

## **Effects of Responsible Leadership on Employee Volunteer Green Behavior: Moderated-Mediation Model**

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### **Abstract**

Environmental hazards are a key concern in the modern age, and these risks can be countered by introducing responsible leadership and the practice of green human resource management (GHRM) in companies. The aim of the current research is to analyze the effects of responsible leadership in the volunteer's green behavior (VGB) of employees, and to explore the existence of GHRM practices in mediating the relationship between the two in the hospitality industry in Pakistan. Moreover, employees' green values were hypothesized to mediate the relationship between GHRM and employees' VGB. The research design was quantitative and causal in nature. Data were gathered using both online surveys (through LinkedIn) and in-person means of data collection by employees of the hospitality industry in Pakistan with the assistance of HR managers. The findings reveal that responsible leadership strongly impacts VGB among employees and that GHRM partially mediates the relationship between responsible leadership and VGB. However, employee green values did not moderate the association between GHRM and VGB. These findings have practical implications for leadership development and sustainability initiatives in the hospitality industry. Furthermore, the moderating effect of employee green values was assessed among the mediator and dependent variables only; in the future, researchers can access it on the whole model.

**Keywords:** Responsible Leadership, GHRM, Volunteer Green Behavior, Employee Green Values

## Introduction

Responsible leadership involves engaging stakeholders through an interactive process that aligns with common objectives. This process involves dialogue between leaders and group members. The significance of fostering responsible leadership in the workplace has been increasingly recognized (Szczepańska-Woszczyna, 2015). In fact, it is an essential skill to have in order to lead a team and provide the right direction for the organization. The role of responsible leadership should be emphasized to improve communication, cooperation, and collaboration among employees. Responsible leaders understand that without trust in people, there is no chance of a great team and success. When a leader has developed strong trust, it leads them to create an environment in which everyone can succeed. To create a good environment, effective leaders create an environment in which success is possible and expected (Cismas et al., 2016). They do this by creating an environment where people are able to thrive in their work, at the same time they can be successful in life as well.

Responsible leadership impacts employees' voluntary engagement in environmentally sustainable behavior. The environment influences people's behavior both positively and negatively, shaping their future and determining the success or failure of individuals and organizations (Afsar et al., 2020). Organizational leaders institute a culture of values. Leaders should be capable of learning and communicating their organizations' values to their employees. People's morality and ethics rely on their maturity, and it is up to each human being to take care of their actions, both in their personal lives and in the areas where they work (Lata and Chaudhary 2022). In this regard, leaders make decisions to implement ethical and moral values in their organizations. Ethical concerns are linked to environmental concerns, which are a major priority for decision makers. Effective leadership means that the leader ensures that the company's values and mission are implemented effectively and that people adhere to these values. Responsible and effective leaders strive to create an environment in which people feel valued and can grow, learn, and achieve success (Dong and Zhong, 2021).

As mentioned above, leaders create and implement environmental values in an organization. Therefore, it is becoming increasingly important for organizations to establish their employees' green behavior. This is because the environment is a growing concern, and to mitigate some of the issues, it is essential that organizations do their part. The idea of greening an organization is not novel. However, the recent trend of hiring responsible leaders from diverse backgrounds has given rise to a new generation of environmentally conscious leadership (Gürlek and Tuna 2018).

Environmental concerns empower the hospitality industry to appoint responsible leaders who adopt environmentally sustainable human resource

management practices, as traditional human resource management approaches are insufficient to foster green behavior among employees (Tuan, 2022). GHRM is both intricate and delicate in the hospitality industry. There are proponents on both sides of the debate on whether ecosystems and human life are interdependent or two different entities (Mazzocchi, 2023). Whatever our choice we are making, the ecosystem clearly isn't here just for humans' self-serving ways. Sustainable development has led many countries to develop programmes aimed at reducing the environmental effects of industries through 'greening' workplaces. As a result, many industries, including the hospitality sector, have been induced to implement eco-friendly practices such as recycling and waste minimization strategies to enable sustainability (Yu et al. 2020). This way, organizations enact environmental sustainability practices by the way of enhancing the employees' job satisfaction and organizational quality of life (Singh et al., 2020).

In addition, GHRM address environmental concerns and efforts to reduce stress and enhance engagement by enabling Green Value: Empowerment, Inclusion, Health & Safety (H&S), Diversity, Inclusion and Global Citizenship (GCD) (Islam et al., 2025). GHRM is pivotal as companies adapt to these changes to achieve such objectives and workings that remain in line with their environmental and social responsibility obligations (Benevene and Buonomo 2020). GHRM is a series of strategic course of actions aiming to repositioning the base of an organization not only about reducing costs but also align with savings measures which are equally been useful on enterprise and employee (Farooq, Zhang et al. 2022). These are measures that foster cost savings, productivity enhancements and employee engagement, motivation and satisfaction.

Accelerating such a change requires building a culture of creativity and innovation and establishing an environment that trust employees' capability, especially in the sector of hospitality. This venture requires leadership that is competent in team management and skilled at responding to change. Leaders must be detail-oriented and capable of identifying effective practices in various settings. However, they should also be flexible and adapt quickly when necessary (Umrani, Channa et al., 2022). This study investigates the impact of responsible leadership on the environmentally responsible behavior of volunteer staff and examines the mediating role of Green Human Resource Management (GHRM) practices in the relationship between these variables in Pakistan's hospitality sector.

The objectives of this study are to identify the effects of responsible leadership (RL) on employee's volunteer green behaviour (VGB), to measure the mediating effect of GHRM between RL and VGB, and to identify the moderation effect of green value (GV) between GHRM and VGB in hospitality sector of Pakistan.

## Literature Review and Research Hypotheses

### *Responsible Leadership*

Responsible leadership is a basic factor in effective leadership and a more significant factor in allowing leaders to make decisions in the organization's long-term interests. Awareness of responsible leadership elements and processes is essential for both leaders and their followers. Responsible leadership is a measure to ensure that decisions are based on informed actions in the best interest of the organization and its constituents, which, in turn, creates an environment capable of supporting growth and success (Moody-Stuart, 2017). Responsible leadership is defined by an international consortium of leaders from diverse industries and professional backgrounds. The authors of the paper, *Responsible Leadership: A Global Definition*, explain responsible leadership as a global-ethics approach-based leadership that is behaviorally committed to following through in the development of economic or social activities based on values (Marques & Miska, 2021). Furthermore, a responsible leader creates a culture in which better performance can be achieved. Likewise, responsible leaders must also understand and articulate the organization's mission and an explicit plan for fulfilling that mission (Stone-Johnson, 2014). Responsible leadership is not determined by the size of responsibility but by the level at which the individual leader should be active in accordance with their core values and beliefs. This viewpoint considers the relevance of personal efficacy and integrity to leadership. Every choice and action an agent makes to direct something else is an obvious commitment to ethical principles and their beliefs.

Accountable leaders are those individuals who can align their personal beliefs and values with an adequate amount of self-regulation, self-discipline, and self-awareness and who act virtuously. They also understand the basic principle that their actions have consequential effects on others (Szczepańska-Woszczyna et al., 2015). Responsible leadership that supports ethical decision-making, increases transparency, and promotes respect for participants can strengthen the relationship that employees identify with the organization, resulting in a better feeling of engagement and motivation to work and interact with the organization (Ardito and Dangelico, 2018).

### *Volunteer Employee Green Behavior*

Voluntary green behavior refers to actions that individuals engage in to express respect and care for the environment, often exceeding basic requirements (Norton et al., 2015). In comparison, the required green behavior includes a set of actions that all employees must undertake, irrespective of their position (Ercantan & Eyupoglu, 2022). These are standard environmental practices that should be observed by all individuals in the workplace. Examples of necessary green behaviors include

recycling, using public transport, and other sustainability-based practices that decrease an organization's overall environmental impact. However, some people do not follow these requirements, and enforcing them is a waste of time and money (Dangelico, 2015). To eliminate this waste of time and money, a system that will enable us rewards employees for their green behavior must be created. This system can operate using a points or badge-based system, where employees earn recognition for demonstrating green behaviors in the workplace. The greener the employee behaves, the more points they can score and thereby strengthen their position within company. Offices can also score brownie points for workers that impact their potential for promotion, hiring practices and the company's even decision to terminate them - meaning there is an incentive for employees to start championing environmentally-friendly methods. (Zientara and Zamojska, 2018).

Employee-endorsed green behaviors are more than a matter of individual consumption or betterment of the environment; they constitute a critical arena that demands leadership intervention at an organizational level (Rezapouraghdam et al., 2018). The voluntary pro-environmental behavior of employees can be understood as an additional optional rather than normative behavior. This may be either a voluntary or involuntary act. If an employee engages in environment-promotive behavior (e.g. recycling, energy saving, composting) that requires no more effort than any other environmentally destructive activity we say they have volunteered for green behavior. As against it, an employee who has involuntarily become the victim of environmental threats such as climate change or air pollution may not have signed up for this and yet forced to do so under the circumstance (Arshad et al., 2020).

### ***Green Human Resources Management (GHRM)***

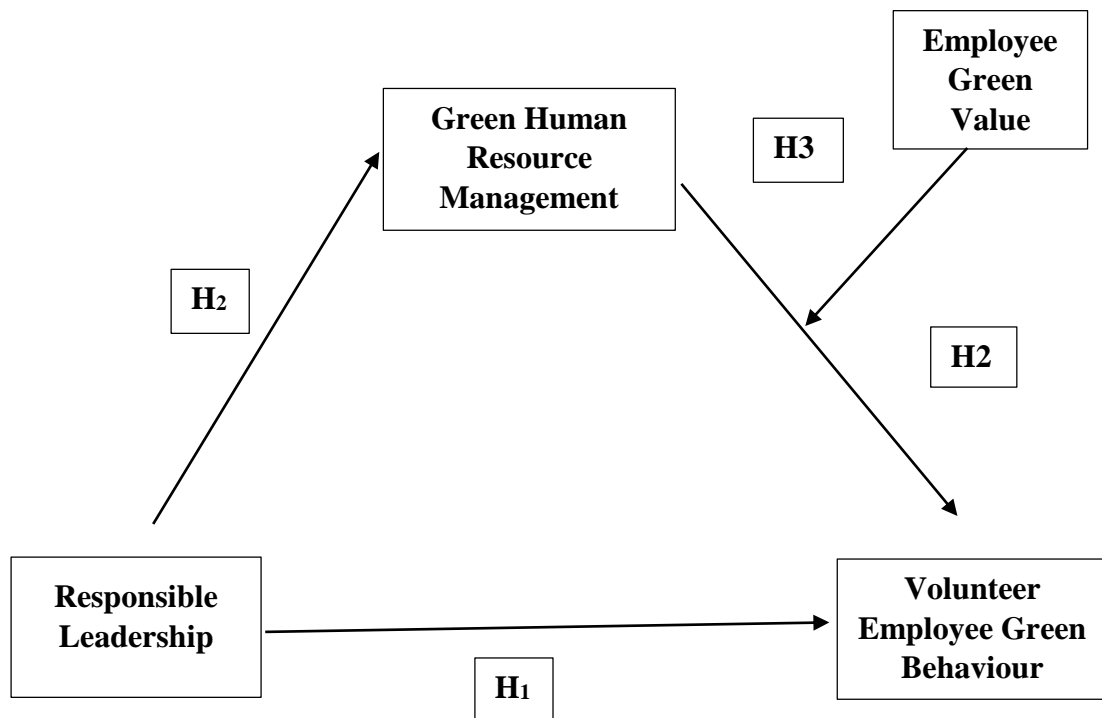
The Green HR management is a strategic effort to motivate sustainable behavior among employees. It is employed as a policy tool, so that personnel work well and provide a good contribution to environmental sustainability. Green HRM practices integrated into HR policies enable organizations to develop a corporate culture of environmental responsibility and for employees to notice the distinct difference in the planet (Roscoe et al., 2019). Green human resource management (GHRM) is an umbrella term used to describe organisational policies and practices that embrace environmentally friendly electronic and digital means as a way of minimising environmental impacts. GHRM primarily pertains to the sustainable management of environmental concerns via green technologies (Ahmad et al., 2025). GHRM recognises that no one person can change this and organisations cannot best manage their employees without external assistance; therefore, technology should be used to develop a context in which work may be and will be sustainable, especially within

hospitality. This framework serves as a synthesizer of sustainable goals and effective HR management (Yusoff et al., 2020).

In relation to the hospitality sector, Green Human Resources Management (GHRM) is considered as a strategic initiative that aims at reducing environmental footprints, in particular carbon emissions, by integrating principles of sustainability within HRM practices (Amrutha & Geetha, 2019). The GHRM model is considered as a salient feature for hospitality firms and holds double poles of requirement to the organizations of environmental stewardship and sustainable behavior construction among employees (Pham et al., 2019). Such changes have also been facilitated by the increasing trend in green businesses or environmental consciousness, challenging organizations to create new resources for sustainable income generations (Kim et al., 2019).

### ***Responsible Leadership, GHRM, and Volunteer Green Behaviour***

Responsible leadership has a significant impact on cross-boundary sustainability commitments that promote greening management initiatives and trigger pro-environmental employee behavior across an organization (Xiao et al., 2024). Recently, empirical investigations have uncovered the significant key performance impacts of responsible leadership at the organizational and employee levels. For instance, TMT responsible leadership positively correlates with GHRM implementation and employee organizational citizenship behavior towards the environment (Lu et al., 2022). Their sequential mediation approach revealed a mediation network that constructs GHRM and employees' environmental felt-responsibility as mechanisms through which responsible leadership influences employee green behaviors. Ahmad et al., (2021) found that GHRM mediated the relationship between ethical leadership and subordinates' green behaviour in Pakistani firms. Furthermore, these indirect effects were strengthened by subordinates' environmental knowledge, such that GHRM was effective when employees were familiar with environmental concerns and issues. Moreover, spiritual leadership enhances employees' green behavior by mediating through green HRM practices and moderating individual green values. Based on data from the Pakistani pharmaceutical industry, the results reveal that spiritual-based leadership and strong green HRM combine to boost both in-role and extra-role green behaviors (Hassan and Pasha, 2023).

Figure 1. *Theoretical Framework****Theorization and Hypothesis Development***

This study leverages Social Identity Theory as a conceptual framework to elucidate the interconnections among responsible leadership, Green Human Resource Management (GHRM), and employees' voluntary pro-environmental behaviors. We propose and discuss a framework that highlights how responsible leadership can influence employee participation in the VWGB based on Tajfel's (1978) work. We believe that by encouraging the adoption and encouraging GHRM practices within the organization, we can motivate employees to demonstrate and embrace the practice of sustainability and approach the organization's environmental commitments. Thus, employees' perceptions and thoughts about their employers can shape their voluntary green behaviors. Specifically, when employees adopt an organizational identity and can relate to it, they are more likely to adopt green behaviors at work (Shen et al., 2018). The conceptual framework guiding this investigation is presented in Figure 1.

The research hypotheses, derived from the extant literature, are articulated as follows:

H1: There is a significant effect of Responsible leadership on employee's voluntary green behavior.

H2: There is significant mediating effect of GHRM between responsible leadership and employee's volunteer green behavior.

H3: There is significant moderating effect of green value between GHRM and VGB.

### ***Methodology***

#### ***Research Design and Sampling***

This study used a causal quantitative research design. HR managers and other representatives of hotels and restaurants have been involved in data collection using online resources; LinkedIn and emails and in-person. LinkedIn allows engaging employed professionals, and in-person surveys allow the recruitment of less active Internet participants, increasing coverage and hence representativeness (Hassan & Pasha, 2023). Confidentiality promises, random sampling method, and explicit instructions in the survey reduced social desirability bias, as well as self-selection bias, which echo Hassan and Pasha's (2023) study on spiritual leadership and green behavior. To collect data, a convenience sampling strategy was chosen, and respondents were asked to complete a pre-designed questionnaire. Convenience sampling is a cost-effective, quick, practical (Saunders et al., 2019) and time-saving technique (Creswell & Creswell, 2018). Therefore, the researcher used it in this study. The questionnaires were sent to 350 people, of whom 250 returned the questionnaire. After the screening process, 230 responses were considered fit for analysis. 350 respondents were selected because for reliable results in SEM there must be 200 to 400 sample size (Hair, 2009; Kline, 2016).

#### ***Construct Measurement***

The operationalization of constructs responsible leadership, Green Human Resource Management (GHRM), employee green values, and employee in-role/extra-role behaviors will employ established psychometric instruments. Specifically, responsible leadership (individual-level) will be quantified using Voegtlin's (2011) five-item scale. Employee volunteer green behavior will be assessed using Bissing-Olson et al.'s (2013) three-item instrument. GHRM was measured using Dumont et al.'s (2017) six-item scale, and employee green values were evaluated using a nine-item scale adapted from Steg et al.'s (2005) framework.



***Data Analysis***

Data were analyzed using SPSS for demographics and SMART PLS 4.0 to test the models. The researcher employed it as SEM is a flexible and high generalizability technique that can use in case of small sample size (Dash & Paul, 2021).

***Construct Reliability and Validity***

Reliability of the latent constructs was measured using Cronbach's alpha and interpreted based on recognized cut-off criteria:  $\geq 0.80$  (strong),  $\geq 0.70$  (satisfactory) and  $\geq 0.60$  (estimating sufficient for exploratory analysis). For composite reliability (CR), studies using exploratory models should obtain  $\geq 0.60$ , and the confirmatory ones should reach  $\geq 0.70$  (Chin, 1998; Hock & Ringle, 2006). Daskalakis and Mantas, 2008 also put forward that the CR value should be attained at a value of  $CR \geq 0.80$  for support of the confirmatory model. The convergent validity was established by measuring communality in the reflective measurement models using Average Variance Extracted (AVE), for which acceptable models should have  $AVE > 0.50$  (Chin, 1998; Hock & Ringle, 2006). Table 1 shows that all the latent variables presented adequate reliability with Cronbach's alpha coefficients  $> 0.70$  and CR values greater than  $> 0.70$ , which indicates internal consistency. Outer loadings  $> 0.60$  and AVE values  $> 0.50$  for all the constructs supported convergent validity.

Table 1  
*Construct Reliability and Validity*

	Cronbach's Alpha	Composite Reliability	Outer Loadings	AVE
EGV	0.960	0.968		0.834
EGV1			0.937	
EGV2			0.936	
EGV3			0.811	
EGV4			0.937	
EGV5			0.949	
EGV6			0.904	
GHRM	0.917	0.936		0.709
GHRM1			0.906	
GHRM2			0.832	
GHRM3			0.828	
GHRM4			0.891	
GHRM5			0.858	
GHRM6			0.726	
RL	0.851	0.892		0.625
RL1			0.664	
RL2			0.874	
RL3			0.851	
RL4			0.765	
RL5			0.782	
VGB	0.880	0.926		0.807
VGB1			0.913	
VGB2			0.840	
VGB3			0.939	

### Discriminant Validity

Discriminant validity was tested to get an empirical distinction between the constructs used in model. Following Henseler et al. (2015), the heterotrait-monotrait (HTMT) ratio less than 0.90 shows acceptable discriminant validity. All HTMT values are less than the 0.85 (Henseler et al., Personal Comput Individ Differ, 2016) threshold indicating that each of the latent constructs showed empirically established discriminant validity (see Table 2).

Table 2  
*Heterotrait-Monotrait Ratio (HTMT)*

	EGV	GHRM	RL	VGB
EGV				
GHRM	0.498			
RL	0.473	0.451		
VGB	0.589	0.689	0.529	

***Predictive Relevance (Q2) and Predictive Accuracy (R2) of the Model***

Predictive accuracy was measured by Construct Cross-Validated Redundance (CCVR), which is a widely used measure of predictive performance. As per Cohen (1988) effect sizes of 0.02, 0.15, and 0.35 are considered small, medium and large respectively in the present study. The proportion of variance explained ( $R^2$ ) indicates the extent to which all effect sizes are valid for the structural model. As indicated in Table 3, the model showed a good prediction quality for the endogeneous construct Employee Volunteer Green Behavior (VGB) and moderate prediction ability for Green Human Resource Management (GHRM). The adjusted  $R^2$  value of the latent variables indicated the variance explained by: (a) GHRM, 12.0% (b) employee volunteer green behavior, 49.8%.

Table 1  
*Predictive Relevance (Q2) and Predictive Accuracy (R2) of the Model*

	$R^2$	$R^2$ Adjusted	$Q^2$
GHRM	0.190	0.187	0.120
VGB	0.507	0.498	0.393

***Measuring the Effect Size ( $f^2$ )***

The  $R^2$  change effect ( $f^2$ ) measures the amount of additional predictive ability added by an independent on a dependent variable. Following Hair et al. (2014), magnitudes of effect size are viewed as the following: 0.02 (small), 0.15 (moderate) and 0.35 (large). As indicated in Table 4, the complementary variable Responsible Leadership has moderate ( $f^2 = 0.235$ ) and weak ( $f^2 = 0.041$ ) statistical impact on GHRM and volunteer green behavior, respectively. GHRM exerted moderate influence on volunteer green behavior ( $f^2 = 0.279$ ), and employee green value had a weak effect ( $f^2 = 0.040$ ).

Table 2  
The Effect Size ( $f^2$ )

	RL	GHRM	VGB
RL		0.235	0.041
GHRM			0.279
EGV			0.040

### Structural Model Assessment

The path coefficients from the Partial Least Squares (PLS) analysis were in agreement with those of regression beta estimates. These estimates aid in testing of hypotheses by placing a measure on both the statistical significance (if any) and degree of change in the endogenous variable associated with one unit of variance change in the exogenous construct –denoting relative impact between predictors skin model. A bootstrapping approach was used to estimate the significance of these estimates based on t-statistics (Chin, 1998). Values of t greater than 1.96 at  $\alpha = 0.05$  were considered statistically significant estimates. The structure of model specification is depicted in Figure 2.

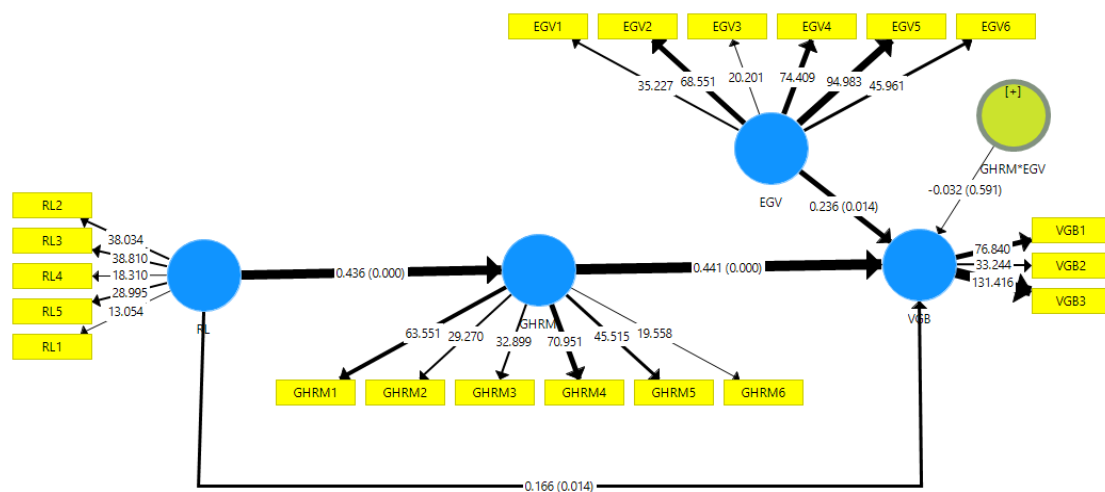


Figure 2. Model of Study

Table 3  
Hypothesis Testing

Hypothetical Path	B Value	T Statistics	P Values
RL -> VGB	0.358	4.759	0.000
RL -> GHRM	0.436	6.452	0.000
EGV -> VGB	0.236	2.455	0.014
GHRM -> VGB	0.441	5.386	0.000
RL -> GHRM -> VGB	0.192	4.252	0.000
GHRM*EGV -> VGB	-0.032	0.538	0.591

***H1: There is a significant effect of Responsible leadership on employee's voluntary green behavior***

Table 5 presents the empirical validation of Hypothesis H1, revealing a statistically significant relationship between Responsible Leadership (RL) and Employee Volunteering Green Behavior (EVGB) ( $b = 0.358$ ,  $t = 4.759$ ,  $p < 0.05$ ). RL also demonstrated a significant predictive relationship with Green Human Resource Management (GHRM) ( $b = 0.436$ ,  $t = 6.452$ ,  $p < 0.05$ ). Furthermore, Employee Green Values exhibited a statistically significant influence on EVGB ( $b = 0.236$ ,  $t = 2.455$ ,  $p < 0.05$ ). Responsible leadership further enhances the belongingness of employees by pursuing moral virtues, stakeholder care and sustainability-oriented shared vision. When workers perceive that they belong to such a responsible company, they are more likely to internalize its environmental values and do green behaviors voluntarily consistent with their group's identity.

***H2: There is significant mediating effect of GHRM between responsible leadership and employee's volunteer green behavior.***

Table 5 further elucidates the indirect effect of Green Human Resource Management (GHRM) as a mediator in the relationship between Responsible Leadership and Employee Volunteer Green Behavior. The indirect path coefficient was statistically significant ( $b = 0.192$ ,  $t = 4.252$ ,  $p < 0.05$ ), confirming that GHRM plays a significant mediating role in this relationship. Consequently, H2 is supported. GHRM practices operationalize the responsible values of leaders and become organizational norms and mechanisms that is green training, performance appraisal and recognition systems, that enhance employees' identification with the sustainable goals of their organization. By identifying with the organization to a greater extent, this leads individuals to behave in environmentally responsible ways: again satisfying SIT's prediction that strong organizational identity is associated with acting according to group norms.

***H3: There is significant moderating effect of green value between GHRM and VGB***

Furthermore, the nature of green employee value does not moderate the relationship between GHRM and volunteer green behaviour ( $b=0.033$ ,  $t=1.614$ ,  $p=.05$ ). Therefore, H3 is rejected. The results reflect that the independent variable, Responsible Leadership, has a direct effect on the dependent variable, employee volunteer green behavior, as it is represented by  $\beta = -0.358$  when there are no mediators. In addition, GHRM partially arbitrates the impact of responsible leadership on employee green behavior. However, employees' green values did not play a moderating role between GHRM and volunteer green behaviour. The insensitivity of green values as a moderator implies that employees' voluntary green behavior is relatively more influenced by identification with the organization's shared identity than individual differences. That is, when responsible leadership and GHRM help create a strong shared pro-environmental identity at work, also employees with rather weak personal green values engage in green behaviours. This is consistent with SIT's argument that social and organizational identification can trump individual valuations differences in predicting behavior aligned with the group.

## Discussion

This study examined does responsible leadership (RL) effects employee's voluntary green behavior (VGB) through GHRM and employees' green values (EGV) has moderating effect between G0048RM and VGB. The results confirmed all the proposed hypotheses, except for the moderating role of EGV, which was not statistically significant. The model is grounded in Social Identity Theory (Ashforth & Mael, 1989; Tajfel, 1978), which provides a strong foundation for explaining the interdependence among the variables.

These results confirmed our hypothesis that RL has a direct and positive effect on VGB. As has been found before (Zhang et al., 2021), responsible leadership promotes employees' EFB equally across levels of the organizational climate or employee organizational identification. This underscores that the sustainability-related attitudes of leaders may incentivise stakeholders as well as enhance organisational adherence to a sustainability orientation, which is part and parcel with the organisation's overall approach at environmental stewardship (Han et al., 2019). The data further showed that GHRM partially mediated the association between RL and VGB. RL had a positive effect on GHRM and then employees' VGB. This is consistent with previous evidence that responsible leadership can promote green HR practices (Zhang et al., 2021), but not with research asserting that GHRM does not significantly predict VGB (Dumont et al., 2017). These findings imply that GHRM operationalizes responsible leadership through actual pro-environmental behaviours at work.

Fourthly, the finding does not confirm the moderator role of EGV in the relationship between GHRM and VGB. This result is in line with prior studies that

argued employees' pro-environment values strengthen the positive effect of GHRM on whether to adjust performance with environmental practices (Gilal et al. 2019). Rather, findings suggest that the GHRM can trigger green behavior in employees irrespective of their prior environmental values.

For hospitality management, responsible leadership is equally crucial through which sustainability becomes internalized as practices and organizational culture. Responsible leaders can influence employees to engage in environmentally behaviors (like waste reduction, energy savings, and community involvement) by demonstrating their ethical values and empathy and a commitment to doing good with a long-term focus. Workers are more likely to adopt sustainable practices when company leaders "walk the talk" and include them in performance goals and training, the report finds. Furthermore, accountable leadership leads to an enhanced corporate image and consumers trust which is absolutely crucial especially for the hotel sector where guests become conscious and morally sensitive towards eco-hotels.

## **Conclusion**

This study investigated the influence of responsible leadership on employee volunteer green behavior within the hospitality sector, specifically examining Green Human Resource Management (GHRM) as a mediating factor. Through the analysis of a moderated mediation model, this study demonstrated that responsible leadership facilitates employee volunteer green behavior via the implementation of GHRM practices in hotel and restaurant operations. The findings confirm that leadership effectiveness in promoting pro-environmental employee conduct is contingent on the strategic integration of GHRM systems within these service industries. This study has some limitations. We did not collect data from the entire hospitality industry because of time and cost constraints. Future researchers can target the entire population and create clusters of hospitality industry segments. Second, this study only examines the variables at the individual level, while future researchers can examine the impacts at the organizational level and then compare their results to produce better outcomes. Furthermore, the moderating effect of employee green values was assessed among the mediator and dependent variables only; in the future, researchers can access it on the whole model.

Although this research has made an important contribution to explaining how responsible leadership influences employees' voluntary green behavior through Green Human Resource Management (GHRM) and the moderating effect of green values, it also has limitations for future study. First, the cross-sectional nature of the study does not allow for any inference regarding causal relationships between variables; longitudinal and experimental designs should be conducted to determine temporal effects. This study has a few potential limitations that should be addressed in future

research. First, the data were self-reported; hence, common method bias and social desirability may have led to biased results. Future research might use multi-source data (e.g., supervisor ratings or objective sustainability metrics) to improve validity. Third, the study was conducted in a particular industry or cultural setting; therefore, it is suggested that this study be replicated across industries and countries to enhance generalizability.

Researchers can continue to investigate other mediators, such as environmental commitment, organizational identification, or psychological empowerment, to uncover more in-depth mechanisms that explain the association between leadership and green behavior. In addition, other moderators may be explored as potential boundary conditions (e.g., organizational climate, perceived organizational support, or environmental regulations). Last but not the least, it is suggested that scholars should use mixed-method which will enable them to get the quality insights relating how responsible leadership has influenced employees' green attitudes and practices over a period of time.

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**Appendix 1: Measurement Scale**

Sr. No.	Questions	Score
<b>Responsible Leadership (Voegtlin, 2011)</b>		
	<b>My direct supervisor</b>	
<b>1</b>	<b>demonstrates awareness of the relevant stakeholder claims</b>	
<b>2</b>	<b>considers the consequences of decisions for the affected stakeholders</b>	
<b>3</b>	<b>involves the affected stakeholders in the decision-making process</b>	
<b>4</b>	<b>weighs different stakeholder claims before making a decision</b>	
<b>5</b>	<b>tries to achieve a consensus among the affected stakeholders</b>	
<b>Green HRM (Dumont et al., 2017)</b>		
<b>1</b>	<b>My company sets green goals for employees.</b>	
<b>2</b>	<b>My company considers candidates' green attitudes in recruitment and selection.</b>	
<b>3</b>	<b>My company provides employees with green training to develop the knowledge and skills required for green management.</b>	
<b>4</b>	<b>My company considers employees' workplace green behaviour in performance appraisals.</b>	
<b>5</b>	<b>My company relates employees' workplace green behaviours to rewards and compensation.</b>	
<b>6</b>	<b>My company considers employees' workplace green behaviours in promotion.</b>	
<b>Volunteer Green Behaviour (Bissing- Olson et al., 2013)</b>		
<b>1</b>	<b>I took a chance to actively involved in environmental protection at work</b>	
<b>2</b>	<b>I took initiative to act in environmentally-friendly way-</b>	
<b>3</b>	<b>I did more for the environment at work than I was expected to</b>	
<b>Employee Green Value (Steg et al., 2005)</b>		
<b>1</b>	<b>I feel a personal obligation to do whatever I can to prevent environmental degradation</b>	
<b>2</b>	<b>I feel normally obliged to save environment from degradation, regardless of what others do.</b>	
<b>3</b>	<b>I feel guilty when I contribute in environmental degradation</b>	
<b>4</b>	<b>I feel normally obliged to protect environment instead of degradation</b>	
<b>5</b>	<b>People like me should do whatever they can to protect environment from degradation</b>	
<b>6</b>	<b>I would prefer to buy eco-friendly appliances</b>	