








“Do dual signals drive green employee behavior? Effects of organizational support and leadership on environmental self-identity”

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DO DUAL SIGNALS DRIVE GREEN EMPLOYEE BEHAVIOR? EFFECTS OF ORGANIZATIONAL SUPPORT AND LEADERSHIP ON ENVIRONMENTAL SELF-IDENTITY

Abstract

This study examines how perceived organizational support for the environment and green transformational leadership encourage green employee behavior, and whether environmental self-identity strengthens these two influences among employees of 4-star hotels on the island of Sulawesi (North Sulawesi, Central Sulawesi, and Gorontalo), Indonesia. To address the gap in the implementation of sustainability practices at the operational level, the survey was conducted among 379 employees (>2 years of service). The data were analyzed using PLS-SEM (SmartPLS 4) by bootstrapping. The results showed that perceived organizational support for the environment had a positive and significant effect on green employee behavior ($\beta = 0.298$; $t = 6.520$; $p = 0.000$), and green transformational leadership had a positive and significant effect on green employee behavior ($\beta = 0.299$; $t = 6.585$; $p = 0.000$). Environmental self-identity had the strongest direct influence on green employee behavior ($\beta = 0.413$; $t = 9.538$; $p = 0.000$). The moderation test confirmed that environmental self-identity strengthened the relationship between perceived organizational support for the environment and green employee behavior ($\beta = 0.176$; $t = 4.147$; $p = 0.000$) and between green transformational leadership and green employee behavior ($\beta = 0.140$; $t = 4.340$; $p = 0.000$). This suggests that the "green signal" from organizations and leaders is most effective when aligned with employees' environmental identity. Based on social exchange and social identity theories, these findings affirm the importance of strengthening organizational support, developing green leadership, and building environmental self-identity to maintain green employee behavior across work units.

Keywords

perceived organizational support, green transformational leadership, environmental self-identity, green employee behavior

JEL Classification

M12, M14, L83, Q56

INTRODUCTION

The hospitality industry is increasingly required to show a commitment to sustainability because of its high operational environmental footprint (energy, water, and waste). However, formal commitments at the global industry level are not evenly distributed: analysis of the 50 largest international hotel groups shows that the quantity of sustainability reports is still below 60% and barely increased throughout 2014–2021 (Guix et al., 2025). At the same time, despite more than 140 eco-labels for hotels, only about 6.2% of hotels worldwide are certified, and in Asia, only 0.9% (Nelson et al., 2021). Interestingly, evidence from Indonesia shows a market push: in a survey of 535 tourists on Gili Trawangan, more than 50% of respondents were willing to pay a



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premium price for a hotel with local green certification (Nelson et al., 2021). This combination of facts hints at an “implementation gap”: sustainability commitments and signals have strengthened, but consistency of implementation at the hotel level still faces challenges.

At the operational level of hotels, the key to implementing sustainability is largely determined by the behavior of employees when services are run. Therefore, green employee behavior is understood as the pro-environmental behavior of employees (both in-role and extra-role) that is at the core of a sustainable organization (Zacher et al., 2023). Although research on green employee behavior continues to evolve, studies show that its determinants are highly diverse and still require clearer model integration to answer the questions of “what is most encouraging” and “under what conditions” green employee behavior appears consistently (Zhang et al., 2024). Based on social exchange theory, signals of organizational and leadership support are the main triggers of pro-environmental reciprocity in the workplace. Perceived organizational support for the environment signifies the availability of resources, policies, and recognition that facilitate environmentally friendly actions, encouraging employees to “repay” through green employee behavior (Elshaer et al., 2024). Green transformational leadership strengthens this process through consistent sustainability examples, inspiration, and direction, so that green standards of behavior are more clearly implemented in hotel operations (Elshaer et al., 2024).

The difference in employee responses to perceived organizational support for the environment and green transformational leadership needs to be explained through boundary conditions at the individual level. To this end, this study places environmental self-identity as a moderator that explains “when” the influence of organizational support and green leadership becomes stronger (Cheng et al., 2021; Song et al., 2024). Based on social identity theory, employees with high pro-environmental self-identity tend to be more consistent in translating organizational support and green leadership messages into concrete actions, thereby strengthening the perceived organizational support for the environment and green transformational leadership pathways to green employee behavior (Cheng et al., 2021; Song et al., 2024). This study was conducted on 4-star hotel employees on the island of Sulawesi (particularly North Sulawesi, Central Sulawesi, and Gorontalo) to enrich the empirical evidence from relatively under-studied areas while providing practical implications for hotel management to orchestrate organizational support, green leadership, and strengthening pro-environmental identities in encouraging consistent green employee behavior across departments and shifts.

1. LITERATURE REVIEW AND HYPOTHESES

Green employee behavior is increasingly seen as crucial because organizational sustainability is not only determined by policies and technology, but also by employee activities when services/operations are carried out every day at work (Ahmad et al., 2023; Mirahsani et al., 2024). In organizational behavior, green employee behavior is understood as a performance domain encompassing both in-role and extra-role pro-environmental behaviors, such as energy conservation, waste reduction, green SOP compliance, and eco-friendly improvement initiatives (Zacher et al., 2023). In the context of hospitality, service-oriented work that takes place in shifts makes green employee behavior the “fulcrum” of sustainability implementa-

tion. This is because many daily work actions and choices that affect the environment occur at the operational level, for example, in workspaces, service areas, kitchens, and housekeeping. Therefore, understanding the factors that drive green employee behavior in hotel employees is important not only to ensure compliance with green standards but also to maintain consistency of green practices across departments (Zacher et al., 2023).

Research on green employee behavior has grown rapidly in recent years. However, existing findings still point to a variety of explanations, as green employee behavior is influenced by many factors at the individual, occupational, leadership, and organizational levels. Recent reviews confirm that the determinants of green employee behavior are so diverse that a clearer conceptual framework inte-

gration is still needed to answer two key questions: what are the most powerful factors driving green employee behavior, and under what conditions green employee behavior appears consistently in employees (Zhang et al., 2024). Correspondingly, a comprehensive study of pro-environmental behaviors in organizations places green employee behavior as a core element of sustainable organizations and emphasizes the importance of testing not only direct antecedents, but also boundary conditions (individual characteristics or work contexts) that make such influences stronger or weaker (Zacher et al., 2023).

Based on social exchange theory, pro-environmental behavior in the workplace can be understood as a form of reciprocation for the social support and investment felt by employees from organizations and leaders (Chua et al., 2024; Zafar & Suseno, 2024). When an organization or leader provides resources, attention, policies, and recognition of environmental contributions, employees tend to respond with behaviors that align with the organization's goals, including green employee behavior (Zacher et al., 2023). Leitão et al. (2024) found that organizational pro-environmental support encourages employee engagement in green actions because employees feel treated fairly, supported, and trusted, thereby being encouraged to "retaliate" through behaviors that benefit the organization. Thus, social exchange theory explains that organizational and leadership support drives green employee behavior through the principle of reciprocity. It also emphasizes that to understand employee green behavior more fully, attention needs to be directed to the form of organizational support that employees feel most clearly and how such support affects employee behavioral responses (Peng et al., 2020; Aboramadan, Crawford et al., 2022; Elshaer et al., 2024).

Within this framework, perceived organizational support for the environment is an important signal that explains how organizations encourage green employee behavior (Bhatnagar & Aggarwal, 2020; Liu & Qi, 2022). Perceived organizational support for the environment reflects employees' belief that organizations provide policies, facilities, managerial support, and recognition that facilitate eco-friendly actions (Bhatnagar & Aggarwal, 2020; Caesens & Stinglhamber, 2024). Such sig-

nals of support not only show that environmental issues are prioritized but also provide practical "signs" and the necessary resources for employees to be able to carry out green practices in the workplace (Teng-Calleja et al., 2023). Thus, perceived organizational support for the environment minimizes the barrier to "opportunity to act" and affirms that environmental contributions are seen as valuable and valued in real terms by organizations (Karatepe et al., 2022).

From this perspective, social exchange theory predicts that perceived organizational support for the environment encourages green employee behavior because such support fosters mutual obligations (Aboramadan, Kundi et al., 2022; Liu & Qi, 2022). When employees assess that the organization is truly investing in environmental activities through clear policies, supervisory support, and recognition of green behavior, employees tend to feel compelled to "repay" that support with behaviors that align with the organization's goals (Allen, 2023). This reciprocal response can be manifested in the adjustment of daily work behavior to be more environmentally friendly, both through routine activities that maintain resource efficiency and through voluntary initiatives that improve the environmental impact of work units (Paillé & Meija-Morelos, 2019).

In addition to organizational support, leadership serves as a guide and role model. Green transformational leadership is a leadership style that articulates an environmental vision, inspires a sense of sustainability, encourages new thinking about green solutions, and exemplifies environmentally friendly behavior (Mistry, 2025). Thus, green transformational leadership is not just an "appeal" but an orchestration of consistent green behavior directions and standards (Elshaer et al., 2024). In the framework of social exchange theory, green transformational leadership can be understood as a form of social investment of leaders: leaders provide direction, support, and reinforcement that make environmental efforts feel safe and valuable (Lathabhavan & Kaur, 2023; Mukhtar et al., 2025). When employees perceive leadership that is consistent with pro-environment, they are encouraged to retaliate through greener work behaviors, as member leader relationships are perceived to be mutually beneficial (Elshaer et al., 2024). A num-

ber of studies in hospitality have shown that green leadership is positively related to various green employee behaviors, and green organizational support often emerges as an important mechanism that reinforces the influence of leadership on employee behavior. This pattern reinforces the assumption that leader signals and organizational signals go hand in hand in shaping pro-environmental responses (Aboramadan, Kundi et al., 2022).

In terms of organizational support, empirical evidence on hotel employees shows that perceived organizational support for the environment not only encourages task-related pro-environmental behavior but also improves relevant work psychological conditions, so that employees become better prepared and motivated to perform green employee behavior (Elias et al., 2025). Other findings also confirm that the power of organizational support may depend on exchange orientation, meaning that employees' responses to organizational support vary according to their tendency to respond to organizational treatment, in line with social exchange theory predictions (Karatepe et al., 2022). However, social exchange theory alone does not necessarily explain why the same support or leadership signals can result in different levels of green employee behavior between individuals, especially when employees have differences in how they interpret the support and their consistency in translating it into concrete actions (Cooper-Thomas & Morrison, 2018; Gip et al., 2026).

The green employee behavior literature emphasizes the need to include psychological factors that explain the interpretation and consistency of behavior, including identity factors as limiting conditions that can strengthen or weaken responses to organizational and leader signals (Zhou et al., 2023; Zhang et al., 2024; Han et al., 2025). This is where social identity theory is relevant. Social identity theory emphasizes that individual behavior is largely guided by self-identification and the most strongly perceived group norms, so that the actions taken by employees tend to follow the identities they consider important (Ma et al., 2022; Gutierrez et al., 2025). Environmental self-identity describes the extent to which individuals see themselves as "people who care and act in an environmentally friendly way", so that individuals are

encouraged to maintain consistency between self-concept and real actions, including in the context of daily work behavior (Zacher et al., 2023).

The findings suggest that environmental self-identity plays an important role in encouraging pro-environmental behavior in the workplace. Environmental identity acts as a psychological mechanism that makes environmental messages and values easier to understand as part of the individual's self, so that they are more quickly internalized. When employees interpret environmental concern as a personal identity, they will tend to maintain behavioral consistency, not only in supervised situations, but also in daily work routines. Thus, environmental self-identity helps explain why some employees display green behavior stably and repeatedly, while others are more situational, despite being in the same organization (Capasso et al., 2025; Huang et al., 2024).

In addition to having a direct effect, environmental self-identity can work with leadership factors in explaining pro-environmental behavior. Leaders who emphasize environmental values can trigger the identity process by strengthening a sense of meaning, pride, and value alignment so that employees can more easily associate green behavior with their self-concept. In this process, environmental self-identity becomes a "psychological link" that makes leadership messages not stop at the level of discourse but are more likely to be translated into real actions in the workplace (Song et al., 2024).

As an extension of the explanatory framework, environmental self-identity also has the potential to serve as a moderator that explains "when" the influence of perceived organizational support for the environment and green transformational leadership becomes stronger. According to social identity theory, employees with high environmental self-identity tend to capture organizational support and leaders' messages as norms or group standards that are in harmony with their identity. This alignment increases behavioral commitment, so that organizational and leadership signals are more consistently transformed into concrete pro-environmental actions at work (Cheng et al., 2021; Xing & Mohamed Zainal, 2024; Wu et al., 2025).

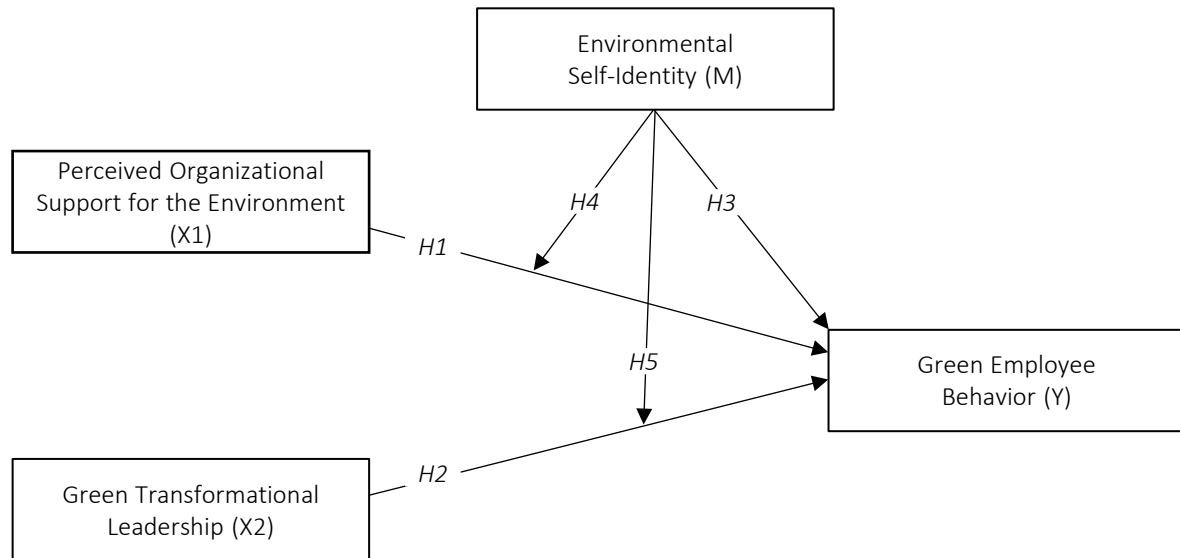


Figure 1. Conceptual framework

Accordingly, this study aims to examine the effects of perceived organizational support for the environment and green transformational leadership on green employee behavior, as well as the moderating role of environmental self-identity.

Based on previous theoretical and empirical studies and conceptual frameworks (Figure 1), this study proposes the following hypotheses:

- H1: Perceived organizational support for the environment affects green employee behavior.*
- H2: Green transformational leadership affects green employee behavior.*
- H3: Environmental self-identity affects green employee behavior.*
- H4: Environmental self-identity moderates the influence of perceived organizational support for the environment on green employee behavior.*
- H5: Environmental self-identity moderates the influence of green transformational leadership on green employee behavior.*

2. METHODS

This study analyzes the relationship between two or more variables using associative research methods and statistical approaches to test theories,

with quantitative data as the primary source of information. The study population includes all employees of 4-star hotels on the island of Sulawesi, Indonesia, especially in three provinces, namely North Sulawesi, Central Sulawesi, and Gorontalo, with a population of 15,988 employees. The respondent criteria were set for employees with a service period of more than two years, assuming they had an adequate understanding of green hotel policies and practices in the workplace. Based on the calculation of sample size using Krejcie and Morgan's (1970) method, this study sampled 379 respondents. Data collection was carried out from November 2025 to January 2026 through a questionnaire distributed using a Google Form.

This paper has received approval from the research and innovation ethics committee of Brawijaya University, and an ethics review has been carried out, resulting in the issuance of a certificate of ethical approval No. 175/EC/KEPK-S3/06/2025. It has also received approval from a 4-star hotel on the island of Sulawesi. All procedures have been carried out in accordance with the social ethical principles of the research, including the confidentiality of respondent information. The questionnaire includes three items arranged as follows: 1) respondent identity, 2) instructions for respondents in filling out the questionnaire, and 3) a list of statements for perceived organizational support for the environment, green transformational leadership, environmental self-identity, and green employee behavior.

Table 1. Respondent characteristics

Profile	Description	Frequency	Percentage (%)
Gender	Male	247	65.18
	Female	132	34.82
Age	Below 30 years	159	41.96
	31–40 years	173	45.64
	41–50 years	35	9.23
	Above 50 years	12	3.17
Current Position	Housekeeping	87	22.96
	Engineering/Maintenance	75	19.79
	Food & Beverage	60	15.83
	Purchasing/Procurement	54	14.25
	HRD/Training	47	12.40
	Front Office	34	8.97
	Sales & Marketing	22	5.80
Education Level	Senior High School	112	29.56
	Diploma	58	15.30
	Bachelor's degree	198	52.24
	Postgraduate	11	2.90
Job Tenure	2 years	116	30.60
	3–5 years	87	22.96
	> 5 years	176	46.44

Table 1 shows that the majority of respondents are male (65.18%). The most dominant age group was 31–40 years old (45.64%). The most occupied posi-

tion is housekeeping (22.96%). In terms of education, most of the respondents have a bachelor's degree (S1) (52.24%). In addition, the majority have more than five years of work experience (46.44%).

The Likert scale is used to measure indicators (Table 2) through questions and statements posed to respondents. This study applied the weighting criteria of answers ranging from strongly agree to disagree (Koo & Yang, 2025). An instrument (pilot test) was conducted on 30 participants who had similar characteristics to the target population, to identify weaknesses of the questionnaire, review sentence clarity and word choice, and improve construct validity (Bujang et al., 2024).

The constructs in this study were measured with instruments that have been widely used and adjusted to the context of hotel employees. Perceived organizational support for the environment was measured using six items developed by Lamm et al. (2015). Green transformational leadership was measured using nine items developed by Al-Ghazali et al. (2022). Environmental self-identity is measured with four items developed by Grębosz-Krawczyk et al. (2021). Green employee behavior is measured with nine items developed by Zacher et al. (2023). Instrument items were chosen because they were concise, frequently used, and efficiently answered without compromising on theoretical accuracy. The number of items is limited to main-

Table 2. Research indicators

Variable	Indicator
Perceived Organizational Support for the Environment	POS1. My organization values eco-friendly behavior
	POS2. My organization appreciates efforts to protect the environment
	POS3. My organization provides policies that support green work
	POS4. My organization provides facilities for eco-friendly practices
	POS5. My organization supports environmental improvement suggestions from employees
	POS6. My organization really cares about environmental performance
Green Transformational Leadership	GTL1. My leader is an example of eco-friendly behavior
	GTL2. My leaders consistently show environmental commitment
	GTL3. My leader emphasizes the value of environmental responsibility
	GTL4. My leader clearly explained the goals of the environment
	GTL5. My leader inspires me to work greener
	GTL6. My leader motivates the team to achieve environmental targets
	GTL7. My leaders are pushing new, more environmentally friendly ways
	GTL8. My leaders are challenging the old resource-wasting way of working
	GTL9. My leaders are pushing for more sustainable work solutions
Environmental Self-Identity	ESI1. I am a person who cares about the environment
	ESI2. Taking care of the environment is part of me
	ESI3. I am proud to be known as an eco-friendly person
	ESI4. I try to consistently act according to my pro-environmental identity

Table 2 (cont.). Research indicators

Variable	Indicator
Green Employee Behavior	GEB1. I work in a more environmentally friendly way
	GEB2. I tried a more sustainable way of working
	GEB3. I am willing to share ideas for more environmentally friendly work improvements
	GEB4. I avoid work actions that can harm the environment
	GEB5. I am able to handle waste/work waste according to the procedure
	GEB6. I give good feedback if there are practices that are risky for the environment
	GEB7. I turn off the power/appliances when not in use
	GEB8. I use enough water and workpieces
	GEB9. I reduce and sort out the use of materials (e.g., paper/plastic)

tain clarity, reduce respondent fatigue, and maintain reliability in structural equation modeling analysis.

Data analysis was carried out using structural equation modeling (SEM) with a partial least squares approach, using SmartPLS 4.0. The evaluation of the measurement model is carried out through an algorithmic procedure to assess the validity and reliability of the constructs, including the internal consistency and accuracy of the indicators. Furthermore, structural model testing is carried out by assessing the path coefficient and its significance. Hypothesis testing of both direct influence and moderation effects was carried out using the bootstrapping procedure, as per the guidelines by Hair et al. (2019).

3. RESULTS

Table 3 shows that all constructs meet the criteria of validity and good reliability. All indicators have adequate outer loading (perceived organizational support for the environment: 0.710–0.810; green transformational leadership: 0.757–0.837; environmental self-identity: 0.820–0.873; green employee behavior: 0.724–0.825). Moreover, the constructs show an AVE above 0.50 (perceived organizational support for the environment = 0.603; green transformational leadership = 0.618; environmental self-identity = 0.729; green employee behavior = 0.608). Internal consistency is also very strong, demonstrated by composite reliability and Cronbach's alpha exceeding the 0.70 threshold (perceived organizational support for the environment: composite reliability = 0.901; α = 0.869; green transformational leadership: composite reliability = 0.936; α = 0.923; environmental self-identity: composite reliability = 0.915; α = 0.876; green employee behavior: composite reliability = 0.933; α

= 0.920). From the descriptive side, the mean value shows a relatively high tendency for respondents' assessments, especially in environmental self-identity (4.044–4.139), while perceived organizational support for the environment (3.490–3.944), green transformational leadership (3.464–4.084), and green employee behavior (3.506–3.997) are at a fairly high level. The variation in answers was relatively greater in some indicators with high standard deviations, which indicated differences in perception/behavior between respondents. Overall, these findings confirm that the research instrument is feasible to use for structural model testing.

Based on Table 4, the heterotrait-monotrait ratio value between the main constructs (environmental self-identity, green employee behavior, green transformational leadership, perceived organizational support for the environment) and the interaction constructs (environmental self-identity x perceived organizational support for the environment and environmental self-identity x green transformational leadership) is well below the threshold of 0.85 (<0.90) (Hair et al., 2019). Thus, the validity of the discriminator is fulfilled, and each construct measures a different concept. The highest heterotrait-monotrait ratio values appeared in the environmental self-identity x green employee behavior (0.562) and perceived organizational support for the environment x green employee behavior (0.561) pairs. However, it remained within safe limits, while other values were relatively lower (green transformational leadership x green employee behavior = 0.514; perceived organizational support for the environment x green transformational leadership = 0.407; environmental self-identity x green transformational leadership = 0.359). For interaction constructs, heterotrait-

Table 3. Validity and reliability

Variable	Loading	AVE	Composite Reliability	Cronbach's Alpha	Mean	Standard Deviation
Perceived Organizational Support for the Environment	0.810	0.603	0.901	0.869	3.831	1.017
	0.809				3.944	0.956
	0.795				3.781	0.979
	0.755				3.841	0.929
	0.775				3.920	0.978
Green Transformational Leadership	0.710	0.618	0.936	0.923	3.490	1.455
	0.775				4.084	0.950
	0.774				3.986	1.009
	0.779				3.918	0.976
	0.800				3.825	1.026
	0.795				3.955	0.992
	0.796				3.986	1.027
	0.837				3.765	1.008
Environmental Self-Identity	0.758	0.729	0.915	0.876	3.612	1.190
	0.757				3.464	1.467
	0.820				4.073	0.928
	0.863				4.100	1.044
	0.873				4.044	1.103
Green Employee Behavior	0.859	0.608	0.933	0.920	4.139	0.991
	0.808				3.997	1.022
	0.793				3.812	1.131
	0.814				3.852	1.076
	0.787				3.883	1.087
	0.825				3.941	1.057
	0.724				3.506	1.289
	0.750				3.517	1.132
	0.750				3.569	1.196
	0.759				3.511	1.515

monotrait ratio values are also low (environmental self-identity x perceived organizational support for the environment with environmental self-identity = 0.410 and environmental self-identity x green transformational leadership with environmental self-identity = 0.232; and environmental self-identity x perceived organizational support for the environment with environmental self-identity x green transformational leadership = 0.402). This shows that there is no overlap of problematic measurements between constructs in the model.

The results of the hypothesis testing in Table 5 show that all direct influences in the model are positive and significant. First, perceived organizational support toward the environment → green employee behavior is significant ($\beta = 0.298$; $t = 6.520$; $p = 0.000$), so H1 is supported. This confirms that when employees feel the organization provides tangible support for the environmental agenda, their green behavior increases. Second, green transformational leadership → green employee behavior is also significant ($\beta = 0.299$; $t = 6.585$; $p = 0.000$), supporting H2. This means that

Table 4. Heterotrait-monotrait ratio

Variable	M	Y	X2	X1	M x X1	M x X2
Environmental Self-Identity	–	–	–	–	–	–
Green Employee Behavior	0.562	–	–	–	–	–
Green Transformational Leadership	0.359	0.514	–	–	–	–
Perceived Organizational Support for the Environment	0.453	0.561	0.407	–	–	–
Environmental Self-Identity x Perceived Organizational Support for the Environment	0.410	0.033	0.155	0.131	–	–
Environmental Self-Identity x Green Transformational Leadership	0.232	0.066	0.184	0.139	0.402	–

Table 5. Hypothesis testing results

Variable	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Result
Perceived organizational support for the environment → Green Employee Behavior	0.298	0.298	0.046	6.520	0.000	Significant
Green Transformational Leadership → Green Employee Behavior	0.299	0.299	0.045	6.585	0.000	Significant
Environmental Self-Identity → Green Employee Behavior	0.413	0.412	0.043	9.538	0.000	Significant
Environmental Self-Identity x Perceived organizational support for the environment → Green Employee Behavior	0.176	0.174	0.043	4.147	0.000	Quasi moderation
Environmental Self-Identity x Green Transformational Leadership → Green Employee Behavior	0.140	0.140	0.032	4.340	0.000	Quasi moderation

green transformational leadership that provides consistent examples, inspiration, and direction contributes to the improvement of green employee behavior. Third, environmental self-identity → green employee behavior showed the largest and most significant coefficient ($\beta = 0.413$; $t = 9.538$; $p = 0.000$), so H3 was accepted. These findings indicate that pro-environmental self-identity is a strong internal driver for the consistency of eco-friendly behavior at work.

Furthermore, the bootstrapping results also showed a significant moderation effect on the relationship between perceived organizational support for the environment and green employee behavior. Environmental self-identity x perceived organizational support for the environment → green employee behavior interactions were shown to be significant ($\beta = 0.176$; $t = 4.147$; $p = 0.000$), so H4 was supported. These findings suggest that the influence of perceived organizational support on green employee behavior is not uniform across all employees. When employees have higher environmental self-identity, the organization's support signals, for example, in policies, facilities, and recognition of green practices, are more easily internalized, so that their impact on green behavior becomes stronger. In other words, environmental self-identity makes it clear “when” organizational support is most effective in driving green employee behavior, when it is aligned with the employee's pro-environmental self-concept.

The same moderation effect also occurs in the relationship between green leadership and green behavior. The environmental self-identity x green

transformational leadership → green employee behavior interaction was significant ($\beta = 0.140$; $t = 4.340$; $p = 0.000$), so H5 was supported. These findings confirm that green transformational leadership effectiveness in encouraging green employee behavior increases in employees with stronger environmental identities. When environmental self-identity is high, leaders' examples, inspirational messages, and encouragement to find more environmentally friendly ways of working are easier to accept and internalize because they align with one's identity, thus encouraging more stable green actions. Overall, these results confirm that perceived organizational support for the environment and green transformational leadership are equally important as green employee behavior drives, and environmental self-identity serves as a boundary conditions that reinforce the influence of both.

4. DISCUSSION

This study analyzes the influence of perceived organizational support for the environment and green transformational leadership on green employee behavior, and tests environmental self-identity as a moderation variable in 4-star hotel employees on the island of Sulawesi, especially in three provinces, North Sulawesi, Central Sulawesi, and Gorontalo. Conceptually, green employee behavior is understood as the core of organizational sustainability practices because employees' pro-environmental behavior determines the quality of environmental policy implementation at the operational level (Tu et al., 2023). However, the literature also confirms that the determinants of green

employee behavior are so diverse that a more integrated model is still needed to explain what signals are most strongly driving green employee behavior and under what conditions that influence is strengthened. This framework enriches the study of employee green behavior by integrating the logic of social exchange and identity, making it relevant to the context of interaction-intensive services and daily work processes (Zacher et al., 2023; Zhang et al., 2024).

In line with social exchange theory, the findings show that perceived organizational support toward the environment has a significant positive effect on green employee behavior (Liu & Qi, 2022). This means that when employees perceive that the organization provides support, policies, resources, and recognition for environmental activities, they are more likely to “retaliate” with more environmentally friendly work behaviors (Liu & Qi, 2022). In the context of hospitality, empirical evidence also shows that the perception of an organization’s support for the environment encourages task-related and other green behaviors, as such support lowers psychological and operational barriers to green action. Thus, perceived organizational support for the environment serves as an institutional signal that activates reciprocal norms: employees feel cared for and facilitated, then express them in actions that are in line with the organization’s environmental goals (Karatepe et al., 2022; Aboramadan, Crawford et al., 2022).

The results of the study also confirmed that green transformational leadership had a significant positive effect on green employee behavior, confirming the importance of the role of leaders as “direction-givers” and green role models in service organizations. Green transformational leadership works through the delivery of environmental vision, exemplary, motivation, and intellectual stimulation that encourages employees to internalize eco-friendly practices as a work priority. In hospitality research, it has been shown that green transformational leadership improves green behavior and environmental outcomes, especially when the leader’s message is consistent and visible in daily practice (Sun et al., 2025). This reinforces the argument that, in addition to organizational support (perceived organizational support for the environment), leadership signals (green transformational

leadership) are key drivers of green employee behavior, especially in service environments that demand procedural discipline and consistency of cross-shift behavior (Tosun et al., 2022; Elshaer et al., 2024).

Beyond organizational and leader signals, the study found that environmental self-identity was significantly and positively correlated with green employee behavior, which is consistent with social identity theory: individuals with strong pro-environment self-identities tend to maintain consistency between “who I am” and “what I do” in the workplace. Research shows that environmental self-identity is a strong predictor of pro-environmental behavior across a variety of contexts, as identity serves as an internal compass that guides behavioral choices even in the face of situational pressures (Gkargkavouzi et al., 2019). In an organizational context, environmental self-identity helps to clarify how environmental policies that are still abstract can be translated into concrete actions at the job level. Employees with a strong environmental self-identity are more likely to interpret small actions, such as energy efficiency, waste reduction, and procedural compliance, as part of their professional identity (Udall et al., 2021).

Furthermore, moderation testing showed that environmental self-identity amplifies the influence of perceived organizational support toward the environment on green employee behavior. From a social identity theory perspective, organizational support will be more effective in driving green employee behavior when the signal is “aligned” with employee identity. Employees with a high environmental self-identity are quicker to interpret perceived organizational support for the environment as group norms and appropriate behavioral expectations, making it easier to translate that support into consistent green actions. These findings are in line with evidence that environmental self-identity can act as a moderator that explains when the influence of organizational/work environment stimuli becomes stronger on pro-environmental behavior (Kuswati et al., 2021). In practical terms, this means that green policies and facilities alone are not necessarily optimal; the impact increases when the organization also fosters the identity of the employee environment (Song et al., 2024; Cheng et al., 2021).

The moderation results also showed that environmental self-identity strengthened the influence of green transformational leadership on green employee behavior. Social identity theory explains that the leader's message and invitation will be easier to accept and internalize for employees who already have a strong environmental identity. Employees interpret green transformational leadership as support for self-worth, so they are more motivated to display green employee behavior in real terms. Green leadership research also shows that (green) identity/self-identity serves as a boundary condition, strengthening the in-

fluence of green transformational leadership on green behavior through value alignment and the strengthening of the green self-concept (Waqas et al., 2025). Thus, the study's main contribution is to show a pattern of "dual signals." Perceived organizational support for the environment (organizational signal) and green transformational leadership (leader signal) drive green employee behavior through the principle of reciprocity (social exchange theory). Moreover, both influences become stronger when employee environmental identity (social identity theory) is high (Wang et al., 2018; Huang & Leung, 2025).

CONCLUSION

This study examines the influence of perceived organizational support for the environment and green transformational leadership on green employee behavior, with environmental self-identity as a moderator among 4-star hotel employees on the island of Sulawesi, focusing on three provinces: North Sulawesi, Central Sulawesi, and Gorontalo. Key findings suggest that perceived organizational support for the environment and green transformational leadership both increase green employee behavior, and environmental self-identity acts as a boundary condition, strengthening the influence of both on employees with high pro-environmental self-identity. The novelty of this study lies in the testing of "dual signals" (organizational signals via perceived organizational support for the environment and leadership via green transformational leadership) that work simultaneously in driving green employee behavior, while clarifying when these signals are most effective through the perspective of social exchange and self-identity theories. Thus, this study enriches the sustainability literature in the hospitality sphere by showing that system support and leader role models need to be understood along with identity factors to explain the consistency of green behavior.

Hotel management needs to strengthen perceived organizational support for the environment through tangible policies, facilities, and recognition, as well as prepare leaders who are able to deliver a green vision, lead by example, and drive sustainable improvement. These efforts will be more effective if accompanied by environmental self-identity-strengthening strategies, such as consistent value communication, meaning-based training, and internal programs that foster pride among environmentally friendly employees. Further research is recommended to test additional moderators such as green climate, workload/service pressure, or organizational culture; use longitudinal or multi-source designs to reduce common method bias; and compare hotel classes (different stars) and regions outside Sulawesi to strengthen the generalizability of managerial findings and recommendations.

AUTHOR CONTRIBUTIONS

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