	EPO1	0.887	0.956	0.931	0.818
	EPO2	0.932			
	EPO3	0.893			
Environmental concern (EC)	EC1	0.830	0.799	0.852	0.657
	EC2	0.803			
	EC3	0.798			

Note: CR is composite reliability, and AVE is an average variance extracted.



### Common Method Bias

Single-source and single-time data may cause common method bias (CMB), leading to aberrant findings. This study examined CMB using the following methods: multicollinearity. The variance inflation factor (VIF) was first used to assess the study construct multicollinearity. VIF values below 3.3 suggest no multicollinearity (Hair et al., 2019). ESEL (1.45), OCBE (1.59), GWE (1.23), EPO (1.89), and RS (1.56) had VIF values below 3.3.

### Discriminant Validity

The results presented in Table 2 indicate the reliability of the items and scales used in the study, as evidenced by factor loadings and composite reliability (CR) values that met or surpassed the minimum threshold of 0.7, as recommended by Hair et al. (2019). To confirm convergent validity, average variance extracted (AVE) was utilized, ensuring that all recorded values exceeded the 0.5 criterion suggested by Fornell and Larcker (1981). Additionally, discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio method, as outlined in Table 3, following the guidelines of Fornell and Larcker (1981). The measurement model successfully meets all the validity and reliability criteria. For evaluating discriminant validity, the Fornell-Larcker criterion was applied, which stipulates that the square root of the AVE in the initial cell of each column must exceed the correlations between variables. For instance, the square root of the AVE for ESEL practices is 0.887, which is higher than the corresponding values in the same column, as shown in Table 4. Similarly, within each column, the initial value for each construct was more significant than all other values, further confirming the model's validity. These results, detailed in Table 3, support the conclusion that the measurement model used in this study demonstrates discriminant validity, as confirmed by the HTMT ratio.

**Table 3.** Discriminant Validity

	Fornell-Larcker Criterion					HTMT Ratio				
	ESEL	OCBE	GWE	EPO	EC	ESEL	OCBE	GWE	EPO	EC
ESEL	0.887									
OCBE	0.655	0.810				0.872				
GWE	0.368	0.571	0.711			0.851	0.873			
EPO	0.378	0.413	0.468	0.717		0.851	0.856	0.858		
EC	0.478	0.482	0.510	0.670	0.835	0.860	0.864	0.872	0.879	

Note: Environmentally specific empowering leadership (ESEL), organizational citizenship behavior for the environment (OCBE), green work engagement (GWE), employee psychological ownership (EPO), and environmental concern (EC).

### Hypothesis Testing

**Table 4.** Hypotheses Evaluation

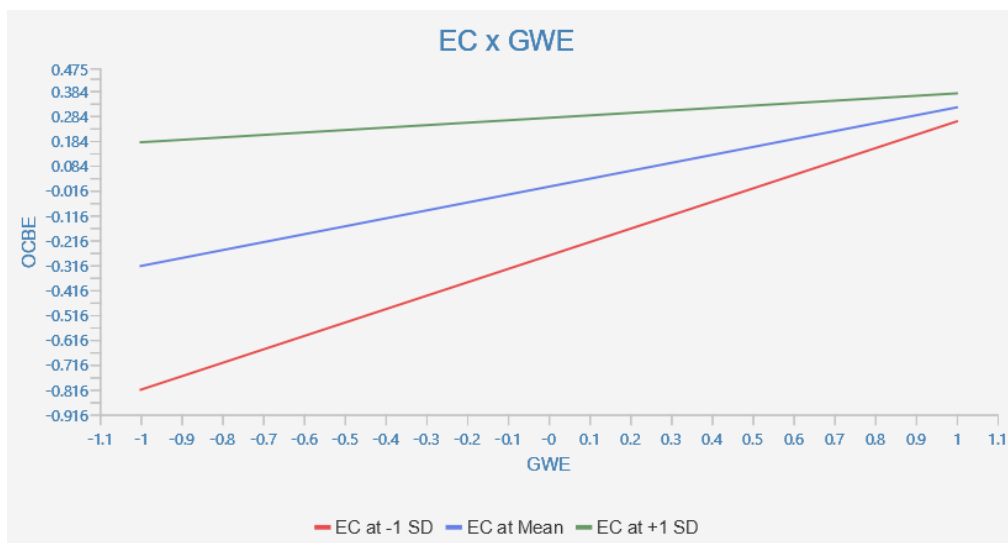
Relationships	Path coefficients	T-statistics	P-values	Recommendation
ESEL → OCBE	0.310	7.263	0.001**	Accept H1
ESEL → EPO	0.315	7.231	0.000***	Accept H2
ESEL → GWE	0.162	3.046	0.000***	Accept H3
EPO → OCBE	0.227	7.120	0.003**	Accept H4
GWE → OCBE	0.338	6.569	0.002**	Accept H5
<i>Specific indirect effects</i>				
ESEL → EPO → OCBE	0.582	1.247	0.001**	Accept H6
ESEL → GWE → OCBE	0.534	2.243	0.000***	Accept H7
GWE*EC → OCBE	0.541	3.445	0.000***	Accept H8

Note: Environmentally specific empowering leadership (ESEL), organizational citizenship behavior for the environment (OCBE), green work engagement (GWE), employee psychological ownership (EPO), and environmental concern (EC).

\*p<0.05; \*\*p<0.01; \*\*\*p<0.000.

Table 4 shows the data analysis assessed five direct and four indirect hypotheses. The outcomes are summarized as follows: H1 – Environmentally specific empowering leadership (ESEL) and Organisational citizenship behavior for the environment (OCBE): Supported, revealing a positive influence of ESEL on OCBE with a significance level of 0.001 ( $\beta=0.310$ ,  $t=7.263$ ). H2: ESEL and Employee psychological ownership (EPO): Supported, indicating a positive influence of ESEL on EPO at the significance level of 0.001 ( $\beta=0.315$ ,  $t=7.231$ ). H3: ESEL and Green work engagement (GWE): Supported, demonstrating a positive influence of ESEL on GWE at a significance level of 0.001 ( $\beta=0.162$ ,  $t=3.046$ ). H4: EPO and OCBE: Supported, demonstrating a positive influence of GWE on OCBE at a significance level of 0.001 ( $\beta=0.227$ ,  $t=7.120$ ). H5: GWE and OCBE: Supported, demonstrating a positive influence of GWE on OCBE at a significance level of 0.001 ( $\beta=0.338$ ,  $t=6.569$ ).

Regarding the mediation and moderation analysis for indirect paths, the findings from the PLS-SEM output revealed significant mediating and moderating effects. Hypothesis H6, which proposed that EPO mediates the link between ESEL and OCBE, was supported ( $\beta = 0.582$ ,  $t = 1.247$ ), with EPO partially mediating 47% of the relationship. Hypothesis H7, which suggested that GWE mediates the relationship between ESEL and OCBE, was also supported ( $\beta = 0.534$ ,  $t = 2.243$ ), with GWE accounting for 46% partial mediation of this link. Additionally, hypothesis H8, which proposed that environmental concern (EC) moderates the relationship between GWE and OCBE, was supported ( $\beta = 0.541$ ,  $t = 3.445$ ). These results highlight the crucial roles of EPO and GWE as mediators and the significance of EC as a moderator, further emphasizing the multi-faceted mechanisms through which environmentally specific empowering leadership fosters pro-environmental behaviors in organizational contexts.



**Figure 2.** Moderation Slope for Environmental Concern

Figure 2 shows the simple slope analysis results, which reveal the following: The red line represents the standard deviation below the mean; the blue line represents the standard deviation at the mean; and lastly, the green represents the standard deviation above the mean. This shows they are positive because they slope from bottom to top and, thus, from left to right. This implies that EC dampens the relationship between GWE and OCBE. The diagram shows that the green line has more EC, and the red line has less EC, so the positive effect has a steeper or positive slope when there is less EC. Moreover, EC moderates the relationship between GWE and OCBE at an average impact.

## Discussion

Green empowered leadership is crucial in influencing organizational citizenship behavior toward the environment (OCBE) in hospitality businesses, contributing to sustainability targets, and promoting environmental improvements. By developing a sustainable culture and optimizing

individual employee variables, organizations can leverage co-employee interactions to create positive environmental dynamics. Studies have shown a strong and positive relationship between environmentally specific empowering leadership (ESEL) and OCBE in hotels (Medhn Desta & Mulie, 2024). Green transformational leadership, in particular, has been found to significantly impact employees' OCBE, as leaders act as key influencers in encouraging environmentally responsible behaviors (Farrukh et al., 2022). However, existing research does not fully explain the mechanisms linking leadership and OCBE. Further studies indicate a significant relationship between ESEL and employees' psychological ownership (EPO), supporting that employees who perceive their organization as environmentally conscious are more likely to develop a sense of ownership (Raimundo & Proença, 2023). This sense of ownership is crucial for fostering employees' engagement in sustainability efforts, as employees are more motivated when their work environment aligns with their values (Ozbozkurt et al., 2022). Research also emphasizes that an environmentally responsible organization enhances employees' identification with the company, leading to a stronger sense of ownership and greater motivation to contribute (Wang et al., 2022). Moreover, environmentally specific leadership has been linked to green work engagement (GWE), which promotes sustainability through employee involvement in green practices (Asante, 2023; Karatepe et al., 2022).

Psychological ownership has been found to mediate the relationship between ESEL and OCBE, highlighting the importance of responsible leadership in fostering sustainability-related behaviors among employees. Employees who feel a sense of ownership are likelier to engage in behaviors beyond their formal roles, contributing proactively to the organization's environmental goals (Nurtjahjani et al., 2022). Similarly, GWE also mediates the relationship between ESEL and OCBE, as leadership that promotes environmentally responsible behaviors enhances employees' engagement in green initiatives (Darban et al., 2022). The findings suggest that leadership practices significantly influence employees' participation in environmentally responsible behaviors, ultimately supporting organizational sustainability goals. Finally, the study highlights the moderating effect of environmental concern (EC) on the relationship between GWE and OCBE. Employees with high levels of EC are more likely to engage in pro-environmental behaviors, amplifying the impact of GWE on OCBE (Jameel et al., 2023). Therefore, fostering environmental concern among employees is crucial for enhancing their engagement in sustainability efforts and promoting OCBE. This research underscores the importance of leadership strategies that inspire and engage employees in environmentally responsible behaviors to achieve sustainability goals.

## **Implication and Conclusion**

This study introduces environmentally specific empowering leadership (ESEL) as a new concept in environmental tourism and the hospitality industry, combining environmental sustainability with employee empowerment and traditional leadership theories. ESEL provides a unique approach to achieving green employee outcomes, specifically in organizational citizenship behavior for the environment (OCBE). The study highlights how ESEL intersects with leadership theories like transformational and servant leadership, offering new perspectives on effective leadership. It also emphasizes the role of employee empowerment in sustainability, suggesting further research into its impact on organizational outcomes, employee engagement, and job satisfaction. Additionally, the study incorporates psychological ownership (EPO) and green work engagement (GWE) as mediators between ESEL and OCBE, shedding light on the interconnectedness of these variables in promoting sustainable behavior within the hospitality industry. Environmental concern (EC) is also explored as a moderator between GWE and OCBE, indicating that leaders can enhance employee engagement in green initiatives by leveraging employees' environmental concerns.

From a managerial standpoint, the study provides valuable insights into how ESEL can foster sustainability through employee empowerment, psychological ownership, and green work engagement. By creating a green organizational culture and empowering employees to engage in pro-environmental behaviors, managers can boost commitment to sustainability and improve OCBE. The study highlights the importance of involving employees in decision-making and offering autonomy, which can enhance their sense of ownership and contribute to sustainability

goals. Managers can also use these insights to design performance management systems that reward environmental contributions, motivating employees to engage in green initiatives. On a policy level, the study's findings can influence international, national, and local policies related to sustainable development goals (SDGs), particularly climate action, responsible consumption, and partnerships for the goals. Policymakers can leverage these conclusions to promote environmentally conscious tourism, reduce waste, and enhance environmental awareness within the hospitality sector. The study also provides insights that can inform labor policies and sustainability programs at both national and international levels, contributing to a more ecologically responsible and sustainable economy.

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