



Impact of Green Transformational Leadership on Environmental Performance Through Green HRM Practices and Creativity in the Hotel Industry of Pakistan

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ABSTRACT

The purpose of this study is to investigate the missing links between green HRM and green creativity through which green transformational leadership (GTFL) enhances environmental performance. Moreover, environmental beliefs and values (EB&V) were evaluated as moderating factors in the model. Through a survey questionnaire, data was collected from 170 hotels in two major cities of Pakistan: Lahore and Islamabad. Data was examined through partial least square-based structural equation modeling (PLS-SEM) technique using Smart PLS 3.0. The study framework is based on resource-based view (RBV) and ability-motivation opportunity (AMO) theoretical lenses. The study found that green HRM and green creativity significantly mediate the relationship between GTFL and environmental performance. However, the moderating role of EB&V was found insignificant in the results. The findings imply that pro-environmental leadership is the critical resource that enables environmental performance through enhancing critical employees' competency (i.e., green creativity) and institutionalizing required processes (i.e., green HRM) in the organization. The study's findings prove crucial for the hotel sector's dedication to developing environmental plans while prioritizing practical environmentally conscious development.

Introduction

With the growing emphasis on sustainable growth, organizations are facing increased pressures from different interest groups to follow green practices (Yu et al., 2017; Longoni et al., 2018; Singh et al., 2019). Moreover, green practices can empower organizations to achieve

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sustainable competitive advantage (Kang & Lee, 2021; Özgül & Zehir, 2023). Therefore, organizations need to be concerned with pro-environmental practices considering them as a tool for enhancing their legitimacy. Environmental management frameworks majorly rely upon nurturing and sustaining the internal capacities and capabilities of organizations (Yin & Schmeidler 2009; Biscotti et al., 2018).

Indeed, scholars are emphasizing greening the operational domains, such as green HRM (Awan et al., 2023; Pham et al., 2019; Yong et al., 2019), green creativity (Khalili, 2016), green innovation (Tian et al., 2023; Zhou et al., 2018) and green finance (Przychodzen et al., 2018). In this aspect, leadership is crucial in establishing a vision for prioritizing operational tasks toward pro-environmental activities. In particular, the GTFL can be quite effective in guiding and stimulating its followers to adapt green creativity in the workplace (Chen and Chang, 2013).

Furthermore, it is increasingly realized that green HRM practices can contribute to creating a green organizational environment through various functions, such as workplace efficiency and waste management (Jabbour & de Sousa Jabbour, 2016). Green HRM practices can collectively foster and maximize green attitudes and behaviors to improve an organization's performance (Kim et al., 2015). However, the crucial contribution of the GTFL turns out to be vital due to its ability to generate green innovation throughout the organizational work environments (Leroy et al., 2018). For this purpose, the present study argues that green HRM practices can serve a critical role in nurturing and cultivating organizational internal capacities and competencies toward organizational environmental performance. Moreover, GTFL allows employees to use their creative skills, analyze challenges from different perspectives, and come up with innovative solutions for environmental problems (Chen & Chang, 2013) that can enhance organizational environmental performance.

However, to create innovative behavior and green HRM, leaders need to develop a green culture and values in the organization. Corporate culture is regarded as “green” when organizational personnel go beyond profit-seeking goals to limit negative repercussions and elevate positive repercussions on organizational environmental sustainability initiatives (Sroufe et al., 2010). Such embedded pro-environmental values and beliefs act as enablers to enhance environmental performance and green HR practices through GTFL. Addressing this critical domain, this study aims to explain the impact of GTFL on environmental performance through the mediating effect of green creativity and green HRM practices and the moderating effects of environmental beliefs and values of employees in the hotel industry in Pakistan as shown in figure 1.

The recent literature indicates that the hotel industry of the South Asian region particularly Pakistan is currently experiencing internal and external pressures towards pro-environmental hospitality facilities (Umrani et al., 2020; Farrukh et al., 2022). Such pressures are compelling for the hospitality sector because they significantly contribute to environmental concerns, which include waste management, and energy and water conservation (Graci & Kuehnel, 2011; Umrani et al., 2020). In addition, Gossling et al., (2019) stated that hotel-related industries generate almost 20.6kg of carbon emission per organization per night across the globe and consume 130 megajoules of energy per bed in a night. Additionally, the worldwide hotel industry used 218 gallons of water for each room daily in comparison with the average hospitality industry (Brunsmith et al., 2015) and produced trash of at least one kilogram daily for every customer (Bohdanowicz, 2005). The hospitality sector, producing an immense amount of environmental influences in commercial activities, remains limited research in the academic literature. Hence, the hospitality industry across the globe requires attention to environmental challenges (Erdogan & Baris, 2007). Therefore,



environmental discussions have developed into a widely used notion for worldwide environmental change, stimulating the hospitality sector to make enriched considerations to employ green services such as green creativity and green leadership.

Hence, it is argued that the hotel industry needs to articulate green HR management functions across organizational work settings. Contemporary studies validate and support the contribution of green HR management practices that predict organizational environmental performance (Guerci et al., 2016). As a result, it's no surprise that the concept of green HR management at work is gaining attention among practitioners and academics concerned with sustainable development (Daily et al., 2012). Hence, it is critical to examine how leadership and green HR practices can improve the organizational environmental performance of the hotel industry in Pakistan.

The study aims to fill significant gaps in the literature. First, this research provides empirical evidence concerning how and why the mantra of GTFL at the workplace serves as crucial regarding both green innovation and environmentally responsible green HR practices in the hospitality industry. Although the positive effect of GTFL on environmental performance is well established, however, it is still unclear what mediates the relationship between these two aspects, resulting in the need for researchers' attention (Singh et al., 2020; Sun et al., 2022; Sachdeva & Singh 2023; Para-Gonzalez et al, 2018; Le and Lei, 2019). Second, it endeavors to explore the role of environmental beliefs and values towards environmental performance, which are rarely addressed in literature (Roscoe, 2019). Third, the manufacturing and non-manufacturing industrial sectors are primarily highlighted in the literature that is currently available regarding organizational sustainability and the adoption of sustainable resources (Hayat Bhatti et al., 2020; Fassin et al., 2011), while the hospitality industry is still not fully understood (Sachdeva & Singh, 2023; Pham et al., 2019; Tang and Tang, 2012; Boiral et al., 2019). Forth, this research contributes towards both AMO theory and RBV in relation to the context of the hotel industry concerning how GTFL and green HR practices promote and enhance interior workplace functionality to get involved with green innovation behaviors and green functions for creating sustainable environment performance at work with the moderating impact of environmental beliefs and values of employees.

The paper continues with a review of a variety of theoretical and empirical taxonomies pertaining to the role of GTFL on organizational environmental performance through the mediating role of green HRM and creativity, and the moderation of environmental values and beliefs. The next section of the paper contains the research methodology, followed by the findings of this research. Finally, we provide the discussions of our results coupled with the conclusions and research implications.

Literature and hypothesis development

GTFL and environmental performance

According to Avolio et al. (1999), transformational leadership is an approach to leadership in which leaders carry out the required change while mentoring employees via enthusiasm and motivation to attain a certain goal. Based on inspirational motivation, transformational leadership stimulates and enhances the follower's enthusiasm level to think more creatively (Avolio et al., 1999). In this study the term, GTFL is conceptualized as a type of leader that has the key objective



of dispensing clear vision, objectives, ideas, and incentives for employees as well as motivating them to attain the environmental objectives of the organization (Rehman & Yaqub, 2021; Martinez-Conesa et al., 2017; Mittal and Dhar, 2016). A detailed analysis of environmental performance has been given by Montabon et al. (2007), which is comprised of constant improvements, accidental reduction, recycling efficiency, interest-group perception, waste management, independent evaluations, cost reduction, and resource conservation. Environmental performance refers to the organizational commitment to secure the environment and to exhibit quantifiable functional benchmarks, which are inside the suggested jurisdictions of an environmental precaution (Kang & Lee, 2021; Paillé et al., 2014). GTFL can motivate employees towards the process of green products innovation which is related to the launching and displaying of green products in markets through firms (Awan et al., 2023; Andriopoulos, and Lewis, 2010) as well as increased environmental performance (Hameed et al., 2022; Dranev et al., 2018; Zailani et al., 2015). According to previous research, GTFL is pertinent and significant for the overall performance and success of the organization (Sun et al., 2022; Ng, 2017), since the admirers of GTFL have more creative and beneficial outcomes across all levels of the organization whether individual or team (Barrick et al., 2015) because they perform their best in extra-role, in-role task behaviors and innovativeness (Chen & Chang, 2013).

From the perspective of RBV, it is argued that leadership is perceived to be a crucial resource relative to environment management among the organizations (Guest, & Teplitzky, 2010). Leaders can significantly enhance, promote, and develop their workers as well as build trust. The pressure forms the stakeholders on firms requires them to peruse environmental practices (Singh et al., 2020; Song and Yu, 2018; Chen & Chang, 2013). Many of the prior studies proved that GTFL enhanced motivation among employees as well as encouraged green job behaviors for getting green performance (Mittal & Dhar, 2016; Chen et al., 2006). Moreover, this leadership quality also developed and grew green passion among workers (Jia et al., 2018), green creativity (Song & Yu, 2018), green innovation (Zhao & Huang, 2022; Zailani et al., 2015) as well as green organizational performance (Zhao & Huang, 2022; Chen et al., 2006). In light of this argument, it is proposed:

H1: GTFL significantly affects the EP in the hotel sector of Pakistan.

The mediating role of Green HRM between GTFL and environmental performance

Green HRM function refers to the green component of HRM functions, which aims to support organizations to cultivate, acquire, inspire, sustain, and nurture green actions within their workforces (Rizvi & Garg, 2021; Sachdeva & Singh 2023; Song and Yu, 2018; Dumont et al., 2017; Chen and Chang, 2013). The key focus of GTFL is on considering individual employees' needs and requirements, which could enable them to nurture and cultivate green practices relative to HRM in such a way that enables organizations to sustain their environmental goals. Hence GTFL integrates green HR techniques in a manner that boosts employees' abilities, and ambitions and provides them opportunities to get involved with managerial and environmentally friendly procedures (Dumont et al., 2017; Berrone and Gomez-Mejia, 2009) for superior organizational environment performance (Singh et al., 2020; Haddock-Millar et al., 2016; Renwick et al., 2013; Chen et al., 2006).

On the other hand, the optimistic influence of pro-environment HRM practices on green performance is also well-established in literature (Kang & Lee, 2021; Sun et al., 2022; Sachdeva & Singh 2023; Arda, Bayraktar, & Tatoglu, 2018; Jabbour & Santos, 2008). HR professionals significantly contribute to accomplishing environmental outcomes through staffing, robust training,



dynamic appraisals, and state-of-the-art reward structures relative to a pro-environment human capital (Harvey, Williams, & Probert, 2013; Jabbour & Santos, 2008). GTFL integrates green HR techniques in a manner that boosts employees' abilities, and ambitions and provides them with opportunities to get involved with managerial and environmentally friendly procedures. Moreover, HR professionals significantly contribute to employee training and development relative to organizational environmental reputation (Umrani et al., 2020; Bansal & Roth, 2000; Daily & Huang, 2001). Employees' concerns about environmental issues are claimed to become stronger through the organization's training and development programs by focusing on the environmental impacts of commercial operations (Vinod et al., 2020; Bansal & Roth, 2000). Training sessions promoting pro-environment interests might boost employees' emotional commitment toward improving the organizational performance regarding the environment by optimizing their capacities to reduce waste from industrial operations and greenhouse gas emissions (Fernández, Junquera, & Ordiz, 2003).

In addition, HR professionals also significantly contribute to analyzing employee performance resulting from the accomplishment of environmental objectives. HR professionals can also nurture and develop organizational-wide pro-environmental performance indicators and assessment frameworks (Marcus, 2009). Throughout performance evaluations, HR professionals can share with employs if they have accomplished their environmental goals as well and any suggestions for waste management and performance elevations employees may have can be discussed (Renwick et al., 2013). According to Fernández, Junquera, and Ordiz (2003), organizations with executive-level employees whose compensation depended on achieving environmental sustainability had higher levels of environmental performance than those with fixed compensation. Additionally, pro-environmental attitudes or employees can be further manipulated via compensation and rewards structures (Awan et al., 2023; Tian et al., 2023; Kang & Lee, 2021; Umrani et al., 2020; Cordeiro & Sarkis, 2008; Marshall, Cordano, & Silverman, 2005). Drawing on the research on green HRM, it is clear that HR procedures including performance management, hiring, training, and assessments are related to the environmental performance of the organization. On the contrary, GTFL has a significant impact on developing and fostering green HRM. Indeed, by creating green HRM, GTFL promotes a green vision among employees and inspires them towards organizational environmental goals.

Drawing from AMO theory, it is argued that GTFL provides the required ability, motivation, and opportunity to the employees through appropriate green HRM practices which in turn enhance environmental performance. GTFL supports building green HR management guides and practices as part of the effort to help firms successfully communicate their goals and plans to their workforces (Carton et al., 2014). As a consequence, we predict that GTFL can significantly contribute to facilitating green HR practices among organizational work settings, for instance, staffing and selection, management, training, development, empowerment, performance appraisal, rewards, and compensation forms as a tool, through which GTFL at the workplace develops, stimulates, inspires, and fosters employees to effectively pursue the aggregate level of performance (Zhu et al., 2005). Hence, we propose the following propositions:

H2: GTFL significantly affects the Green HRM practices in the hotel industry of Pakistan.

H3: Green HRM practices significantly affect the environmental performance in the hotel industry of Pakistan

H4: Green HRM significantly mediates the association between GTFL and environmental performance.



The mediating role of green creativity between GTFL and environmental performance

In the workplace green creativity relates to the development of original concepts for green procedures, services, products, and goods that are identified to be fruitful, unique, and authentic (Chen and Chang, 2013). GTFL motivates its employees to go beyond their expectations and encourages them to achieve environmental performance (Rehman & Yaqub, 2021; Khalili, 2016). Additionally, it empowers followers to deliberate creatively, examine issues from various viewpoints, and identify cutting-edge solutions for ecological problems (Chen and Chang, 2013). As a consequence, employees of the firm explore novel and creative solutions to address their environmental problems. For instance, Mittal and Dhar (2016) discovered that GTFL enhanced green innovation among workers in India's tourist industry. An additional investigation found increased green product creation, performance, and innovation in the electronics industry of Taiwanese (Sun et al., 2022; Özgül & Zehir, 2023; Chen and Chang, 2013; Zailani et al., 2015).

The linkage of green creativity and environmental performance is also quite evident. Employees with pro-environmental creative ideas are more likely to achieve organizational environmental goals and enhance environmental performance (Khalili, 2016). In light of the RBV perspective, green creativity is a critical organizational resource to attain a competitive advantage in the face of stakeholder pressures to accompany environmental sustainability (Umrani et al., 2020; Sachdeva & Singh 2023; Song and Yu, 2018). Through enhancing green creativity among employees, GTFL enables organizations to achieve their environmental goals. From these arguments and discussions, the following hypotheses are proposed:

H5: GTFL significantly affects green creativity in the hotel industry of Pakistan.

H6: Green creativity significantly affects the environmental performance in the hotel industry of Pakistan.

H7: Green creativity significantly mediates the association between GTFL and environmental performance.

Moderating the role of environmental beliefs & values

A corporate culture is comprised of the beliefs, values, and attitudes of organizational employees (Schein, 1992). Values are what organizational members perceive to be performed and associate with ethical and moral standards (Holt & Stewart, 2000). The notion of belief refers to an individual's perception that could be viewed as either false or true. Whereas, behaviors are comprised of patterns of activities performed by the individuals that result from their beliefs and values (Schein, 1992). Beliefs, behaviors, and values become embedded in an organizational core philosophy or a vision and serve as a guiding framework for managing the unforeseen circumstances or complexities that happen through the organizational life cycle (Schein, 1992). The organizational vision and core philosophy are manifested in employee's attitudes and behaviors and, with the passage of time, such behaviors transform into embedded routines in organizational operations, thereby formulating a workplace culture (Malik et al., 2020; Farrukh et al., 2022; Schein, 1992). Corporate culture could be regarded as "green" whenever organizational employees go beyond their conventional profit-seeking motives to mitigate the adverse repercussions and elevate the favorable repercussions on organizational environmental sustainability happenings (Tian et al., 2023; Sroufe et al., 2010).



A green organizational culture refers to the beliefs, norms, and behaviors of organizational members toward the environment. Organizational goals that are compatible with the employees' desire and believes to mitigate environmental harm can formulate how employees disseminate eco-friendly performance accomplishments (Rizvi & Garg, 2021; Madsen & Rodgers, 2015). Additionally, environmentally aware groupwork is said to significantly mitigate waste and optimize the organizational environmental performance in return (Daily et al., 2012). For instance, it has been asserted by Jabbour (2011) that only when groups incorporate an eco-friendly mentality can enable organizations to reach the proactive phase concerning environment management. Likewise, it has been asserted by Glover et al., (2011) that interpersonal immersion and environmentally conscious collaborative work are key determinants for green amalgamation throughout organizational workplaces. Groups should place a focus on efforts with a history of progress that aim to reduce wasteful industrial processes and dangerous carbon emissions (Simpson & Samson, 2010). Peer participation could nurture teamwork determinations regarding the accomplishments of the environmental performance by the organization (Awan et al., 2023). It is important to note that group behavior is formulated through cultural beliefs and values in the organization

Furthermore, according to Jia et al. (2018), the ability of organizations to implement green practices for HRM at work is significantly impacted by the environmental ideas and values held by their senior leadership. Proactive environmental policies are dispersed by top organizational leadership to operational-level incumbents and, with the passage of time, become embedded in their routine operations (Bowen, 2000). Through formulating such a green environment, a leader emphasizes elevating activities including the eradication of wasteful processes from the manufacturing process (Simpson & Samson, 2010). This, in turn, enhances organizational environmental performance by decreasing the consumption of resources and costs as well (Bansal & Roth, 2000). Moreover, reputed eco-friendly messages from top organizational leadership stimulate eco-friendly awareness among organizational employees to perform pro-environment activities (Rehman & Yaqub, 2021; Hameed et al., 2022; Lin & Ho, 2011). Thus, environmental beliefs and values further enhance the impact of GTFL in creating green HRM and environmental performance.

In light of RBV, organizational strategic resources are the key to a competitive edge. RBV argues that an organization attains a competitive edge by employing strategic resources. In this regard, cultural beliefs and values are the most critical strategic resources that are inimitable and unique. The underpinning theme of RBV relies on 'difficult-to-imitate' which ensures a competitive edge or superior performance (Barney, 1991; Conner & Prahalad, 1996). Cultural beliefs are difficult- to imitate and hence unique strategic resources of the organization provide a culture that can enhance the impact of GTFL on green HRM and the environmental performance of the organization. Therefore, the following moderating relations are proposed in the model:

- H8:** Environmental beliefs and values are significantly related to environmental performance in the hotel industry.
- H9:** Environmental beliefs and values are significantly related to green human resource management in the hotel industry.
- H10:** Environmental beliefs and values significantly moderate the association between GTFL and green HRM
- H11:** Environmental beliefs and values significantly moderate the association between green HRM and environmental performance.

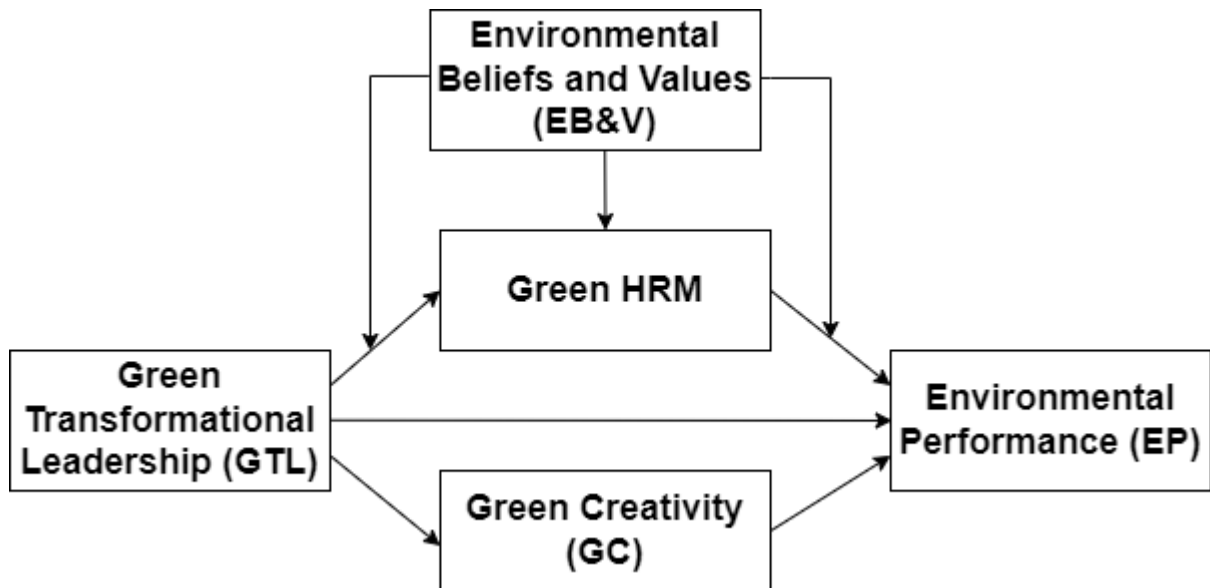


Figure 1: Conceptual Model

Methods

Sample and data collection

It was a quantitative study directed at the Pakistan hotel industry. The hotel industry was selected because in Pakistan it significantly contributes to employment generation with 6% contribution to economic growth (GDP) and 3% employment generation (Hayat Bhatti et al., 2020; Malik et al., 2020). Moreover, the role of the hotel industry is critical in environmental concerns in Pakistan such as energy utilization, water conservation, and waste management (Umrani et al., 2020). Therefore, the hotels in Pakistan were targeted as the population of this study. We were unable to obtain a complete listing of hotels registered in the population framework. Therefore, this research considered the non-probability sampling design and purposive sampling technique taking hotels from two major cities of Pakistan: Lahore and Islamabad. The sample size was decided by considering the rule of thumb of 10 respondents for individual variables (Chin and Newsted, 1999). In order to validate the results, 50 respondents with 5 variables, including the dependent variable, were sufficient (Chin & Newsted, 1999). As a result, the sample size for the current study was 170 hotels (Lahore: 95 and Islamabad: 75), and survey questions were used to gather the data. The researchers compiled a list of hotels from several web resources and listed each one along with its name, location, and contact information. Hotels with more than 50 employees, were selected to avoid hotels that lacked formal HRM procedures (Collins & Smith, 2006). All hotels were of the three-star category or higher. The managers/ owners were considered as respondents on behalf of organizations. After taking appointments, the researchers visited the respective hotels and collected data through self-administration of questionnaires.



Measurement of Scale

The research measured latent components using a 5-point Likert scale:

3.2.1 GTFL: GTFL is measured through 7 items from the study of Chen and Chang (2013). A sample item is “I encourage colleagues to work on an environmental policy.”

3.2.2 Green HRM: It is measured through an 11-item scale of Sun, Aryee, and Law, (2007). “We hire only those employees who have environmental values” is a sample item from the scale.

3.2.3 Environmental Performance: It is measured through the scale of Melnyk et al. (2003) and comprises 10 10-items.

3.2.4 Green Creativity: It is measured through a 6-item scale by Chen and Chang (2013). A sample item consists of “Our employee suggests novel means to achieve environmental goals”.

3.2.5 Environmental beliefs and values: It is measured through the 6-item scale of Gürlek and Tuna (2018) and Zhang, Wang, and Zhao (2019). “One of the firm's core corporate values is protecting the environment” is a sample item.

Data analysis

The study was based on quantitative data that were examined through the partial least square-based structural equation modeling (PLS-SEM) technique by Smart PLS 3.0. PLS-SEM was a suitable technique to enlighten the interdependence among multiple independent and dependent variables (Hair, Ringle, & Sarstedt, 2011) that were present in our theoretical framework. Moreover, it was an appropriate technique to test the indirect and direct effects, in particular the impact among multiple moderators and mediators (Holmbeck, 1997).

The assessment of the measurement model was conducted in the initial phase of analysis, including the examination of Cronbach's alpha, composite reliability (CR), factor loading scores, and average variance extracted (AVE). In the second phase structural model was assessed through the examination of interdependence between latent-to-latent variables. Our study included mediation as well as moderation. Therefore, the analysis included the extraction of direct and indirect relationships separately. Interactions between moderating variables (environmental beliefs and values in this study) and each corresponding independent variable were calculated for the analysis of moderation, and the models were estimated using Hayes statistical models (2017). The decision on each hypothesis (i.e. supported or not supported) was reached using β values, t-values, and p-values. The structural model was further facilitated by using criteria such as assessment of coefficient of determination (R^2), effect size (f^2), Path Coefficient, and assessment of predictive relevance (Q^2).

Results

Evaluation of measurement models

Table 1 provides the results of measurement models. In order to meet an acceptable standard for construct reliability, Cronbach's alpha along with the composite reliability of the constructs must exist above 0.7 value (Kraus et al., 2020; Hair et al., 2019; Sarstedt et al., 2017). As exhibited in Table 1 each of the five constructs had a CR and a Cronbach alpha value above the 0.7 threshold which indicates the construct's strong reliability.

According to Richter et al. (2020), convergent validity can be determined by the outer loadings of the items, which must be greater than 0.7. Furthermore, convergent validity is also indicated by the AVE of the constructs, where a value exceeding 0.5 is favorable. The values of AVE are less than



0.5 in all the constructs which confirms the existence of the construct's convergent validity. Moreover, the values of factor loading in all constructs are more than 0.7 and hence fall in the acceptable range (Hair et al., 2019). However, a few of the factors loading values were less than 0.7 but they were not excluded from the analysis. The reason behind, they were not disturbing the AVE or reliability values.

Table 1: Reliability and Validity of Construct

Constructs	Loading	α	AVE	Composite Reliability
GHRM1	0.741	0.875	0.586	0.894
GHRM2	0.727			
GHRM4	0.669			
GHRM5	0.796			
GHRM5	0.836			
GHRM6	0.810			
GC1	0.739	0.895	0.707	0.923
GC2	0.882			
GC3	0.868			
GC4	0.872			
GC5	0.833			
EP1	0.732	0.851	0.573	0.889
EP2	0.722			
EP3	0.771			
EP4	0.795			
EP5	0.768			
EP6	0.751			
GTFL1	0.676	0.769	0.522	0.845
GTFL2	0.746			
GTFL3	0.757			
GTFL4	0.786			
GTFL5	0.676			
EB&V1	0.760	0.769	0.522	0.916
EB&V2	0.812			
EB&V3	0.789			
EB&V4	0.858			
EB&V5	0.830			
EB&V6	0.761			

Note: α = Cronbach alpha (reliability); AVE = Average variance extracted

Discriminant validity was evaluated with Heterotrait-Monotrait Ratio (HTMT) by Henseler et al. (2015) through a multigrain and multi-method matrix. Teo et al. (2008) suggested that a value below 0.9 is good. The results are summarized in Table 2. All the values of the table are under the minimum criteria of 0.9 showing discriminate validity.



Table 2: Heterotrait-Monotrait Ratio (HTMT)

	EBV	EP	GC	GHRM	GTFL	Moderating Effect 1	Moderating Effect 2
EBV							
EP	0.719						
GC	0.737	0.602					
GHRM	0.674	0.634	0.625				
GTFL	0.689	0.663	0.626	0.832			
Moderating Effect 1	0.177	0.094	0.257	0.258	0.408		
Moderating Effect 2	0.265	0.158	0.303	0.365	0.275	0.733	

Note: GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, EP = Environmental Performance.

Hypothesis testing for direct relationships

The hypothesis is tested through the bootstrapping technique in Smart PLS 3 using a regression coefficient. The sample size was 170. The regression coefficient is ranging from 1 to 01 (Richter et al., 2020). Explanatory research in social sciences recommends a 5% significance level in research (Hair et al., 2017, 2019) thus, hypothesis acceptance is dependent on the following constraints for example., β values, t-values (greater than 1.96), and p-values (less than 0.05) (Kraus et al., 2020; Sarstedt et al., 2017). Table 3 provides results of direct relationships and Figure 2 also depicts the path model of direct relationships among the variables.

Table 3 Direct relationships

Hypothesis	Relationship	B	S. E	t-values	p-values	Decision	C.I	95%
H6	GC -> EP	0.124	0.063	1.990	0.047	Accepted	0.014	0.251
H3	GHRM -> EP	0.172	0.076	2.257	0.024	Accepted	0.025	0.315
H1	GTFL -> EP	0.163	0.066	2.457	0.014	Accepted	0.030	0.286
H5	GTFL -> GC	0.523	0.050	10.424	0.000	Accepted	0.433	0.618
H2	GTFL -> GHRM	0.501	0.051	9.749	0.000	Accepted	0.403	0.603

Correlation is significant at the 0.01 level, where, GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, and EP = Environmental Performance.

The results demonstrate that GTFL has a positive and substantial impact on environmental performance ($\beta=0.163$, $t = 2.457$, $P<0.05$), GHRM ($\beta=0.501$, $t = 9.749$, $P<0.05$), and green creativity ($\beta=0.523$, $t = 10.424$, $P<0.05$). Moreover, green creativity has a substantial positive impact on environmental performance ($\beta=0.785$, $t = 0.387$, $P>0.001$) and GHRM also has a positive and significant link with environmental performance ($\beta=-0.172$, $t=2.257$, $P<0.05$). The value of R^2 (see Figure 2) ranges from 0.274 to 0.522 indicating that the model has very good predictive relevance.

Mediation testing

Table 4 shows the results of indirect relationships for testing the mediating role of GHRM on the linkages among GTFL and EP. The statistical approach of Hayes (2017) was used for mediation testing in the model. Two mediators, green creativity and green HRM practices were used to investigate the unique indirect effects of GTFL on environmental performance. The results display



that the indirect effect of GTFL on EP by GHRM was found to be significant ($\beta=0.065$, $t = 2.162$, $P<0.05$). This reflects that the relationship between GTFL and EP is partially mediated by GHRM. In the same way, the indirect result of GTFL on EP through GHRM was found significant ($\beta=-0.065$, $t = 1.945$, $P<0.05$).

Table 4 Indirect relationships

Hypothesis	Relationship	B	S. E	t-values	P-values	C.I	
						2.5%	97.5%
H7	GTFL -> GC -> EP	0.065	0.033	1.945	0.050	0.008	0.129
H4	GTFL -> GHRM -> EP	0.065	0.040	2.162	0.031	0.008	0.129

Note: Correlation is significant at the 0.01 level, where, GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, and EP = Environmental Performance.

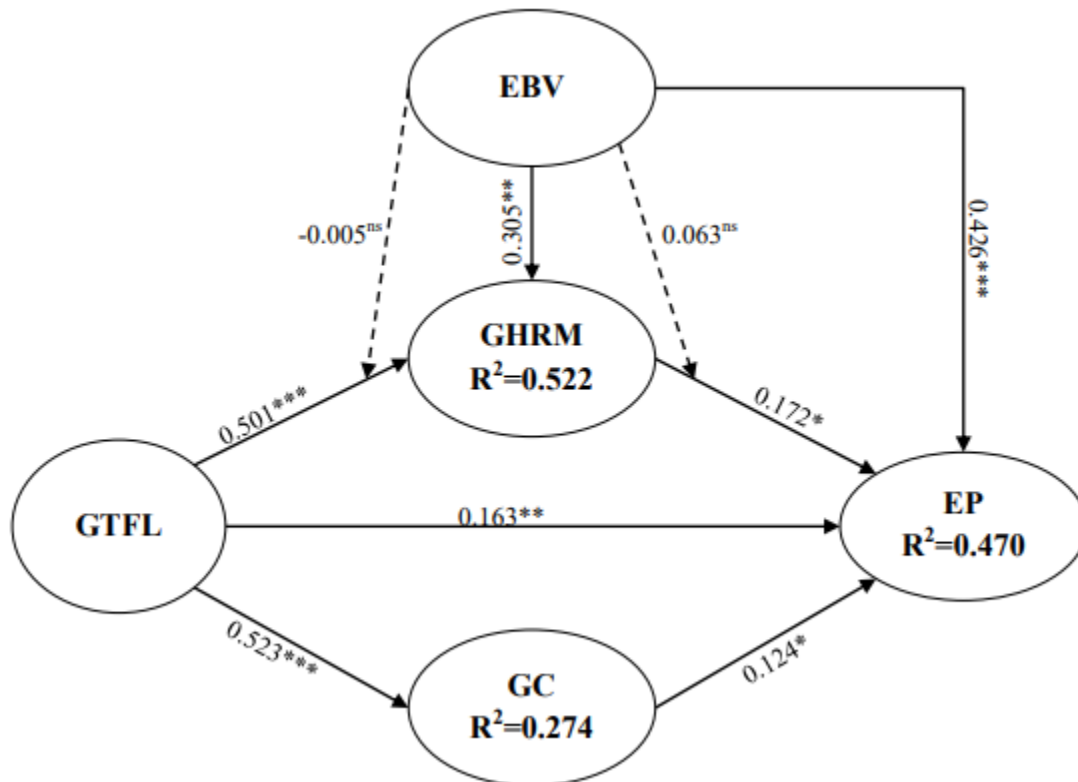


Figure 2: Structural Model

*p-value<0.05, **p-value<0.01, ***p-value<0.001

GTFL=Green Transformational Leadership, GHRM=Green Human resource Management, GC=Green Creativity, EP=Environmental Performance, EB&V=Environmental Beliefs & Values



Moderating Effect in the model

Following Esposito Vinzi et al. (2010) moderation effect in the model was examined. First, the primary impact of the independent factors on the dependent variable was evaluated, then the basic influences of the moderator on the dependent variable, and finally the interaction terms, or the multiplication of independent variables by the moderator variable, were considered. The latent interaction variables were found by combining the indicators of the variables (Chin et al., 2003). According to Hair et al. (2013), the moderating impact only applies when the interactions between variables are substantial. Table 5 provides the findings and Figure 3 shows interaction slopes. Table 5 shows that EB&V has a significant and positive relationship with environmental performance ($\beta=0.426$, $t = 6.626$, $P<0.05$) and GRRM ($\beta= 0.305$, $t = 6.100$, $P<0.05$). However, the interaction effect of EB&V between GTFL and GHRM is not found significant ($\beta=-0.005$, $t = 0.134$, $P<0.05$). The same is true in the interaction effect of EB&V between GHRM and EP ($\beta=0.063$, $t = 0.184$ $P<0.05$) which is not found statistically significant. EB&V has no significant influence on the relationship between GTFL and GHRM.

Table 5. Moderating effect

Hypothesis	Relationships	β	S. E	t-values	P-values	Decision
H8	EB&V -> EP	0.426	0.064	6.626	0.000	Accepted
H9	EB&V -> GHRM	0.305	0.050	6.100	0.000	Accepted
H10	Interaction of GTFL*EB&V-> GHRM	-0.005	0.035	0.134	0.894	Rejected
H11	Interaction of GHRM*EB&V -> EP	0.063	0.035	1.824	0.069	Rejected

Note: Correlation is significant at the 0.01 level, Wherein, GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, EP = Environmental Performance

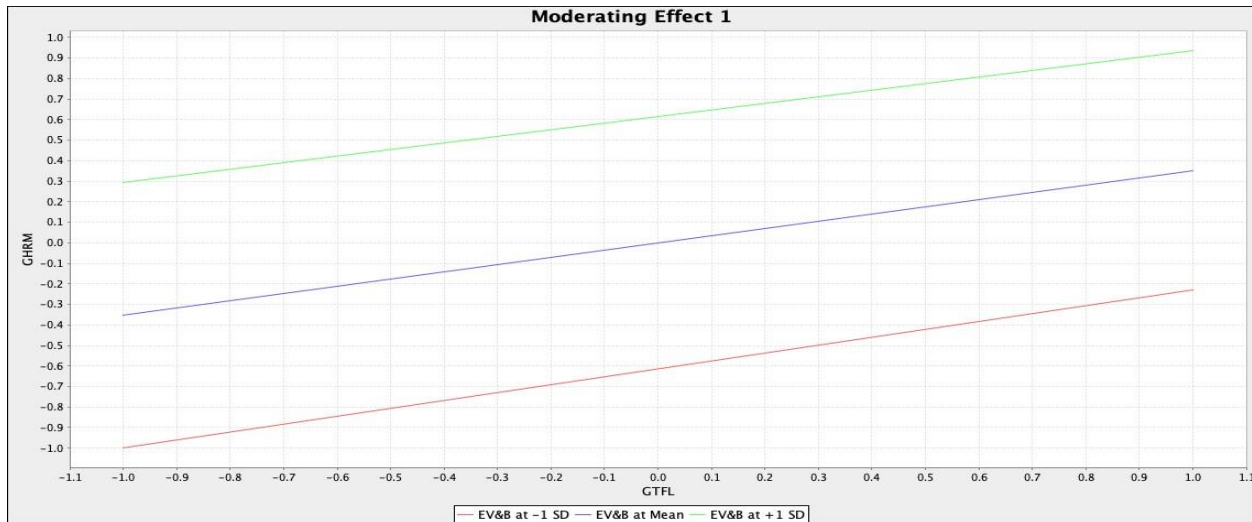


Figure 3: Slope Analysis-Moderating Effect 1

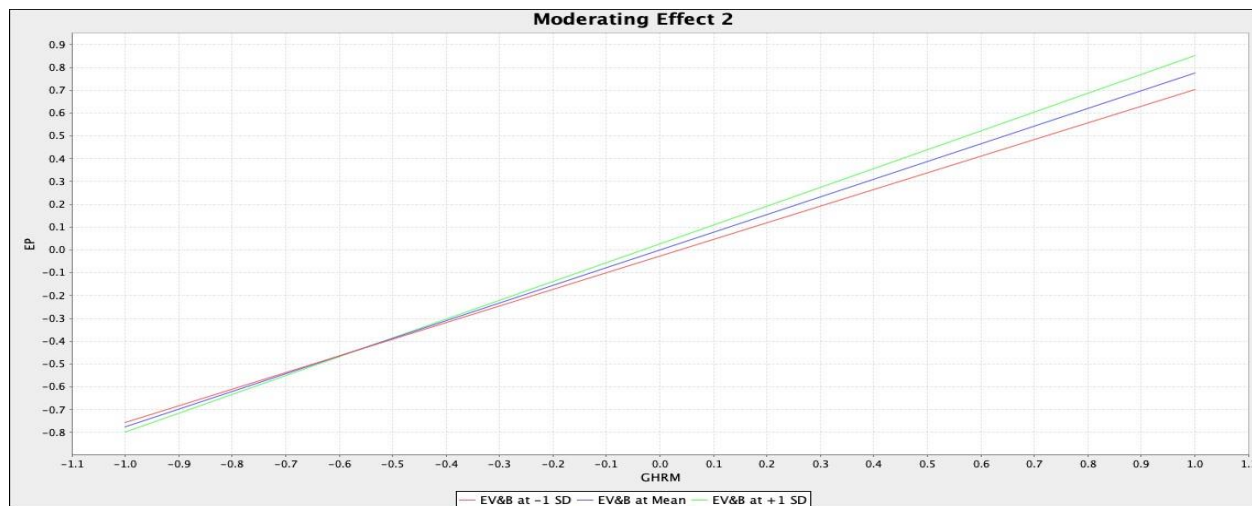


Figure 4: Slope analysis-moderating effect 2`

Model fitness and Prediction relevance

Values of coefficient of determination (R^2) and effect size (f^2) are assessed for model fitness and predictive accuracy for this blindfolding technique was used in PLS-SEM (Richter et al., 2020). Table 6 and Table 7 provide values of R^2 and f^2 respectively.

Table 6: Model fitness

	R^2	S. E	t-values	p-values
EP	0.470	0.048	0.048	0.000
GC	0.274	0.052	0.052	0.000
GHRM	0.522	0.048	0.048	0.000

Note: Correlation is significant at the 0.01 level, where, GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, and EP = Environmental Performance.

Table 7: Results of f^2

	B	S. E	t-values	P-values
EBV -> EP	0.124	0.047	2.642	0.008
EBV -> GHRM	0.131	0.047	2.789	0.005
GC -> EP	0.015	0.017	0.903	0.367
GHRM -> EP	0.025	0.024	1.036	0.301
GTFL -> EP	0.025	0.020	1.220	0.223
GTFL -> GC	0.377	0.104	3.637	0.000
GTFL -> GHRM	0.315	0.079	3.997	0.000
Moderating Effect 1 -> GHRM	0.000	0.006	0.011	0.991
Moderating Effect 2 -> EP	0.011	0.013	0.850	0.396

Note: Correlation is significant at the 0.01 level, Wherein, GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, EP = Environmental Performance

The results of Table 7 demonstrate the magnitude of the influence of a certain exogenous construct on a corresponding endogenous construct. Findings reveal that the majority of external constructs had no impact on the corresponding endogenous construct. According to Cohen (1988), the exogenous construct's impact size of 0.02, 0.15, and 0.35 have been classified as minor, moderate, and major impacts, respectively. Chin et al. (2003) point out that the slightest power of f^2 should be taken into account since it might have an impact on endogenous variables.



The structural model's capacity for predictive relevance is also evaluated. The Stone-Geisser criteria, which presupposes that an inner model should mandatorily offer proof that there is a likelihood of latent construct indicators, serves to assess the predictive significance (Henseler et al., 2009). According to Richter et al. (2020) the predictive relevance metric, or Q², determines whether or not a model is predicatively relevant. Additionally, Q² confirms the predictive importance of an endogenous component. Q² values greater than 0 indicate that your values have been accurately recreated and that the model has predictive power. The purpose of applying blindfolding operation in Smart-PLS is to determine the Q² value. Values in Table 8 show that all the values of Q² are greater than zero which means the model shows a good predictive relevance.

Table 8: Values of Q²

Variable	SSO	SSE	Q ² (=1-SSE/SSO)
EP	1944.000	389.513	0.259
GC	1620.000	432.724	0.187
GHRM	1944.000	635.991	0.299

Note: Correlation is significant at the 0.01 level, where, GTFL = Green Transformational Leadership, GC = Green creativity, EB&V= Environmental beliefs and values, GHRM= Green human resource management, and EP = Environmental Performance.

Discussion

The main intention of this study was to find out the mediating role of GC and GHRM and the moderating role of EB&V in the relationship between GTFL and EP in the hotel industry in Pakistan. GTFL as an independent variable is hypothesized to have a positive effect on EP, the relationship is also mediated by GC and GHRM and moderated by EB&V.

The findings imply that the hotel industry can enhance their environmental performance by applying GHRM practices because environmental problems are increasing day by day and sustainable use of resources is the only solution. This research is supported by the theory of RBV because leadership and employees are considered critical resources of the firm, unlike any other resource of the firm. Through the research objectives, eleven hypotheses were formulated and tested through Smart PLS 3.0 including both direct and indirect relationships.

The findings demonstrate that GTFL has a significant and positive effect on environmental performance; GHRM and green creativity. In the literature, it is suggested that GTFL consists of establishing a creative environment, motivating, inspiring, and compelling coworkers to believe in and relate to a leader's vision which influences the organization's performance and innovation (Singh et al., 2020; Sun et al., 2022; Ng, 2017; & Mittal Dhar, 2015). Existing literature suggests that GTFL is essential and crucial to firm performance because members are able to perform better at all levels of the organization (Barrick et al., 2015) due to their exceptional achievements in extra-role task behaviors and innovativeness (Vinod et al., 2020). Additionally, GTFL makes use of green HR practices that strengthen employees' skills and desires by offering them the opportunity to engage in sustainability initiatives and management-related procedures for improved levels of organizational growth (Dumont et al., 2017; Renwick et al. 2013; Chen et al., 2006). In this regard, the results of the present study are consistent with those of earlier studies (Vinod et al., 2020; Umrani et al., 2020, Kang & Lee, 2021; Rizvi & Garg, 2021; Sun et al., 2022; Tian et al., 2023). Our research revealed that the aspects of management, individual performance, talent acquisition, creativity, and along with performance management were highly influenced by the GTFL aspects, particularly the intellectually driven component.



This result indicates that GTFL plays an essential role in implementing green practices in the hotel industry, instilling creativity in employees, and improving environmental performance through motivation and creativity. It also implies that leadership is a critical resource to enhance environmental performance in a country like Pakistan in which power distance is high. The result of this hypothesis is also supported by RBV theory that GTFL impacts environmental performance because leadership is considered a critical resource to achieve competitive advantage through motivation, inspiration, and creativity in the firm. GTFL can influence nurture and cultivate green practices relative to HRM in such a way that enables organizations to sustain environmental performance.

Moreover, this study found the mediation of two factors that enabled GTFL to enhance EP i.e. GHRM and green creativity. GTFL's indirect influence on EP through GHRM was established to be significant showing that the relationship between GTFL and EP is partially mediated by GHRM. Similarly, the relationship concerning GTFL and EP is partially mediated by green creativity. These findings support the literature. Empowered organizational professionals who set a good example have a greater possibility to have employees who hold environmental transformations and eliminate dangerous organizational activities proactively (Awan et al., 2023; Daily et al., 2012; Pieterse et al., 2010; Daily & Huang, 2001). According to Egri and Herman (2000), HR managers must hire and retain leadership who has the capability to swiftly shift between operational and strategic level decision formulation tasks. In general, the main goal of training and development is to promote and encourage employees' green competencies in such a way that they demonstrate a higher priority on reducing operations that unnecessarily create dangerous waste products (Simpson & Samson, 2010). Through GHRM, leadership can better channel the employees' efforts towards environmental performance. Through green HRM employees' green practices and creativity are rewarded and appreciated by the leadership, which motivates them to put more effort into pro-environmental practices. Hence, GHRM can enable GTFL to institutionalize green practices in the organization. Another critical link, in the process, is the support and enhancement of green creativity. GTFL develops an environment of green creativity among employees, which acts as an essential element to enhance the environmental performance of the organization.

This study also argued for the moderating role of EB&V in the model i.e., EB&V moderates the relationship among GTFL and GHRM, and EB&V moderates the relationship between GHRM and EP. However, both moderations were found insignificant. The reason for moderation insignificance is as follows: Firstly, it's possible that Pakistan's social and contextual elements have less of an impact on the relationships among GTFL, GHRM, and EP. Social and socioeconomic factors frequently have an impact on EB&V; if those variables vary considerably from those in countries where interactions have been demonstrated to be significant, the outcomes may change. Secondly, when compared with industries in various countries, the hospitality sector in Pakistan could be at a different level of advancement with regard to environmental consciousness and environmentally friendly practices. It's possible that as ecological consciousness and practices advance as time passes, the moderating impacts become readily apparent. Whereas, Literature argues that top managerial leadership environmental values and principles have a substantial impact on the organization's capacity to implement GHRM practices in the workplace (Awan et al., 2023; Tian et al., 2023; Jia et al., 2018; Nisar et al., 2017; Renwick et al., 2013). As a result, GTFL organization made a significant contribution to the creation of green HR guidelines and practices with the goal of enabling organizations to successfully convey their objectives and initiatives to their employees with the aim to pursue overall performance that is innovative and green. Therefore, environmental beliefs and values have a noteworthy role in GHRM



development and in enabling GHRM to enhance environmental performance. However, our results do not support this hypothesis. One of the reasons could be that the current literature, that supports the role of EB&V, is mostly in the environment of developed countries. The culture of Asian developing countries such as Pakistan is quite different. Since this study adopted the instrument from the existing literature, it may have less relevance in the context of Pakistan. Therefore, it is suggested that the instrument of EB&V needs to be reconsidered carefully in future studies. Moreover, covid-19 pandemic has also changed various dynamics of workplace environment and culture which could also be the reason for the hypothesis is not supported.

The findings show the relationship between GHRM, GC, GTFL, and EP, based on RBV and AMO theoretical lenses. GTFL is observed as a significant resource that can enable the organization to develop processes such as GHRM and employee creativity and lead them toward the direction of pro-environmental performance of the organization. Whereas, from the theoretical lens of AMO, it is argued that the leadership supports and creates ability-motivation opportunity in the organization that enables it to achieve the ultimate goal of environmental performance or organization. Hence, AMO conceptualizes the critical path through which GTFL affects EP.

Conclusions and implications

The findings of this research yield various key ideas for the future concept. First, it provides the path and process through which GTFL enhances EP. According to the results, GTFL has positive and significant relationships with green creativity and GHRM. Moreover, GHRM as well as green creativity acts as a mediator between the relationship of GTFL and EP. Hence, GHRM and green creativity are the critical links that enable GTFL to enhance EP. In addition, this study provides arguments in light of RBV and AMO theory and hence the results strengthen these theories for their application in the domain of green organizational literature.

The findings imply that people management and leadership, in different ways, play an essential role in fulfilling human potential. Based on the findings, we believe that green transformation leadership is an important requirement for HRM to enhance businesses' environmental performance through green innovation. The study also discovered that green innovation has an impact on a company's environmental performance. Therefore, we contend that GTFL plays a critical role in creating an environment where employee's creativity can be enhanced.

Under practical implications, organizations need to invest more in GTFL because it has the critical ability to drive the path toward the organization's environmental performance. We propose that GTFL provides workers with green ability and inspiration with the chance to comprehend the potential in a stable environment to help the business, become green. Moreover, organizations need to develop green HR policies related to employee recruitment, reward, and appraisal since green HRM is the main enabling factor in the whole process. Many academics and experts in the hospitality sector have realized that economic management, which includes environmental preservation, is becoming one of the most essential tasks of the hospitality industry (Yen & Liu, 2013). Before other utilitarian initiatives in environmental management, the hotel industry should prioritize green HRM.



Limitations and future directions of the study

The present research has several limitations. Initially, its focus was limited to the hotel sector in Pakistan. Other sectors in Pakistan and other nations could be studied by future researchers. Additionally, our conceptual model could potentially be duplicated and it can be assessed whether the associations are similar by looking at other leadership styles and their consequences in different industries. Furthermore, despite the fact that the findings are trustworthy and accurately reflect the population being studied, this research uses cross-sectional data. Thus, a longitudinal design could be used by scholars to find the temporal correlations. This study argues and conceptualizes the moderating part of environmental beliefs and values in the model that needs to be further studied by upcoming researchers. The association between GTFL and EP was finally studied in relation to Green HRM and GC as a significant mediator. However different mediator factors can be investigated to see how and when interaction among them occurs and strengthen the relationship between GTFL and EP.



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