

Value-Led Green Initiatives: Exploring the Mechanisms of the Impact of Leadership Responsibility on Employees' Voluntary Environmental Behaviors

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Abstract

Through a multilevel analytical framework, this study explains how responsible leadership (RL) cultivates workforce ecological citizenship, as manifested through discretionary pro-environmental actions that constitute organizational citizenship behavior for the environment (OCBE). On the basis of cognitive-affective system theory, our research establishes and validates a dual-pathway framework clarifying how RL fosters OCBE. Our analysis of survey responses from 486 employees across multiple industries demonstrates that RL substantially promotes OCBE through parallel cognitive and affective mechanisms. Specifically, our findings demonstrate that environmental passion (EP) serves as a key affective mediator, whereas environmental corporate social responsibility (ECSR) operates as the primary cognitive mediating mechanism. This research contributes meaningful theoretical refinements to existing RL frameworks and yields evidence-based recommendations for organizations aiming to enhance employee-driven environmental initiatives through targeted leadership interventions. These contributions advance both the theoretical discourse and practical implementation of workplace environmental management strategies.

Keywords: *responsible leadership, organizational citizenship behavior for the environment, environmental passion, environmental corporate social responsibility*

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1 INTRODUCTION

In recent years, the principles of universal environmental stewardship and the recognition of ecological resources as invaluable assets have highlighted the growing global commitment to sustainable environmental conservation (Liang et al., 2025). Organizations across industries are now required to implement corporate ecological performance systems and practices (Bai et al., 2023; Zhang et al., 2024). These organizations have significantly contributed to environmental degradation, necessitating substantial resource investment and specialized considerations to achieve ecological sustainability (Andersson et al., 2013; Bai et al., 2022; Robertson & Barling, 2017). Employees are crucial for gaining sustainable advantages, and responsible organizations actively promote ecological initiatives through their workforce (Abbas et al., 2022; Singh et al., 2020). However, employees' indifferent attitudes toward environmental measures have consistently posed a serious concern for organizations, prompting explorations of various research avenues to better understand the factors influencing employees' organizational citizenship behavior for the environment (OCBE).

As critical organizational stakeholders, employees significantly influence the effectiveness of corporate environmental initiatives through their conduct and interpersonal dynamics (Felin et al., 2015). Research indicates that OCBE is influenced by factors at the organizational, leadership, and individual levels. At the organizational level, the workplace climate, human resource strategies, and institutional policies significantly impact employees' environmental behaviors (Paillé et al., 2014; Pham et al., 2018; Zientara & Zamojska, 2018; Wang et al., 2018). At the leadership level, recent empirical studies demonstrate that ethical and paradoxical leadership styles significantly affect employees' OCBE (Abbas et al., 2022; Luu, 2019; Niu et al., 2021; Wen et al., 2020; Zhang et al., 2018). At the individual level, cognitive processes, attitudinal dispositions, and motivational drivers are crucial determinants of pro-environmental workplace behavior (Lamm et al., 2013; Tian & Robertson, 2019; Tian et al., 2019). Despite these advances, there remains a significant gap in research regarding how responsible leadership (RL) specifically influences employees' OCBE, particularly through dual cognitive and affective pathways.

Leaders, who serve as bridges between organizations and employees, play an irreplaceable role in supporting and shaping employees' extra-role behavioral intentions (Ramus, 2001; Ramus & Steger, 2000). However, compared with environmental transformational leadership and ethical leadership, RL has received limited attention in environmental research. Following the classic definitions of Maak and Pless (2006) and Voegtlin (2011), we define responsible leadership as a value-based and principle-driven relationship between leaders and stakeholders who are connected through a shared sense of meaning and purpose with the aim of creating sustainable value and social change. Unlike ethical leadership, which focuses primarily on moral standards within leader–follower dyads, green transformational leadership, which specifically targets environmental goals, or servant leadership, which emphasizes employee development, responsible leadership uniquely balances the interests of multiple stakeholders while addressing broader societal and environmental concerns. A responsible leader who demonstrates genuine concern for followers will attract employee attention and lead by example, directly or indirectly influencing employees' behavior. Therefore, understanding how RL affects employees' OCBE represents a fundamental and practical issue that requires urgent investigation.

Research has examined the internal mechanisms through which RL affects OCBE from various perspectives, including social learning, social exchange, and social identity. Studies suggest that RL can promote employees' OCBE through leader identity, moral identity, self-efficacy, and internal and external motivation (Alwheshi et al., 2024; Han et al., 2019; Ullah et al., 2021; Xiao et al., 2021; Zhao & Zhou, 2019). While these studies provide reasonable explanations from the cognitive and emotional perspectives, they focus primarily on moral dimensions without adequately considering environmental passion (EP). Research by Choong et al. (2019) and Luu (2022) demonstrates that individuals with strong environmental passion EP typically engage in proactive behaviors that contribute to ecological preservation and sustainability. Despite these valuable contributions, existing research has three notable limitations: (1) inadequate attention to the role of responsible leadership in environmental contexts compared with the role of other leadership styles, (2) insufficient exploration of the emotional pathways connecting leadership to environmental behaviors, and (3) limited integration of dual cognitive-affective mechanisms in explaining the RL–OCBE relationship.

This study is based on cognitive-affective system theory. Developed by Mischel and Shoda (1995), this theory posits that individuals' behaviors result from interactions between their personal dispositions and situational features through interconnected cognitive-affective units.

These units include mental representations, expectancies, emotions, goals, values, and self-regulatory plans that mediate the effects of situations on behavior. We This study propose that environmental characteristics can trigger both the cognitive and emotional components within an individual's personality system, subsequently shaping the individual's behavior. The interaction between personal traits and contextual factors offers explanatory power for variations in cognitive processing, emotional responses, and behavioral outcomes. Within this framework, we This study examine employee EP, which is defined as workers' willingness to participate in ecological initiatives, and environmental corporate social responsibility(ECSR), which encompasses sustainability activities benefiting communities, as potential cognitive and affective pathways connecting RL with employees' environmentally supportive behaviors.

Our This research advances existing theoretical frameworks in three significant ways. First, this investigation, grounded in cognitive-affective system theory, expands the mechanistic understanding of the relationships between RL and OCBE while emphasizing both employee welfare and broader ecological considerations among stakeholder interests. Second, this study reveals the emotional pathways through which RL influences OCBE by analyzing the mediating role of EP, thereby contributing novel insights to the literature. Third, it This study enhances the comprehensiveness of the research framework by examining how ECSR cognitively mediates the relationship between RL and OCBE.

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Responsible leadership and OCBE

OCBE encompasses voluntary environmental initiatives that employees undertake without formal directives or rewards from their organization's incentive system. It complements broader environmental citizenship behavior and corporate sustainability strategies (Daily et al., 2009). Boiral and Paillé (2012) categorized OCBE into three distinct types: environmental initiative, participation, and assistance. Examples include employees' efforts to conserve resources, reduce energy consumption, strengthen environmental protection, assist colleagues, and propose environmentally friendly work suggestions (Afsar et al., 2020). De Groot and Steg (2010) established that environmentally conscious initiatives offer dual benefits—they address ecological challenges while simultaneously enhancing organizational development.

RL demonstrates behavioral characteristics that balance corporate interests with those of diverse stakeholders (Han et al., 2019). This approach extends beyond traditional leader–subordinate relationships by integrating leadership qualities with social responsibility, emphasizing the "triple bottom line" framework of economic, social, and environmental considerations. RL remains attentive to the needs and expectations of multiple stakeholders (Afsar et al., 2020; Boiral & Paillé, 2012; Wen & Xia, 2015). Bandura's (1986) social learning theory proposes that the primary mechanism through which individuals acquire new behaviors is via the observation of others' conduct and the subsequent consequences of such actions. When employees interact with leaders, they observe and emulate the leaders' environmental practices, gradually adopting and internalizing these values (Han et al., 2019) and subsequently exhibiting OCBE. This influence process is further supported by recent research showing that responsible leaders who consider multiple stakeholders' interests create a sustainability-oriented climate that fosters employees' environmental citizenship behaviors (Alwheshi et al., 2024; Yang et al.,

2025; Zhang et al., 2021a; N. Zhang et al., 2021b). This influence process aligns with established psychological mechanisms of social identification and observational learning.

In summary, this study proposes the following hypothesis:

H1: RL positively influences OCBE.

2.2 Responsible leadership and environmental passion

Scholars conceptualize passion as an individual's robust disposition to devote resources and time to endeavors deemed personally significant and gratifying (Vallerand et al., 2003a; Vallerand et al., 2003b). In the environmental context, EP manifests as a controlled positive emotion that stimulates engagement with ecologically oriented objectives (Vallerand et al., 2003b). Robertson and Barling (2013) introduced a novel conceptualization that integrated environmental awareness into models of workplace models, defining it as employees' positive emotions toward environmentally friendly behaviors and their willingness to engage in such behaviors within organizational contexts. Positive emotions, which are characterized by feelings of pleasure (Guo & Wang, 2007), have been extensively investigated for their impact on employee attitudes, behaviors, and organizational performance (Avey et al., 2008; Li & Wang, 2012).

Research by Renwick et al. (2013) suggests that empowering employees to participate in environmental protection initiatives can significantly increase their environmental enthusiasm. Robertson and Barling (2013) further establish that leaders' EP can be transmitted to employees through social learning processes, creating an emotional contagion effect that enhances employees' EP. When employees observe their leaders' genuine environmental concerns and behaviors, they are more likely to develop similar passionate orientations toward environmental protection. RL acknowledges employees as legitimate stakeholders and emphasizes egalitarian dialogue within organizations (Voegtlin, 2011). By implementing participatory strategies, employees become actively engaged in developing ecological guidelines and coordinating sustainability initiatives, thereby deepening their understanding of organizational environmental objectives. Moreover, when leaders empower employees in environmental protection efforts, employees can determine their behavior autonomously, which facilitates the internalization of organizational values and consequently enhances their enthusiasm for environmental protection.

Furthermore, organizations that are guided by responsible leadership disseminate environmental protection concepts, advocate for sustainable behaviors, and cultivate an environmentally conscious atmosphere. Consequently, employees are influenced by these environmentally friendly values and attitudes, further strengthening their commitment to environmental protection. In summary, this study proposes the following hypothesis:

H2: RL positively influences EP.

2.3 The mediating role of environmental passion

EP characterizes individuals who actively engage in environmental initiatives and exhibit pro-ecological behaviors (Robertson & Barling, 2013), representing their emotional commitment to environmental protection. Research has demonstrated that an individual's EP motivates his or

her behavior, inspiring participation in activities aimed at achieving environmental goals (Vallerand et al., 2003a; Vallerand et al., 2003b). Furthermore, positive emotional states such as happiness and excitement foster vitality and motivate individuals to implement change. Consequently, employees who experience environmental passion demonstrate greater enthusiasm for environmental activities (Perrewé et al., 2014).

According to cognitive-affective system theory, situational elements activate individuals' cognitive and emotional responses, subsequently triggering specific behaviors (Mischel & Shoda, 1995). Stahl and De Luque (2014) established that leaders who exhibit strong environmental consciousness typically implement sustainability protocols, communicate personal ecological values, and influence employee behavior through consistent verbal communication and exemplary actions. Responsible leadership acknowledges employee interests, provides empowerment, and cultivates an environmental atmosphere within the organization. This leadership approach enables employees to exercise autonomy, facilitating the internalization of organizational values and enhancing their EP.

When employees develop EP, this affective state heightens their ecological awareness, energy, and commitment to addressing sustainability challenges. Such passion promotes proactive cognitive engagement, encourages the pursuit of effective conservation strategies, and facilitates the acquisition of resources necessary for environmental initiatives. This emotional connection functions as a catalyst for developing intrinsic motivation to engage in ecological activities, ultimately manifesting as OCBE. Thus, the affective intensity associated with EP serves as a critical psychological mechanism connecting responsible leadership practices to employees' discretionary environmental contributions. In summary, this study proposes the following hypothesis:

H3: EP mediates the relationship between RL and OCBE.

2.4 Responsible leadership and environmental corporate social responsibility

According to Carroll (1979), corporate social responsibility (CSR) encompasses a company's deliberate initiatives to meet its economic, legal, ethical, and philanthropic obligations. Carroll's (1979) seminal framework highlights the significance of financial performance, ethical standards, regulatory compliance, and stakeholder consideration. However, ECSR has evolved beyond these foundational elements to integrate environmental protection measures alongside community development and sustainability initiatives (Bhargava & Ligade, 2023; Turker, 2009). This expanded conceptualization functions as an environmental management approach through which organizations implement mitigation strategies and contribute to ecosystem preservation (Ismail, 2009; Rasche et al., 2017).

Maak and Pless' (2006) framework suggests that responsible leadership fosters trust across stakeholder groups through effective CSR implementation, balancing organizational objectives with diverse stakeholder interests (Song et al., 2009). This perspective aligns with research by Fairhurst (2009), who demonstrates that leaders significantly influence followers' behavior, attitudes, and perspectives through a combination of personal characteristics and institutional authority. A systematic literature review by Wen et al. (2016) confirmed that responsible leadership serves as a significant predictor of enhanced responsibility consciousness among organizational members.

As departmental authorities, responsible leaders are instrumental in executing CSR strategies. Their ethical conduct enhances employees' perception of ECSR and strengthens their sense of responsibility. Additionally, leaders' attitudes toward internal and external stakeholders guide employees' understanding of ECSR principles. As primary stakeholders of responsible leadership behavior, employees actively participate in, perceive, and evaluate the organization's CSR activities. When leaders address employees' specific needs, employees typically reciprocate by supporting organizational objectives, thereby developing a strong sense of ECSR. In summary, this study proposes the following hypothesis:

H4: RL positively influences ECSR.

2.5 The mediating role of environmental corporate social responsibility

In addition to fostering employees' environmental enthusiasm through emotional pathways, responsible leaders may influence OCBE through cognitive mechanisms. CSR not only enhances social welfare but also exerts significant moral influence on employees, thereby shaping their behavior (Supanti & Butcher, 2019). According to Rupp et al. (2006), employees engage with CSR initiatives through evaluation, participation, perception, and valuation processes, and their workplace responses vary accordingly. This engagement explains the positive correlations between CSR and both environmentally sustainable conduct (AlSuwaidi et al., 2021; Zhang et al., 2021a; Zhang et al., 2021b) and behaviors that simultaneously benefit organizations and the broader society (Eisenberger et al., 2001; Pearce & Gregersen, 1991) that researchers have documented.

Cognitive-affective system theory posits that individuals classify and encode situational features from both the cognitive and emotional perspectives before exhibiting subsequent behaviors (Mischel & Shoda, 1995). A responsible leader who actively assumes environmental responsibility enhances employees' awareness of ECSR, thus motivating them to engage in OCBE. In summary, this study proposes the following:

H5: ECSR mediates the relationship between RL and OCBE.

In summary, Fig. 1 illustrates this research model.

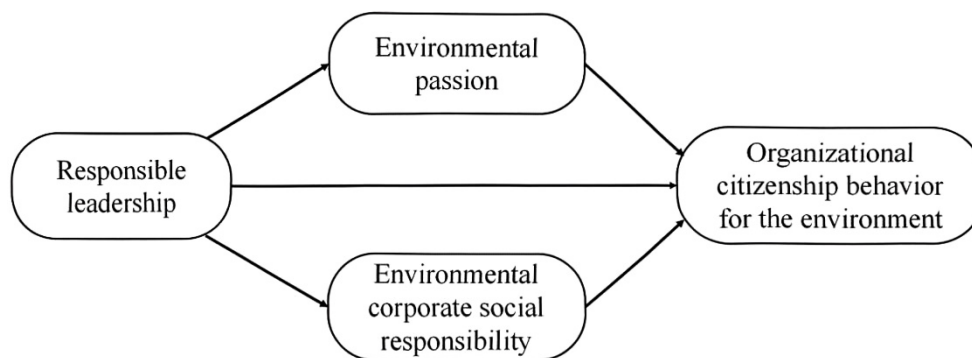


Fig. 1 – The conceptual research model. Source: own research

3 METHOD

3.1 Sample

This research utilized a questionnaire distributed through the Credamo professional data collection platform. employees in Chinese manufacturing and service industries, including personnel from engine manufacturing facilities, oil factories, banks, and insurance companies, were targeted. To mitigate common method bias and causal ambiguity, data collection proceeded in three phases. At Time 1, employees received questionnaires addressing RL and demographic variables online, with a two-day completion window. At Time 2, conducted two weeks later, the participants responded to questions regarding EP and ECSR via the Credamo platform. At Time 3, two weeks after the second phase, employees completed the OCBE scale. A total of 520 questionnaires were initially distributed. After screening for incomplete responses, straight-line answer patterns, and unreasonably short completion times (less than 2 minutes), 486 valid responses were retained, representing a 93.4% effective response rate.

The sample demographics adequately represent the target population for this study. The gender distribution (51.7% female) reflects the balanced gender composition of the Chinese workforce in these industries. The predominance of employees aged 30-39 years (47.9%) and those with 6-10 years of experience (41.3%) ensures that respondents have sufficient organizational exposure to assess leadership behaviors and develop their own environmental attitudes. Additionally, the educational distribution aligns with the typical workforce composition in the Chinese manufacturing and service sectors, with bachelor's degree holders constituting the largest group (46.8%). This sample composition enhances the generalizability of this study findings to the broader Chinese organizational context.

3.2 Measures

This study investigated four key constructs: RL, EP, ECSR, and OCBE. The measurement instruments were adapted from the established international literature and were subjected to a rigorous back-translation protocol to ensure cultural and linguistic equivalence within the Chinese research context. All measurement items employed a consistent five-point Likert-type scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Responsible Leadership: RL was assessed using Voegtlin's (2011) six-item scale, which demonstrated robust internal consistency (Cronbach's $\alpha = 0.809$). Representative items included the following: "My superiors demonstrate their awareness of stakeholder demands."

Environmental Passion: EP was evaluated using Robertson and Barling's (2013) ten-item scale, which exhibited high reliability ($\alpha = 0.850$). Such as "I am passionate about environmental protection" and "I enjoy engaging in environmental behavior."

Environmental Corporate Social Responsibility: ECSR was assessed using the seven-item measurement instrument developed by El Akremi et al. (2018). Such as: "Our company takes action to reduce pollution related to its activities (such as material selection, ecological design, and dematerialization)." This instrument showed strong internal consistency (Cronbach's $\alpha = 0.856$).

Organizational Citizenship Behavior for the Environment: OCBE was assessed using Boiral and Paillé's (2012) ten-item scale, which yielded excellent reliability ($\alpha = 0.863$). The following is a representative item: "I weigh whether my behavior is beneficial to environmental protection before starting work."

Control Variables: Following the methodological standards outlined by Han et al. (2019) and acknowledging prior studies that demonstrate the impact of demographic factors on OCBE, the statistical models incorporated control variables, including gender, age, educational attainment, and organizational tenure.

Based on previous research indicating that demographic characteristics can influence OCBE, we incorporated gender, age, educational level, and organizational tenure as control variables in analysis, following methodological precedents established by Han et al. (2019).

4 RESULTS

4.1 Confirmatory factor analysis

To validate the conceptual framework, this study conducted confirmatory factor analysis (CFA) with RL, EP, ECSR, and OCBE as the primary constructs. Since CFA with numerous measurement items can introduce significant parameter estimation bias (Bentler & Chou, 1987; Wu & Wen, 2011), this study implemented item parceling to mitigate this concern. Specifically, this study created parcels for multidimensional variables according to their theoretical dimensions; the three dimensions of OCBE were organized into three parcels, whereas unidimensional constructs remained unparcelled. Multiple fit indices, including chi-square statistics, the Tucker–Lewis's index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA), were employed to evaluate model adequacy. The results presented in Tab. 1 reveal that the hypothesized four-factor model had superior fit metrics compared with alternative specifications, providing evidence for discriminant validity among the four theoretical constructs.

Tab. 1 – Comparison of measurement models

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA	SRMR
Four-factor model (RL, EP, ECSR, OCBE)	746.069	263.000	2.837	0.913	0.901	0.061	0.049
Three-factor model (RL, EP+ECSR, OCBE)	929.279	266.000	3.494	0.880	0.865	0.071	0.058
Three-factor model (RL+OCBE, EP, ECSR)	1014.382	266.000	3.813	0.865	0.848	0.076	0.060
Two-factor model (RL+OCBE, EP+ECSRE)	1158.561	268.000	4.323	0.839	0.820	0.083	0.064
One-factor model (RL+OCBE+EP+ECSR)	1485.322	269.000	5.522	0.780	0.755	0.096	0.072

Note: + = combination of factors; RL = responsible leadership, EP = environmental passion, ECSR = environmental corporate social responsibility, OCBE = organizational citizenship behavior for the environment

4.2 Common method bias test

To address potential measurement bias arising from reliance on employee self-reports, this study implemented both procedural and statistical remedies. Procedurally, this study (1) temporally segregated the data collection across three distinct time points with two-week intervals to reduce consistency motifs and implicit theories; (2) protected respondent anonymity to reduce evaluation apprehension and social desirability effects; (3) improved the scale items through expert review and pilot testing to eliminate ambiguous or complex wording; and (4) varied the response formats for different measures to reduce method biases from commonalities in the scale endpoints. Statistically, this study assessed common method variance using Harman's single-factor test. The analysis identified six distinct components with eigenvalues exceeding 1.0, with the primary component accounting for only 34.4% of the total variance—substantially below the 50% threshold indicating potential concern. These findings, characterized by the absence of a dominant factor, suggest that common method effects did not substantially compromise the research outcomes, consistent with the established methodological literature (Eby & Dobbins, 1997; Livingstone et al., 1997).

4.3 Descriptive statistics and correlation analysis

Tab. 2 displays the descriptive statistics and correlation matrix for all the variables examined in this study. The correlation analysis indicates that RL exhibited significant positive associations with all three outcome measures: OCBE ($r = 0.612$, $p < .01$), EP ($r = 0.508$, $p < .01$), and ECSR ($r = 0.581$, $p < .01$). Furthermore, the data show that OCBE was strongly and positively correlated with both EP ($r = 0.696$, $p < .01$) and ECSR ($r = 0.552$, $p < .01$). These preliminary correlation patterns align with the hypothesized relationships in the theoretical model.

Tab. 2 – Means, standard deviations and correlations

	M	D	1	2	3	4	5	6	7	8
1. Gender	1.52	0.5	1							
2. Age	3.1	0.834	-.198**	1						
3. Tenure	3.26	0.964	-.245**	.739**	1					
4. Education	3.03	0.906	-.085	.259**	.262**	1				
5. RL	3.917	0.578	.004	-.133**	-.129**	.036	1			
6. OCBE	4.058	0.455	-.068	.004	-.001	.024	.612**	1		
7. EP	4.085	0.436	.014	-.063	-.109*	.027	.508**	.696**	1	
8. ECSR	4.012	0.518	.038	-.138**	-.188**	.031	.581**	.552**	.687**	1

Note: N=486; * $p < 0.05$, ** $p < 0.01$; RL = responsible leadership, EP = environmental passion, ECSR = environmental corporate social responsibility, OCBE = organizational citizenship behavior for the environment

4.4 Hypothesis testing

After controlling for demographic variables (gender, age, education, and organizational tenure), hierarchical regression analyses were performed to investigate the proposed relationships between variables. The resulting regression coefficients across all model specifications are displayed in Tab. 3.

Tab. 3 – Summary of the hierarchical regression results

Variables	OCBE	OCBE	OCBE	EP	ECSR
	Model 1	Model 2	Model 3	Model 4	Model 5
Control variable					
Gender	-0.049	-0.05	-0.051	0.003	0.01
Age	0.035	0.012	0.028	0.042	0.027
Tenure	0.012	0.039	0.035	-0.049	-0.084
Education	-0.013	-0.018	-0.02	0.008	0.024
Independent variable					
RL	0.492***	0.283***	0.350***	0.38***	0.507***
Mediator					
EP		0.547***			
ECSR			0.278***		
F	60.655***	115.19***	65.952***	34.469***	52.822***
R ²	0.386	0.589	0.451	0.263	0.354
ΔR ²	0.38	0.203	0.065	0.247	0.311

Note: N=486; *p < 0.05, **p < 0.01; ***p < 0.001; RL = responsible leadership, EP = environmental passion, ECSR = environmental corporate social responsibility, OCBE = organizational citizenship behavior for the environment

The empirical evidence from Model 1 supported Hypothesis 1 by revealing a statistically significant positive association between RL and OCBE ($\beta = 0.492$, $p < 0.001$). Additionally, Hypothesis 2 was confirmed by the findings of Model 4, where RL demonstrated a significant influence on EP, with a coefficient of 0.380 ($p < 0.001$). Similarly, Model 5 indicated that RL positively influenced ECSR ($\beta = 0.507$, $p < 0.001$), supporting Hypothesis 4. These findings establish the prerequisite relationships for further testing the proposed mediating mechanisms.

After controlling for demographic factors, regression analyses in Models 2 and 3 revealed that RL, EP, and ECSR all exerted significant positive influences on employees' OCBE. Compared with Model 1, Models 2 and 3 weaken the positive correlation between RL and employee OCBE by introducing two variables: EP and ECSR. Therefore, the results of the regression analysis preliminarily confirm the hypothesis of mediating effects.

Fig. 1 illustrates the research hypothesis, demonstrating that RL influences employees' OCBE through two distinct pathways: RL → employee passion (EP) → OCBE and RL → ECSR → OCBE. To validate the robustness of these dual mediating effects, this study employed the PROCESS plugin in SPSS with 5000 bootstrap samples. As presented in Tab. 4, the results confirm significant mediating roles for both pathways, with EP demonstrating a mediating effect of 0.211 on the relationship between RL and OCBE, whereas ECSR has a mediating effect of 0.135. Importantly, neither indirect pathway contains zero within its 95% confidence interval, confirming the statistical significance of both mediating relationships. On the basis of

this situation, it can be concluded that RL partially mediates employees' OCBE through EP and ECSR. Therefore, Hypotheses 3 and 5 are supported.

Tab. 4 – Mediating effect test results

Model	Effect	BootSE	BootLLCI	BootULCI
EP	0.211	0.030	0.152	0.268
ECSR	0.135	0.027	0.086	0.190
Direct effects	0.278	0.051	0.178	0.379
Total effect	0.481	0.054	0.385	0.597

Note: N=486; *p < 0.05, **p < 0.01; ***p < 0.001; EP = environmental passion, ECSR = environmental corporate social responsibility

5 DISCUSSION

This study builds upon the literature to examine how RL may foster OCBE among employees. Drawing from cognitive-affective system theory, we propose that RL operates through dual cognitive and emotional mechanisms, with EP and ECSR potentially mediating this relationship. To test our theoretical framework, we collected data through the professional survey platform Credamo and employed multiple analytical techniques, including structural equation modeling and mediation analysis. The results of our investigation corroborate the theoretical expectations while generating a fresh understanding that has substantial implications for both conceptual frameworks and real-world applications.

5.1 Theoretical implications

This research extends existing theories in several important ways. First, it extends cognitive-affective system theory to the environmental leadership domain, showing how contextual leadership behaviors can activate both cognitive processing (through ECSR perceptions) and emotional responses (through EP) to generate pro-environmental behaviors. A systematic examination of recent scholarship reveals the consensus that leadership plays a pivotal role in facilitating OCBE, as evidenced by numerous studies from 2018 to 2022 (Abbas et al., 2022; Luu, 2019; Niu et al., 2021; Wen et al., 2020; Zhang et al., 2018). Despite several investigations into responsible leadership and OCBE (Abbas et al., 2022; Han et al., 2019; Zhao & Zhou, 2019), the relevant scholarship remains insufficient. The present study addresses this limitation by constructing and empirically validating a comprehensive framework for understanding responsible leadership development within the Chinese cultural context.

Second, it challenges the dominance of single-mechanism explanations in the leadership–OCBE literature by demonstrating the simultaneous operation of both cognitive and affective pathways. From an emotional perspective, our research examines how RL positively influences employees' OCBE. Our empirical analysis demonstrates that EP significantly mediates the relationship between RL and OCBE. This finding aligns with the research of Wang and Peng (2018), who demonstrated that transformational leadership with an environmental focus cultivates workplace EP and promotes sustainable organizational practices. Drawing from cognitive-affective system theory, RL fosters a green organizational atmosphere, and as a positive emotion, EP motivates employees to participate in environmental initiatives (Mischel & Shoda, 1995; Perrewé et al., 2014).

Third, our dual-pathway model enriches the understanding of the RL–OCBE relationship by revealing that both rationality-based evaluations and emotion-driven motivations are necessary for fully explaining how responsible leadership translates into environmental citizenship behaviors. While previous research has offered explanations from both the cognitive and emotional perspectives, with a predominant focus on the moral aspect of responsible leadership's impact on OCBE (Xiao et al., 2021; Zhao & Zhou, 2019), our study reveals that ECSR and EP serve as parallel mediating variables; these factors motivate employees to engage in OCBE through cognitive and emotional pathways, respectively. This empirical investigation broadens the theoretical foundations of responsible leadership by demonstrating its influence on OCBE through dual cognitive (ECSR) and affective (EP) pathways.

5.2 Managerial implications

First, emphasizing the importance of environmental leadership within enterprises yields significant benefits. This study demonstrates that RL substantially influences employees' OCBE. Recognizing the significance of RL can encourage organizations to prioritize responsible candidates when identifying, developing, and selecting leaders, thereby fostering competitive advantage amid market competition. Additionally, our findings indicate that organizational leaders should recognize responsible leadership as a critical factor that enhances employees' EP and awareness of ECSR and that ultimately cultivates OCBE.

Additionally, the findings of our investigation demonstrate that EP serves as a partial mediating factor in the established relationship connecting RL to OCBE. Specifically, RL fosters pro-environmental workplace behaviors by enhancing employees' emotional connection with ecological sustainability initiatives. Fostering employees' EP is crucial for improving environmental performance. Leaders can establish environmental management frameworks that recognize and incentivize environmental stewardship, thereby promoting positive attitudes toward environmental protection. When leaders demonstrate ecological commitment, they cultivate sustainability values and guide personnel toward environmental consciousness, enhancing employees' awareness of eco-conscious practices and encouraging their participation in conservation initiatives.

Third, our research establishes that employee perceptions of ECSR are correlated with increased OCBE. To leverage this relationship, organizations should fulfill their ecological obligations while clearly articulating their sustainability vision to employees. Integrating environmental considerations into strategic planning, coupled with implementing visible green initiatives, enhances staff awareness of corporate environmental commitments, fostering voluntary participation in sustainability efforts throughout the organization.

5.3 Limitations and future research

Despite yielding significant results, this research has several limitations that warrant further investigation and methodological refinements. First, while the scale used to measure RL is well established within the Chinese context, cultural differences may lead to misinterpretation of certain items. Therefore, developing culturally specific assessment instruments for RL across diverse contexts is necessary. Second, this study examines only the positive cognitive and emotional impacts of RL. However, several empirical investigations (Liu & Liu, 2017; Wen & He, 2017) have documented that RL produces a complex spectrum of outcomes, encompassing both beneficial and adverse effects, which warrants more comprehensive examinations in future

studies. Third, despite the use of common method bias analysis, methodological limitations persist owing to the exclusive reliance on self-reported employee data. Future research would benefit from implementing dyadic leader–employee assessments to obtain more objective data and enhance the validity of the findings.

6 CONCLUSION

This study examines the influence of RL on employees' OCBE through cognitive-affective system theory. Our analysis of data from 486 Chinese employees reveals that RL positively affects OCBE through both direct and indirect pathways, with the relationship partially mediated by both EP and employees' ECSR. This dual-pathway model advances the theoretical understanding by demonstrating how RL simultaneously stimulates affective commitment and the intellectual comprehension of sustainability issues among employees, providing a more nuanced interpretation of the influence of leadership on OCBE than previous single-mechanism models do. From a managerial perspective, organizations seeking to enhance ecological outcomes should develop leadership strategies that nurture employees' EP through emotional engagement while enhancing environmental literacy through the transparent articulation of sustainability initiatives. Amid growing global environmental challenges, the findings of this study offer valuable insights for organizations to leverage the dual mediating mechanisms to achieve sustainability objectives through enhanced employee OCBE.

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