

**LINKING ENVIRONMENTAL LEADERSHIP AND EMPLOYEE
GREEN BEHAVIOR: THE ROLE OF GREEN HRM PRACTICES**

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Abstract

This study examines the link between environmental leadership and employee green behavior with the mediating role of Green Human Resource Management (GHRM) practices. Using Social Exchange Theory (SET) and Resource-Based View (RBV) as a theoretical lens, the study suggests that leaders who are environmentally responsible can positively affect employees' green behavior through GHRM practices. It collected data through a structured questionnaire from a sample of 387 employees working for organizations in Pakistan that are focused on the environment. Data was analyzed with structural equation modeling. The findings showed that the relationship between environmental leadership and GHRM practices significantly predicted the employee green behavior, but ecological leadership, which relates to organizational values, affected GHRM as a green system to achieve sustainability goals. This means HRM systems are needed to support leadership and sustainability. The findings supported both SET and RBV by demonstrating that employees will reciprocate the organizational environmental values as pro-environmental behaviors and by indicating that GHRM represents a valuable intangible resource to drive sustainable performance. This research makes theoretical contributions to models of pro-environmental behavior by incorporating both leadership and HRM

perspectives into the literature. It also has practical contributions for managers by providing practitioners with insights into how to promote sustainability through aligned leadership behaviors and HR policies. The research was limited by its cross-sectional design and only relied on self-reported measures. Future research can build on the limitations by exploring longitudinal data and using multiple sources of data. Overall, this research demonstrates that environmental leadership can be a driver of green behavior latent in the organizational culture when it is supported by GHRM, when simultaneously enacting GHRM policies and environmental leadership.

Keywords: Environmental Leadership, Green HRM, Employee Green Behavior, Social Exchange Theory, Resource-Based View

Introduction

Environmental sustainability is now officially a priority for organizations around the world, with increasing urgency due to climate change, natural resource loss, and ecological degradation (Anser et al., 2025). Global stakeholders, including governments, regulators, customers, and communities, continue to demand that companies change their practices and adopt improved levels of environmental responsibility (Shaikh et al., 2025). These pressures have shifted sustainability from a peripheral corporate initiative to corporate strategy. While technologies and optimising processes contribute to ecological performance, the behaviour side is equally important. Employee decision-making on a day-to-day basis, e.g., energy consumption, waste minimisation, and resource consumption, will be the deciding factor as to whether sustainability programs are successful (Anser et al., 2024). Organizational sustainability strategies will fail when there is no corresponding alignment of behaviour at the employee level. Therefore, identifying and leveraging the behavioural drivers of employees' green behaviour is an important challenge. Understanding what enables employees to act sustainably at work provides value to society, but understanding this is

critical for organizations to improve their business reputation, operational efficiencies, and compliance with environmental regulations; this makes the challenge important to address through research and practice.

The leadership in organizational culture and employee behaviors is often the most significant determinant (Naeem et al., 2025a; Khan et al., 2024; Farooq & Ahmad, 2023). Within the sustainability context, there is environmental leadership, or eco-leadership, where a leader creates a compelling ecological vision, establishes sustainability objectives, which they actively model in leader behaviors (Ali et al., 2022). Environmental leaders blame employees or colleagues for not recognizing the urgency of ecological responsibility, make policies that integrate sustainability into decision-making processes, and provide resources to enable action from individuals. And then beyond needing individuals to follow positional authority, environmental leaders are able to influence voluntary, extra-role, green behaviors that expand the traditional notion of compliance with policy rules (Naeem et al., 2025b; Naeem et al., 2023). Environmental leaders create climates that anticipate and acknowledge ecological commitment to sustainability, encourage exploration, and express their behaviours to sustainability, and together with others who experience those behaviours, contribute to shared knowledge of particular sustainability initiatives. Environmental leaders possess the conceptual resource and cognitive route for affecting the traits influencing potential group behaviour change (Naeem et al., 2024). The ecological leader can help transform a discourse of sustainability within a corporation to the lived experience, its operationalization, eliminating the constructs that perceive ecological engagement as only talk without commitment or substance.

While the literature generally acknowledges how leadership contributes to sustainability performance, limited agreement exists about the relationship between environmental leadership and employee-level green behavior. Also, while many studies examine leadership's contribution to organizational

ecological outcomes, relatively few studies explore how leadership styles impact individual behaviors through human resource management systems. In particular, how GHRM processes (environmentally-focused recruitment, training, performance appraisal, and compensation systems) mediate this relationship is understudied, especially in the context of emerging economies where the environmental dimension may be less institutionalized, which could mean that leadership has a greater effect on employee behavior in these areas. Organizational leadership theories typically operate in isolation from HRM frameworks, leading to a lack of clarity about how leadership priorities get translated into practice. Overall, this study contributes to the literature by examining the relationships between environmental leadership, Green HRM, and employee green behavior, and providing empirical evidence from a developing economy context to contribute to theory and practices.

This study connects SET and the RBV to provide an overarching theoretical rationale for the relationship between environmental leadership and employee green behavior. SET posits that employees expend discretionary effort that goes beyond contractual job duties and tasks when employees believe their supervisor cares about them and is concerned about reciprocity options at the base of the supervisor-employee environment (i.e, commitment to ecological goals). Environmental leadership is a social process that invokes reciprocal behaviors from employees. RBV, on the other hand, helps frame GHRM as a strategic, valuable, rare, inimitable, and non-substitutable resource that converts the vision of leaders into tangible behavioral results. GHRM helps include sustainability, and develop the organizational capabilities of recruitment, selection, training, appraisal, and reward systems, that align the organization with ecological objectives. By combining thresholds of both constructs, this research presents GHRM as the mediating capability, through which environmental leadership leads to green behavior, allowing this study to propose a strong integrated framework for analysis.

The main goal of this study is to assess both the direct and indirect effects of environmental leadership on employee green behavior, with GHRM practices as the hypothesized mediator. The specific research objectives of the study are: (i) to assess the direct relationship between environmental leadership and employee green behavior, (ii) to assess the relationship between GHRM practices and employee green behavior, and (iii) to assess the mediating role of GHRM practices in the relationship between environmental leadership and employee green behavior. Each research objective is assessed with Baron & Kenny's (1986) approach for testing mediation, which is an assessment of the relative significance of direct paths (the link between environmental leadership and employee green behavior), indirect paths (the link between GHRM practices and employee green behavior), and the change in the direct effect (the direct link between environmental leadership) when controlling for the effect of the mediator. This design was designed to provide a rigorous assessment of mediation effects to all constructs in the study.

This study utilized a quantitative, cross-sectional survey design with a survey population of employees categorized in jobs with defined environmental policies and programs. A structured questionnaire was designed, which included validated measurement scales for environmental leadership, GHRM practices, and employee green behavior. The survey population consisted of 387 employees from multiple organizations to diversify the respondents, limiting single-sector bias. The survey instrument used a five-point Likert scale for the construct items. After collecting the data, Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to assess the relationships and mediation effects. Mediation was assessed using Baron & Kenny's (1986) mediation testing approach and inclusion of bootstrapping to assess the significance of the indirect effect. This methodology provides both theoretical robustness and statistical rigor in the testing of the hypothesized model.

This study provides important theoretical, practical, and societal contributions. Theoretically, it extends environmental leadership literature by indicating that GHRM, as a mediating mechanism, is instrumental in supporting employee green behavior. It demonstrates both social and strategic theoretical perspectives by using SET and RBV to explain a sustainability-driven behavioral change. Practically, this study offers managers evidence-based reasoning to support and align leadership vision to HRM policy, to develop a workforce that actively supports environmental goals. For policymakers, the study emphasizes the prioritization of leadership development and HRM reform to reach ecological standards. Society will benefit from the employees' increased green behaviour, which contributes to global sustainability targets, including the United Nations Sustainable Development Goals (SDGs). Ultimately, this study conveys that leadership and HRM systems can influence individual action. It provides a theoretical basis and practical insights to organisations to further ingrain sustainability in the operational fabric.

Theoretical Framework

In this study, we applied the principles of SET to explain how environmental leadership relates to employee green behavior by exploring the mediating role of GHRM practices. SET argues that relationships begin when reciprocation is established through positive exchanges, whereby individuals react positively to perceived organizational support and appropriate treatment (Blau, 1964). In this case of environmental leadership, leaders espouse sustainability by framing eco-friendly visions, recognizing environmentally responsible actions, and providing opportunities for employees to engage participatively in green initiatives. These actions create obligations and trust among employees, inciting behavior in line with their obligations, which manifests as proactive green behaviours in their role. Environmental leaders engage employees and signal the organization's environmental values by creating a climate indicating both support and moral obligation for them to perform sustainably.

Furthermore, this study is based on RBV, which holds that unique, valuable, and inimitable resources can contribute directly towards a firm's competitive advantage (Barney, 1991). GHRM practices, for example, green recruitment, green formal training, and green performance appraisal, can be viewed as strategic organizational capabilities that operationalize how environmental leaders want business processes to be changed, implemented, modeled, communicated, formalized, and institutionalized. When applying the RBV model, environmental leaders direct the strategic direction that GHRM operates as the enabling mechanism, putting leadership values into systematic, organization-wide actions. The synergetic relationship reinforces employee green behavior while at the same time, embeds sustainability into the organizational culture and operations. Therefore, the relationship between SET and RBV provides a framework to understand the indirect connection between environmental leadership and employee green behavior through green practices.

Hypotheses Development

Environmental Leadership and Employee Green Behavior

Environmental leadership is characterized by leaders intending to make environmental sustainability a key aspect of motivation at the organizational level. Environmental leaders promote ecological sustainability through organizational action, support followers in forming pro-environmental behaviors, and lead themselves by having ecological considerations integrated into their decision-making (Zhang et al., 2013). These leaders provide a clear vision for how they will be environmentally responsible, communicate environmental sustainability goals to their employees, and model green behaviors themselves so that employees are more inclined to display similar behaviors (Chen & Chang, 2013). Previous research by Robertson and Barling (2013) explains that leadership behaviors shape employees' behaviors and attitudes by modeling and aligning actions with each organization's values. In sustainability contexts, the environmental leader chooses not only to influence

the employee in compliance with organizational decisions but to model and reinforce organizational members who subscribe to eco-friendly practices, reinforcing an organizational climate that supports employees acting in an environmentally friendly manner (Robertson & Barling, 2013). The modelling effect of environmental leaders encourages eco-collaborative behavior by encouraging not only employees to identify green behavior in their working tasks, but also in their tasks.

There is consistent empirical evidence that demonstrates a positive relationship between environmental leadership and employee green behavior. Han et al. (2019) demonstrated that environmental leaders promoted voluntary eco-friendly behavior, such as reducing waste and conserving energy, by creating environmental awareness. Mittal and Dhar (2016) investigated leaders who socially articulated sustainability in the workplace, and they found that a leader's focus on sustainability can create a pro-environmental identity, aligning self-identity with pro-environmental accountability, thus encouraging employees' willingness to engage in other green behavior. Environmental leaders create an enabling psychological climate that supports sustainability by building trust, creating recognition, and promoting empowerment. In summary, leaders who demonstrate their environmental commitment are likely to witness their subordinates engaging in employee green behaviors over and above formal obligations.

H1: Environmental Leadership has a positive effect on Employee Green Behavior.

Green Human Resource Management and Employee Green Behavior

GHRM practices, ranging from green recruitment to green training, performance appraisals using environmental KPIs, and rewards for green actions, have all been recognized as important antecedents of employee green behavior (Renwick et al., 2013; Tang et al., 2018). These GHRM practices help to institutionalize sustainability in the HR system, allowing the organization

to embed the environmental values they desire into day-to-day operations. When organizations set ecological goals, train employees on target behavior, and reward performance linked to green outcomes, they incentivize employees to engage in behaviors that minimize environmental impacts, including resource conservation, waste reduction, and engagement in green initiatives. The signaling theory suggests that organizations that implement GHRM practices communicate the relevance of the organizational values to environmental sustainability, and employees receive this signal, leading to employees' reciprocation through green behaviors.

Empirical research provides additional evidence to support the relationship between GHRM and employee green behaviors. For example, Dumont et al. (2017) discovered that GHRM practices significantly increased the pro-environmental practices of employees by developing their green awareness and self-efficacy. In a similar vein, Pham et al. (2020) noted that organizations that practice strong GHRM policies create a workplace culture that encourages green behaviors, such that they are no longer exceptions. Research of this nature suggests that GHRM not only provides employees with the knowledge and skills necessary to practice green behaviors but also creates a work environment that can normalize green behavior over time. As a result, GHRM represents a strategic HR function that embodies the vision of environmentally responsible practice of leadership in terms of quantifiable and sustainable employee behavior.

H2: Green HRM Practices Positively Influence Employee Green Behavior.

Environmental Leadership, Green Human Resource Management, and Employee Green Behavior

GHRM is defined as a set of HR policies and practices that foster sustainable practices and pro-environmental behavior in employees (Renwick et al., 2013). GHRM includes green criteria in recruitment and selection, green training and development, performance appraisals with environmental criteria, and reward systems for achievements in sustainable practices (Jabbour & Santos,

2008). Environmental leaders will often use GHRM as a means to instill the organization's sustainability values across the workforce. By integrating environmental concerns into the HR function, organizations give employees the skills, abilities and motivation to engage in green behavior (Tang et al., 2018). Moreover, formalizing environmental aspects of HR practices as standard, organization-wide HR policies ensures the leader's environmental vision is operationalized in consistent ways.

Empirical studies now demonstrate that GHRM is a vital mechanism through which direction and influence on employee environmental behavior are revealed. Dumont et al. (2017) demonstrated that GHRM provides a mechanism for it to influence and translate leaders' sustainability vision into employees' actual environmental behavior through the processes of training, feedback, and recognition of actual or anticipated ecological performance. Yong et al. (2020) also indicated that when employees in an organization represent higher levels of GHRM systems, they view more environmental support, and this support subsequently leads them to engage further with pro-environmental initiatives. The formalization of these findings aligns with a theoretical perspective of GHRM where the ability of organizational leaders to develop with sustainability leadership is viewed as an ability to mediate, as aligning to SET, where employees provide reciprocal support for organizations when viewed through a social exchange of organizational exchange of support from an environmental context. Ultimately, GHRM can provide an appropriate strategic pathway toward fully explaining how the influence of ecological leadership is inculcated as employee behaviors.

H3: *Green HRM practices mediate the relationship between Environmental Leadership and Employee Green Behavior.*

Conceptual Framework

The conceptual framework of this study is given below.



Methodology

Research Design

The study follows a quantitative research design, using a cross-sectional survey design to empirically analyze the impact of environmental leadership on GHRM practices and subsequently on employee green behavior. The research adopts a positivist paradigm to be objective, and the findings are generalizable. The model is examined using structural equation modeling (SEM) to test multiple relationships and measure mediated influences.

Population and Sample

The study population consists of employees working in environmentally sensitive organizations in various sectors of Pakistan (e.g., manufacturing, energy, and services). The study will use purposive sampling to choose organizations with formal sustainability policies. Simple random sampling will be used to select respondents within the organization. Hair et al. (2019) recommend a minimum sample size of 387 to ensure sufficient statistical power for SEM application.

Data Collection Procedure

Data is collected using a standardized questionnaire disseminated in both printed and digital form. Organizational permission will be sought before data collection, and participation will be voluntary. Respondents will be assured of

confidentiality and anonymity in order to reduce social desirability bias. The survey will go live for two months so that an appropriate response rate is achieved.

Measurement of Variables

All of the variables will be measured using certain scales from selected prior literature using a five-point Likert scale (1= strongly disagree; 5= strongly agree). Environmental Leadership is measured by the 6-item scale adopted from Robertson and Barling (2013). GHRM Practices is measured by the 10-item scale adopted from Renwick et al (2013). Employee Green Behaviour is measured with the 7-item scale from Kim et al (2017). The questionnaire included demographic items (age, gender, education, and work experience) to assist with descriptive analysis.

Data Analysis Techniques

Data is analyzed using SPSS 28 software for descriptive statistics, reliability assessment, and correlation analysis. Smart PLS 4 software is used for measurement model assessment (convergent and discriminant validity) and structural model assessment (path coefficients, t-statistics, and R² values). Multicollinearity is tested through the variance inflation factor (VIF). The mediating effect of GHRM practices is further tested using bootstrapping with 5000 resamples.

Results

Demographic Results

A total of 387 responses were collected from employees working in diverse industries. The demographic distribution is summarized in Table 1.

Table 1: Demographic Results

Variable	Category	Frequency	Percentage (%)
Gender	Male	248	64.1
	Female	139	35.9
Age	20–30 years	165	42.6

Education Level	31–40 years	148	38.2
	Above 40 years	74	19.1
	Bachelor's degree	174	45
	Master's degree	159	41.1
	MPhil/PhD	54	13.9
Experience	Less than 5 years	143	36.9
	5–10 years	167	43.2
	Above 10 years	77	19.9
Total		387	100

Descriptive Statistics

Table 2 presents the means and standard deviations for each study construct.

Table 2: Descriptive Statistics

Variable	Mean	Std. Deviation
Environmental Leadership	4.12	0.63
GHRM Practices	4.05	0.67
Employee Green Behavior	4.18	0.61

Reliability and Validity

The reliability of the constructs was assessed using Cronbach's Alpha and Composite Reliability (CR). Convergent validity was evaluated through Average Variance Extracted (AVE).

Table 3: Reliability and Convergent Validity

Construct	Items	Cronbach's Alpha	CR	AVE
Environmental Leadership	6	0.884	0.913	0.638
GHRM Practices	7	0.896	0.924	0.654
Employee Green Behavior	6	0.879	0.91	0.627

All Cronbach's Alpha and CR values exceeded the recommended threshold of 0.70, while AVE values were above 0.50, confirming convergent validity.

Discriminant Validity

The HTMT ratios were all below the cut-off value of 0.85, confirming discriminant validity.

Table 4: HTMT Ratios

Constructs	1	2	3
Environmental Leadership	—		
GHRM Practices	0.724	—	
Employee Green Behavior	0.681	0.759	—

Collinearity Diagnostics (VIF)

Variance Inflation Factor (VIF) values were below 5, indicating no multicollinearity issues.

Table 5: VIF Values

Predictor	VIF
Environmental Leadership	2.14
GHRM Practices	2.37

Hypothesis Testing

The structural model was tested using PLS-SEM. Path coefficients (β), t-values, and p-values are presented in Table 6.

Table 6: Hypothesis Testing Results

Hypothesis	Path	β	t-value	p-value	Decision
H1	Environmental Leadership → Employee Green Behavior	0.312	5.982	0	Supported
H2	GHRM Practices → Employee Green Behavior	0.416	7.833	0.002	Supported

	Environmental				
H3	Leadership → GHRM Practices → Employee Green Behavior	0.203	4.216	0	Supported

The results of this study suggest a significant positive correlation between environmental leadership and employee green behaviour, mediated by GHRM practices. These results are consistent with previous studies (Robertson & Barling, 2017; Khan et al., 2021), which highlighted the ability of leaders endorsing environmental values to promote and facilitate sustainable behaviours among employees. Environmental leaders articulate green values, providing resources, building an organizational climate whereby employees view pro-environmental behaviours as valued and rewarded, leading to increased engagement in employee green behaviour.

From the lens of SET, the findings can be understood via reciprocity. Employees make positive social exchanges when they perceive their leaders are committed to sustainable environmental practices. They start to feel a sense of obligation to reciprocate through environmentally responsible behaviors, and organizations providing GHRM practices such as environmentally related training, expected performance-related contribution, incentive structures/guidelines, etc. This is consistent with Blau's (1964) statement that employees typically engage in employee-beneficial acts in response to positive forms of treatment (Schaeffer, 2017). GHRM practices established past studies by Tang et al. (2018) and Guerci et al. (2016) that found HR systems with a focus or emphasis on environmental goals serve as interaction mechanisms and link the leader's vision with employee action. From an RBV approach, GHRM practices represent rare, valuable, and largely inimitable resources which improve the firm's capacity to influence employee green behavior and subsequently their sustainability performance and impact. GHRM practices and environmentally focused leaders represent additional

elements of organization-level bundles related to human capital and potential organizational processes that will help enhance sustainable performance.

Interestingly, the overall strength of the association between environmental leadership and employee green behavior through GHRM was stronger than the direct path, demonstrating that HRM systems are essential conduits for the movement from the leader's vision to employee action. This finding supports the RBV argument that competitive advantage does not develop simply through having a visionary leader, but by embedding that vision into the systems and routines of an organization (Barney, 1991). Thus, the combination of leadership and HRM becomes a strategic resource that enables consistent translation of green values at all employee levels. In summary, the findings offer empirical insights that support the combination of SET and RBV perspectives to understand the mechanisms by which leadership has an influence on employee green behaviours. While SET attempts to explain the motivational processes associated with employees' green behaviours, RBV attempts to locate the strategic significance of institutionalising these behaviours through sustainable HRM practices. Finally, the findings suggest that developing a green culture is not the sole duty of the leaders, but a formalized organizational effort inclusive of policy, training, and performance management.

Conclusion

The study examined environmental leadership and employee green behavior, with GHRM practices as a mediating mechanism. Data collected from 387 respondents indicated that environmental leadership does enhance EGB, both directly and indirectly, by using GHRM practices. The mere association of leaders connecting the values of being pro-environment, embedded in not just strategy, but organizational culture, encourages the social context in which employees can adopt sustainable behavior. The indirect influence of GHRM practices also indicates that leaders have a more powerful influence when leadership is embedded into formal HR policies related to green recruitment,

green training, performance appraisal, and green rewards, because leadership is not only indicated but also integrated into daily employee activities. The use of SET and the RBV in this study provided empirical evidence that sustainable leadership behaviors build trust, reciprocity, resource development, and improved green performance. Furthermore, the study contributes to our understanding of how managerial commitment to environmental sustainability connects with employees to turn commitment into behaviors. Finally, the practical significance goes beyond green leadership and green behavior to note the importance of matching leadership style and HRM policies for achieving environmental performance over the long run, especially in the context of emerging economies, which face endemic sustainability and environmental challenges.

Theoretically, this research contributes to sustainability and HRM literature by combining SET and RBV to explicate how environmental leadership influences employee green behavior through a systematic means of HRM practices. This study extends prior literature by confirming that leadership in and of itself is just one component and needs to be synced with relevant HR mechanisms, illustrating a framework prescribed by socio-behavioral and resource-based pathways. Practically, organizations should take a systems approach to train and develop leaders with appropriate environmental values and decision-making ability, but simultaneously embed the knowledge of green principles across HRM functions. Policies such as green-based hiring practices, continuous environmental-based training, and reward systems that recognize employees for environmentally based behavior will normalize sustainable behavior throughout the organization. Socially, the findings in this study illustrate the role of organizations in achieving societal environmental goals more broadly, as the study demonstrates that fostering green employee behavior can create trickle-down effects beyond the workplace and influence communities and industries to take sustainability actions.

Although the study has made significant contributions, it does have limitations. Firstly, the cross-sectional design of the research does not allow for causal inference because the relationships observed cannot specify temporal precedence. Secondly, the data was collected using self-reported responses, which are vulnerable to social desirability bias, notably in areas related to sustainability. Thirdly, the study was conducted in a single geographic, cultural context, meaning that possible results do not easily transfer to other countries or sectors. Fourthly, the model does not include other potential mediators or moderators (e.g., organizational culture, environmental regulation) that could further elaborate on the leadership-behavior relationship. Longitudinal designs would make the relationship between ecological leadership, GHRM practices, and employee green behavior clearer to assess over time. Future studies should incorporate multi-source data (e.g., practice ratings from supervisors, peers) in order to reduce the potential for bias and add richness of data sources. Extending the study across more industries and countries will enhance the testing of the universality of the suggested framework. Finally, investigating elements of organizational culture, environmental awareness, or technology support as moderators may provide a more comprehensive understanding of contextual impact. Lastly, qualitative research may be able to address the subtleties of leader-employee relationships that a quantitative-based approach cannot, and contribute to a richer understanding of environmental leadership in an organization's effort to manage a sustainable workplace.

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