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Promoting Employee Green Behavior through Ethical Leadership: Mediating Effects of Intrinsic Green Motivation and Perceived Green Work Climate

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Abstract

This research investigates how ethical leadership shapes employees' green behaviour—both task-related and discretionary—by considering the intermediary roles of green intrinsic motivation and employees' perceptions of a green-oriented organisational climate. It also explores whether green extrinsic motivation moderates the link between intrinsic motivation and green behaviour. A quantitative approach was utilised, relying on a structured questionnaire administered to staff in the hotel sector. The study focused on supervisors and departmental managers working in three-, four-, and five-star hotels situated in Pretoria and Johannesburg within South Africa's Gauteng Province. These individuals were selected because they are typically well aware of their organisations' environmental initiatives and strategic directions, have closer insight into senior managers' ethical conduct, and occupy roles that often include environmental performance responsibilities. Participants were chosen through convenience sampling. Of the 450 employees approached, 280 completed the survey. Data analysis was performed using Partial Least Squares Structural Equation Modelling. Results confirmed the mediating effects of green intrinsic motivation and perceptions of a green organisational climate. However, green extrinsic motivation did not significantly moderate the tested relationship. Overall, the findings highlight how leadership style, organisational context, and employee-level factors collectively foster green behaviour. The study also introduces a novel theoretical framework demonstrating that green motivation and perceptions of a green work climate act as pathways through which ethical leadership shapes green behaviour.

Keywords: Ethical leadership, Employee green behaviour, Green motivation, Organisational green work climate perception

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Introduction

Accelerated industrial development has contributed to serious environmental problems, including the depletion of natural resources, reduced biodiversity, and global climatic disruption. These shifts have pushed climate-related concerns to the forefront of organisational discussions and operational practices aimed at long-term environmental preservation. Environmental sustainability refers to responsible engagement with natural systems to prevent resource exhaustion and maintain ecological quality over time. It is now widely regarded as fundamental to both human survival and business continuity [1]. Organisations increasingly recognise that integrating environmental management into broader strategic planning can create lasting competitive benefits [2]. Under growing expectations from customers and government bodies, many firms have tied environmental initiatives to overall organisational performance [2].

Employees represent a critical internal stakeholder group, and their involvement is essential for the success of environmental programmes [3]. Workplace green behaviour encompasses actions undertaken by employees to minimise environmental harm and support sustainability objectives [4]. Such behaviour includes both assigned (in-role) tasks and voluntary (extra-role) actions, each contributing positively to organisational outcomes and long-term value creation [5]. In-role green behaviour

forms part of formal job duties, while extra-role behaviour is discretionary [6]. Organisational leaders can substantially influence environmental outcomes by demonstrating ecological commitment and formulating effective environmental strategies. Leadership remains a cornerstone of organisational achievement [7, 8]. Among various leadership approaches, ethical leadership is particularly relevant to environmental stewardship. It emphasises respect for individuals' rights and promotes behaviours that uphold employee dignity both within and beyond the workplace [9].

Ethical leadership is known to cultivate workplace conditions that strengthen employees' sense of commitment, which often results in more constructive behaviours at work [10]. Ahmad and Umrani [11] together with Islam *et al.* [5] emphasise that further inquiry is needed to clarify how ethical leaders bring about job-related outcomes such as green behaviour. Responding to this research gap, the present study incorporates two forms of green motivation—intrinsic and extrinsic—alongside employees' perceptions of a green organisational climate. Green intrinsic motivation refers to an internal drive that leads individuals to adopt environmentally responsible actions for personal satisfaction [12, 13]. Green extrinsic motivation, in contrast, arises from outward pressures or incentives, including social approval, rewards, or the desire to avoid negative consequences [12, 13]. Perceived organisational green work climate relates to employees' interpretations of organisational practices and priorities that reinforce eco-friendly behaviour [14]. The study, therefore, pursues three objectives:

(1) to determine whether ethical leadership promotes both in-role and extra-role green behaviour in hotel employees;

(2) to test the mediating roles of green intrinsic motivation and perceptions of a green organisational climate between ethical leadership and both forms of green behaviour; and

(3) to assess whether green extrinsic motivation alters the association between intrinsic motivation and in-role or extra-role green behaviour.

Literature Review

The study draws its theoretical foundation from Social Learning Theory (SLT), developed by Bandura [15]. SLT holds that individuals acquire attitudes and behavioural tendencies by observing and mimicking significant others. Brown *et al.* [16] positioned SLT as a central framework for explaining ethical leadership, arguing that leaders shape subordinates' ethical and prosocial behaviour by modelling conduct that followers view as legitimate, principled, and other-oriented.

Research by Khan *et al.* [17] showed that ethical leadership exerts a positive influence on a wide range of workplace behaviours due to leader qualities such as fairness, honesty, altruism, and social consciousness. Their findings demonstrated that supervisors displaying ethical leadership tend to elicit higher levels of organisational citizenship behaviour for the environment. Similar conclusions were reached by Dey *et al.* (2022), who analysed voluntary green behaviour among mid-level managers in Bangladesh. Dey reported that ethical leadership strengthens voluntary green behaviour, which subsequently enhances organisational sustainability outcomes. Ethical leaders articulate environmental goals, communicate green strategies, and act as motivating examples, thereby boosting both required (in-role) and voluntary (extra-role) pro-environmental behaviours. Thus, the following hypotheses are proposed:

H1a: Ethical leadership is significantly and positively associated with employee in-role green behaviour.

H1b: Ethical leadership is significantly and positively associated with employee extra-role green behaviour.

Yidong and Xinxin [18] suggested that ethical leaders energise intrinsic motivation through two main mechanisms:

(1) they frame work as meaningful, link task completion to wider organisational objectives, and promote moral values; and

(2) they create opportunities for employees to develop skills, increasing competence and confidence, which strengthens intrinsic motivation.

Li *et al.* [13], examining green transformational leadership, found that leaders who highlight environmental priorities foster employees' interest in green activities. Their findings confirmed a positive relationship between green transformational leadership and green intrinsic motivation. In environmental settings, ethical leaders can similarly emphasise green organisational objectives, reinforce green norms, and build employees' confidence in executing environmentally focused tasks. This leads to the following hypothesis:

H2: Ethical leadership is significantly and positively linked to employee green intrinsic motivation.

Ali *et al.* [12] reported that individuals with strong intrinsic green motivation show greater intention to purchase eco-friendly electronics. Norton *et al.* (2015) also observed that intrinsic motivation is positively associated with employees' pro-environmental actions. Li *et al.* [13] added that intrinsic motivation enhances employees' green creativity when performing environmentally relevant tasks. These findings imply that internal interest in environmental protection can stimulate employees to engage in both required and discretionary green behaviours. Accordingly, the study proposes:

H3a: Green intrinsic motivation is significantly and positively related to employee in-role green behaviour.

H3b: Green intrinsic motivation is significantly and positively related to employee extra-role green behaviour.

Danish *et al.* [19] reported that intrinsic motivation functions as an explanatory link between ethical leadership and organisational citizenship behaviour. Similar conclusions were drawn by Li *et al.* [13] and Ali *et al.* [12], who showed that green intrinsic motivation can operate as an intervening variable in environmentally oriented contexts. Based on this evidence,

the following hypotheses are advanced: H4a: Green intrinsic motivation positively mediates the relationship between ethical leadership and employee in-role green behaviour. H4b: Green intrinsic motivation positively mediates the relationship between ethical leadership and employee extra-role green behaviour.

In a meta-analysis covering ninety-nine empirical studies, Isci *et al.* [20] found that leadership meaningfully shapes organisational climate. Mishra and Tikoria [21] further stressed that the day-to-day conduct of organisational leaders plays a decisive role in building or weakening the climate. Ethical leadership—characterised by fairness, consistency, and moral integrity—has been shown to strengthen organisational climate within Indian hospital settings. Mateen *et al.* [3] added that an organisation's environmental strategy is closely tied to the development of a green psychological climate. Khan *et al.* [17] argued that ethical leaders and their followers jointly participate in designing environmental strategies. Accordingly, this study proposes: H5: Ethical leadership and organisational green climate perception are significantly positively related.

Ng *et al.* [22] showed that a supportive green work climate encourages employees to engage in voluntary eco-friendly behaviour. Das *et al.* (2019) noted that when workers recognise that environmental protection is valued and rewarded, they internalise a stronger green climate and display higher levels of discretionary green actions. Their findings confirm a positive link between green climate perception and voluntary environmental behaviour. Evidence from Dumont *et al.* [23] and Mateen *et al.* [3] likewise demonstrated that a green work climate is connected to both mandated and voluntary pro-environmental conduct at the individual level. Thus, the following hypotheses are proposed: H6a: Organisational green climate perception is significantly positively related to employee in-role green behaviour. H6b: Organisational green climate perception is significantly positively related to employee extra-role green behaviour.

Khan *et al.* [17] described green organisational climate as a shared view among employees concerning their organisation's environmental priorities, policies, and practices. They also highlighted that ethical leaders articulate clear ethical expectations and promote their adoption among subordinates. Their analysis showed that this climate mediates the association between ethical leadership and environmental citizenship behaviour. Norton *et al.* [14] similarly found that both organisational- and co-worker-level green climate perceptions mediate the influence of sustainability policies on employee proactive and task-related green behaviour. Rubel *et al.* [24] also confirmed that perceptions of a green climate mediate the connection between green HRM practices and pro-environmental employee behaviour. Together, these results imply that green organisational climate may explain how ethical leadership contributes to in-role and extra-role green behaviours. Thus, the study hypothesises: H7a: Organisational green climate perception mediates the relationship between ethical leadership and employee in-role green behaviour. H7b: Organisational green climate perception mediates the relationship between ethical leadership and employee extra-role green behaviour.

Pugno and Sarracino [25] suggested that external incentives—including monetary rewards—can shape sustainable choices and behaviours. Rewards, penalties, and related mechanisms can encourage or discourage green actions. However, Ali *et al.* [12] argued that extrinsic motivators sometimes undermine individuals' intrinsic desire to act in environmentally responsible ways. According to Moser [26], people may be less inclined to behave in environmentally friendly ways when prompted by external rewards than when relying solely on personal motivation. Consequently, the study proposes: H8a: Green extrinsic motivation negatively moderates the effect of green intrinsic motivation on employee in-role green behaviour. H8b: Green extrinsic motivation negatively moderates the effect of green intrinsic motivation on employee extra-role green behaviour.

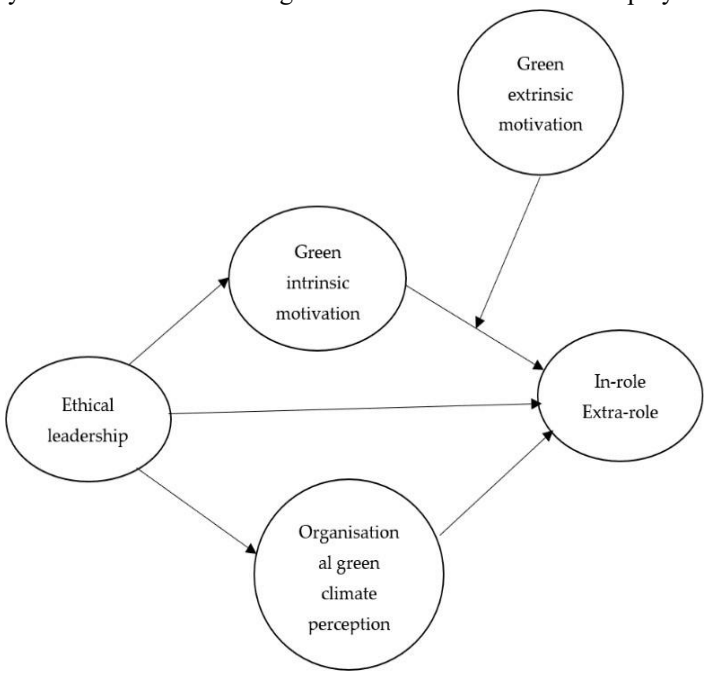

Figure 1. Conceptual model. Source: Author's conceptualisation

Research Methodology

This investigation used a quantitative methodological framework. Data were gathered in a selection of hotels rated three-, four-, and five-star by the Tourism Grading Council of South Africa. The geographical scope covered Pretoria and Johannesburg in the Gauteng Province. The intended participants were supervisors and managers overseeing various functional units within the accredited hotels. Before distributing questionnaires, the research team contacted General Managers or Human Resource Managers of each eligible hotel to clarify the study's intent, highlight its importance, and request the involvement of their staff. Through this preliminary engagement, a pool of 450 supervisors/managers was assembled using a convenience sampling strategy.

Supervisory and mid-level managerial staff were chosen because they generally possess deeper familiarity with environmental strategies implemented in their organisations. They also tend to work closely with top-level leaders, which gives them insight into senior managers' ethical conduct and exposure to roles that incorporate elements of environmental performance [5, 17]. Hair *et al.* [27] note that the ten-times rule is appropriate for determining sample adequacy when employing PLS-SEM. A cross-sectional survey served as the method of data collection, using structured questionnaires. Prior to the main study, a pilot phase was carried out involving ten hotels and thirty supervisor–managers to refine the measurement items. Additionally, two specialists in leadership and sustainability reviewed the questionnaire to ensure clarity and relevance.

A three-item measure adapted from Bissing-Olson *et al.* [28] and Islam *et al.* [5] assessed both in-role and extra-role green behaviours. Ethical leadership was evaluated through a ten-item instrument created by Brown *et al.* [16]. Perceptions of the organisational green work climate were captured using a four-item scale based on Norton *et al.* [14]. Green intrinsic motivation was evaluated through a four-item measure adapted from Ali *et al.* [12] and Li *et al.* [13], while green extrinsic motivation relied on a three-item version from the same sources. Analytical procedures were conducted through Partial Least Squares Structural Equation Modelling (PLS-SEM) using Smart 3 software.

Research Results

Of the 450 questionnaires issued, 280 were returned and accepted for analysis. Among the respondents, 146 identified as female and 134 as male. Age distribution was as follows: 52 participants aged 21–30, 188 aged 31–40, 32 aged 41–50, and 8 aged 51–60. Regarding education, 78 respondents reported Matric/high school completion, while 202 held Post-Matric qualifications such as diplomas or degrees.

Hair *et al.* [27] state that assessing a measurement model requires examining factor loadings, average variance extracted (AVE), Cronbach's alpha (CA), and composite reliability (CR). Factor loadings reflect how well each indicator represents its latent construct, and values above 0.70 are typically required, a standard achieved in this analysis. Construct validity involves examining both convergent and discriminant validity. Convergent validity is demonstrated when AVE exceeds 0.50. Discriminant validity can be judged using the Fornell–Larcker criterion as well as the heterotrait–monotrait (HTMT) ratio. AVE above 0.50 also contributes to verifying discriminant validity. The HTMT ratio, recommended by Henseler *et al.* (2015) as a more reliable discriminator than the Fornell–Larcker method, should fall below 0.9. Reliability, assessed through Cronbach's alpha and composite reliability, is considered acceptable when values reach 0.70 or higher [27].

The measurement model and HTMT outcomes are presented in **Tables 1 and 2**. As indicated in **Table 1**, the factor loadings for every measurement item exceeded 0.7, with the exception of a single ethical leadership indicator, which produced a loading of 0.295. Consistent with the guidance of Hair *et al.* [27], any loading below 0.5 was removed, and this item was therefore excluded. Furthermore, all constructs reported AVE values above 0.5, confirming adequate convergent validity. Indicators of internal consistency—composite reliability and Cronbach's alpha—are considered acceptable when they meet or exceed 0.70, and **Table 1** demonstrates that all constructs surpassed this threshold, confirming the reliability of the measurement scales.

Based on Henseler *et al.* (2015), who argue that HTMT provides a more accurate assessment of discriminant validity than the Fornell–Larcker rule, the study employed HTMT for this purpose. All HTMT values were below 0.9, signifying that discriminant validity requirements were met.

Table 1. Measurement model

Construct	Item	Composite Reliability (CR)	Factor Loading (FL)	Average Variance Extracted (AVE)	CR	SD	Mean
In-role green behaviour (INR)					0.832	**0.95**	**3.95**
	INR1	0.832	0.814	0.622			
	INR2		0.799				
	INR3		0.752		0.834		
Extra-role green behaviour (EXR)						**0.94**	**4.02**
	EXR1	0.834	0.785	0.626			

	EXR2		0.819		0.889		
	EXR3		0.769				
Green intrinsic motivation (GRI)						**1.01**	**3.52**
	GRI1	0.889	0.801	0.587			
	GRI2		0.752		0.823		
	GRI3		0.735				
	GRI4		0.773				
Green extrinsic motivation (GRE)					0.865	**0.99**	**2.08**
	GRE1	0.823	0.780	0.609			
	GRE2		0.809				
	GRE3		0.752				
Organisational green work climate perception (ORG)					0.927	**0.89**	**4.24**
	ORG1	0.865	0.804	0.617			
	ORG2		0.775				
	ORG3		0.812				
	ORG4		0.749				
Ethical leadership (ETH)						**0.82**	**3.60**
	ETH1	0.927	0.788	0.584			
	ETH2		0.802				
	ETH3		0.295 (Deleted)				
	ETH4		0.744				
	ETH5		0.736				

Table 2. Heterotrait–monotrait ratio of correlations

Construct	INR	EXR	GRI	GRE	ORG	ETH
INR						
EXR	0.599					
GRI	0.601	0.573				
GRE	0.701	0.659	0.538			
ORG	0.529	0.601	0.619	0.703		
ETH	0.635	0.574	0.608	0.644	0.698	

Hair *et al.* [27] propose that structural model evaluation should incorporate:
(1) common method bias (CMB),
(2) goodness of fit,
(3) R^2,
(4) Q^2,
(5) effect size, and
(6) overall model fit.

CMB is an important concern since systematic measurement error can distort results. To evaluate both vertical and lateral collinearity, the study applied the full collinearity VIF approach. VIF readings above 3.3 indicate pathological collinearity and possible CMB contamination [27]. The six constructs—ethical leadership behaviour, green intrinsic motivation, green extrinsic motivation, organisational green climate perception, in-role green behaviour, and extra-role green behaviour—produced VIFs of 1.52, 1.84, 1.99, 2.04, 1.93, and 2.15 respectively. Because all values were below 3.3, the model appears unaffected by CMB. Harman's single-factor test further supported this conclusion, with the first factor explaining 33.501%, lower than the 50% cutoff, indicating minimal CMV influence.

The R^2 statistic, central in PLS-SEM assessments, represents the proportion of variance in the dependent variable accounted for by its predictors. Hair *et al.* [27] classify 0.26 as weak, 0.50 as moderate, and 0.75 as substantial. The current study produced an R^2 of 0.509, placing it in the moderate range.

The goodness-of-fit (GOF) index was also considered to evaluate how well the model captured the empirical data. GOF values range from 0 to 1, with thresholds of 0.10 (small), 0.25 (medium), and 0.36 (large) according to Henseler *et al.* (2015). The study obtained a GOF of 0.5556, indicating that the model demonstrates strong explanatory power and suitably represents the observed data.

Predictive validity was further examined through Q^2, which must be greater than zero to confirm predictive relevance [27]. The model generated a Q^2 value of 0.508, illustrating adequate predictive capability.

Effect sizes (f^2) quantify the influence of each exogenous construct on the endogenous variable. According to conventional benchmarks, 0.02, 0.15, and 0.35 correspond to small, medium, and large effects, while values below 0.02 imply no meaningful impact. The effect sizes from this model ranged between 0.237 and 0.294, indicating medium-strength effects.

Model fit was estimated using the standardised root mean square residual (SRMR). This index reflects the average difference between observed and model-implied correlations. SRMR values fall between 0 and 1, with values below 0.05 indicating a superior fit [27]. The SRMR for the present study was 0.02, demonstrating a strong model fit.

Bootstrapping was performed as part of the structural model evaluation, and both path coefficients (β) and T-statistics were reviewed. A T-value exceeding 1.96 (two-tailed, 5% significance) indicates a statistically meaningful effect. Larger β coefficients correspond to stronger influences on the dependent variable. These results are summarised in **Table 3**.

Table 3. Hypothesis testing for direct paths

Path	T-statistics	Coefficient	Decision
H1a ETH→INR	4.082**	0.188	Supported
H1b ETH→EXR	11.147*	0.262	Supported
H2 ETH—GRI	3.969*	0.174	Supported
H3a GRI→INR	4.948**	0.199	Supported
H3b GRI —EXT	9.407 *	0.206	Supported
H5 ETH —ORG	3.301*	0.148	Supported
H6a ORG —INR	5.641**	0.174	Supported
H6b ORG —EXR	8.839*	0.248	Supported

*Note: *p < 0.01; *p < 0.05

Table 3 shows that H1a is supported, as indicated by the coefficients (β = 0.188, t = 4.082, p < 0.05). This demonstrates a significant positive association between ethical leadership and employees' in-role green conduct. The findings for H1b (β = 0.262, t = 11.147, p < 0.01) are likewise significant, confirming that ethical leadership also enhances extra-role green behaviour. Ethical leaders act as behavioural examples, articulate environmental expectations, and reinforce green priorities, thereby encouraging staff to perform both core and voluntary sustainability-oriented tasks.

The data also support the second hypothesis, with results (β = 0.174, t = 3.969, p < 0.01) showing that ethical leadership positively influences workers' green intrinsic motivation. This suggests that ethical leaders emphasize ecological objectives, formalize environmental practices, and build employees' confidence in performing green activities, which strengthens intrinsic motivation toward environmental goals.

Hypothesis H3a is confirmed (β = 0.199, t = 4.948, p < 0.05), revealing a significant positive link between green intrinsic motivation and in-role green behaviour. Similarly, H3b is supported (β = 0.206, t = 9.407, p < 0.01), indicating that intrinsic motivation enhances extra-role green behaviour as well. These results imply that employees who are internally driven to support environmental efforts are more willing to participate in both assigned and discretionary green actions.

The results (β = 0.148, t = 3.301, p < 0.05) validate H5, showing a significant positive connection between ethical leadership and perceptions of a green organisational climate. Ethical leaders promote environmental protection by shaping relevant policies and standards and by clearly communicating them to their teams.

The findings (β = 0.174, t = 5.641, p < 0.05) also demonstrate that organisational green climate perception is significantly associated with in-role green behaviour, while results for H6b (β = 0.248, t = 8.839, p < 0.01) confirm a significant positive link with extra-role green behaviour. When employees believe that their organisation supports environmental practices, both forms of green behaviour become more likely.

Table 4. Mediation effects

Hypothesis	Path (Indirect Effect)	95% Confidence Interval	Total Effect (t-value)	Indirect Effect	Decision	VAF
H4a	Ethical Leadership → Green Intrinsic Motivation → In-role Green Behaviour (ETH → GRI → INR)	0.063 – 0.259	0.246** (2.709)	0.153**	Supported (Partial Mediation)	62.19%
H4b	Ethical Leadership → Green Intrinsic Motivation → Extra-role Green Behaviour (ETH → GRI → EXR)	0.078 – 0.273	0.208* (7.397)	0.168*	Supported (Full Mediation)	80.77%
H7a	Ethical Leadership → Organisational Green Climate → Extra-role Green Behaviour (ETH → ORG → EXR)	0.052 – 0.235	0.284** (3.096)	0.199*	Supported (Partial Mediation)	70.07%
H7b	Ethical Leadership → Organisational Green Climate → Extra-role Green	0.064 – 0.232	0.276* (2.476)	0.178*	Supported (Partial Mediation)	64.49%

	Behaviour (ETH → ORG → EXR)		

*Note: *p < 0.01; *p < 0.05

Table 4 summarises the mediation analyses. Indirect effects were evaluated using bootstrapping, and mediation strength was determined through Variance Accounted For (VAF). The VAF metric compares the indirect effect's beta to the total effect:

- 80% = full mediation
- 20–80% = partial mediation
- < 20% = no mediation [29]

The indirect paths ETH → GRI → INR and ETH → GRI → EXR are both positive and significant, with VAF values of 62.19% and 80.77% respectively. These results reflect complementary partial mediation for the first pathway and complementary full mediation for the second. Therefore, H4a and H4b are supported. Green intrinsic motivation thus partially mediates the link between ethical leadership and in-role green behaviour, and fully mediates the link between ethical leadership and extra-role green behaviour.

The findings additionally show that organisational green climate perception demonstrates complementary partial mediation for both in-role and extra-role green behaviour, supporting H7a and H7b. As **Table 4** illustrates, both the direct and indirect effects are significant, confirming the acceptance of hypotheses four and seven.

Table 5. Moderation results

Path	T-statistics	Coefficient	Decision
H7a	2.079	-0.162	Rejected
H7b	3.108	-0.204	Rejected

Table 5 presents the moderation analysis. The product indicator technique was applied to investigate whether green extrinsic motivation moderates the relationships between intrinsic motivation and the two forms of green behaviour. The interaction outcomes ($\beta = –0.162$, $T = 2.079$, $p > 0.05$) and ($\beta = –0.204$, $T = 3.108$, $p > 0.05$) are non-significant. Accordingly, H8a and H8b are rejected.

Discussion

The study's evidence shows that ethical leadership is strongly associated with employees' green actions, both those required by their job and those performed voluntarily. Earlier investigations, such as Islam *et al.* [5], likewise report that ethical leaders stimulate environmentally oriented tasks and discretionary behaviours. Results also revealed a clear positive link between ethical leadership and green intrinsic motivation. This implies that leaders who act ethically may nurture intrinsic motivation for environmental efforts by articulating ecological priorities, demonstrating support for green initiatives, and enabling employees to build the competence and confidence needed for such behaviours [13, 18]. The analysis further highlighted that green intrinsic motivation has a strong positive influence on both in-role and extra-role green conduct. Similar patterns were identified by Ali *et al.* [12], who observed its effect on intentions to purchase eco-friendly electronic items, and by Norton *et al.* (2015), who reported that intrinsic motivation is linked to pro-environmental behaviour at work. These outcomes collectively point to green intrinsic motivation acting as the mechanism through which ethical leadership shapes employees' green behaviour. Past studies have also identified comparable mediation effects. Ali *et al.* [12] showed that it mediates connections between green thinking, green altruism, and intentions to buy green products, while Danish *et al.* [19] demonstrated that intrinsic motivation channels the influence of ethical leadership toward organisational citizenship behaviour. Additionally, Khan *et al.* [17] reported a significant relationship between ethical leadership and perceptions of a green organisational climate. The current findings therefore suggest that ethical leaders may cultivate an environment supportive of green conduct by modelling appropriate behaviours, setting policies, and choosing strategies that prioritise environmental responsibility. Mishra and Tikoria [21] similarly noted that ethical leadership qualities—integrity, fairness, and moral conduct—are key contributors to shaping organisational climate. Results also show that perceiving a green work climate enhances both types of green behaviour. This aligns with Ng *et al.* [22] and Das *et al.* (2019), who documented its influence on extra-role behaviour, as well as Dumont *et al.* [23], who found that such perceptions positively affect both obligatory and voluntary environmental actions. The present study additionally confirmed that green work climate perception mediates the link between ethical leadership and employees' in-role and extra-role green behaviour. Khan *et al.* [17] similarly found that green climate acts as a mediator between ethical leadership and environmental citizenship. Norton *et al.* [14] reached comparable conclusions, noting that green climate perceptions—whether at organisational or co-worker levels—mediate relationships between perceived sustainability policies and proactive or task-related green behaviour. Finally, the results showed that green extrinsic motivation does not significantly alter the relationship between green intrinsic motivation and either form of green behaviour.

Conclusion

This study provides empirical support for the mediating impact of green intrinsic motivation and organisational green work climate perception, while showing that green extrinsic motivation does not play a significant moderating role. Based on these outcomes, hotels should encourage leadership approaches grounded in ethical principles to reinforce environmentally responsible behaviour. This could include leadership development initiatives, seminars, and training involving both management and frontline staff. Constructing clear organisational policies and strategic guidelines related to environmental practices may further strengthen perceptions of a green climate and advance employee green behaviour. Ethical leaders should recognise their responsibility to model environmentally responsible conduct and to build employees' sense of capability regarding green tasks, for instance, through targeted training. Hotels are also advised to maintain strong internal communication about the environmental consequences of the industry—especially concerning resource consumption—to foster intrinsic motivation for sustainability. Promotion criteria, performance appraisals, and reward frameworks should incorporate green behaviour to raise green extrinsic motivation. Additionally, ethical leaders should design, implement, and clearly communicate green standards, policies, and strategies to reinforce a pro-environmental climate. The study's generalisability is constrained by the fact that data were obtained solely from employees in two South African cities. Its dependence on self-reported information may have introduced response bias. Future research could examine managers' perspectives on employees' in-role and extra-role green behaviour. Because the study employed a cross-sectional design, causal interpretations are limited; longitudinal approaches would be useful for future work. The convenience sampling method may also have contributed to sampling bias. Furthermore, adopting a time-lagged data collection process—gathering responses across multiple intervals separated by months—could help reduce common method bias.

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