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Unpacking the Green Leadership-Environmental Performance Link: The Role of Innovation, GHRM and Environmental Values

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Abstract: *The paper investigates connections among green transformational leadership-GTL, environmental performance-EP association along GHRM (Green Human Resource Management) and, Green Innovation-GI as mediating factors. It explores environmental values' moderating role among GTL and EP. Using structural equation modeling, 15 SMEs were surveyed, and 110 data points were collected from individuals. Results indicate that GTL contributes significantly to EP. Additionally, the mediation analysis confirms that GTL and EP are positively mediated by GHRM and GI. It is also highlighted that EV has a moderating effect on GTL/EP relationships. A sustainable business culture can be fostered by utilizing these insights.*

Keywords: Leadership, Values, Innovation, Performance, GHRM

Introduction

Environmental issues have worsened significantly in the last decades, creating serious threats to the environment that could lead to catastrophic consequences. The growing importance of raising awareness about environmental issues and actively addressing detrimental effects (Amjad et al., 2021; Makhloufi et al., 2022). Global warming, biodiversity loss, ocean acidification, health crises, deforestation, ozone layer depletion, and pollution are most pressing environmental concerns. These concerns are vital for both developing and developed nations as economic development is threatened by environmental degradation across the world. (Ikram et al., 2021). Global warming and loss of biodiversity are particularly exacerbated in developing countries like Pakistan. Aslam et al. (2021) reported that Peshawar is considered a polluted city. Some of the serious environmental issues that are being experienced by Pakistan include climate change etc. Environmental degradation has largely been attributed to the Industrial Revolution, where the first and second revolutions enabled mass production by mechanization and electrification, respectively. Automation and digital technologies used during the third revolution also impacted environmental factors (Javaid et al., 2022). However, new-generation technologies enable sustainability and green industrial processes.

Following the environmental catastrophes, businesses, including manufacturing SMEs, have shifted towards green-innovation. Growing public concern over environmental issues has driven environmental activism, thus forcing businesses to adopt green innovation (Lee et al., 2024). As customers' environmental concerns grow, firms must incorporate environmental management principles into their strategy to improve the company's green image (Rusyani et al., 2021). Green innovation enables organizations to differentiate in the marketplace as well as address environmental problems at the same time (Arici & Uysal, 2022). Environmental management paradigms enhance green innovation and, embrace today's environmental needs (Chen & Chang, 2013; Jayaraman et al., 2023).

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GTL has a central part in the enhancement of innovation and employees' motivation towards sustainability goals. Transformational leaders are responsible for inspiring their followers, stimulating innovation, and modeling the values of creating a green environment (Farrukh et al., 2022). GTL has connected to environmental sustainability, but research on this topic is relatively limited. Studies in different countries found that transformational leadership impacts on green behavior. For instance, Hameed et al. (2022) found high correlation among GTL and creativity in Pakistan, while Maitlo et al. (2022) found impacts on GI in China. NF & Arulrajah (2023) found in Sri Lanka that GTL increases mindfulness, and overall performance. Niazi et al. (2023) argued that GTL correlates with green performance in Pakistan.

Given the environmental problems magnitude, particularly in urban settings like Peshawar, environmental aspects must be incorporated into policy formulation. Green transformational leadership has been previously mentioned by researchers about innovation, but there is little research available to examine its impact on environmental performance. In addition, little focus has been given to the intervening mechanisms of GHRM and green innovation.

The research offers several contributions. First, investigates in Pakistan, with particular emphasis on the large cities, i.e. Karachi, Lahore, and Rawalpindi, which are experiencing severe pollution problems. Second, few pioneering studies investigating GTL on EP (direct effect). Third, it investigates GHRM and GI mediating roles through SEM applications. The findings are crucial for supervisors to encourage sustainability and ecological responsibility.

Literature Review

Theoretical Framework

RBV theory and AMO framework underpin this strategy. HRM literature shows that human capital affects company performance. with theoretical roots reaching back to earlier studies (Negt & Haunschild, 2024). The RBV model presupposes that competitive advantage and acts result from the efficient deployment via its valuable strategic resources—resources with their scarcity, inimitability, and ease for competitors to replicate them (Sugiarno & Novita, 2022).

AMO-based High-Performance Work Systems (HPWS) use human resource strategies to target opportunity, motivation, and ability (Bhatti et al., 2021). Recruiting, selecting, and professional development programs ensure that employees have the skills they need for their jobs. Motivation is fostered through performance appraisals and different type of incentives, that motivate employees toward organizational success. The "opportunity" concept includes policies that create employee participation and involvement, such as information sharing and decision-making power.

The development of employees' green training capabilities is especially crucial to enhance collaboration with customers and suppliers (Tu & Wu, 2021). In this connection, employee development and leadership are essential to the firm's success, just like any other strategic asset. The core agenda of GHRM practices motivates and generates opportunities leading to high, sustained performance, hence gaining competitive-edge (Muisyo et al., 2022). Accordingly, human resources follow Resource Based View (RBV) principles by leading to outstanding organizational performance and long-term viability. A firm's hierarchical social framework, deeply anchored in human capital, enables it to leverage its internal resources better than its peers (El Nemar et al., 2022).

GTL and GHRM

Transformational leadership shapes a company's strategy, particularly in volatile markets, by adjusting to emerging developments, fostering creativity, and promoting a long-term focus (Gachira & Ntara, 2024). Transformational leaders, who exude passion in the pursuit of their goals, compellingly convey their vision, and inspire creativity, create confidence in their workforce, which leads to greater organizational commitment and performance. Among the generic schools of thought, GTL has taken on prominence as an influential concept in today's business. Singh et al. (2020) defined GTL as a leadership style that inspires, motivates, and leads organizations beyond environmental standards through sustainability goals adoption. GTL promotes environmental accountability culture, persuades employees to perform green

activities and support sustainability. GTL and GHRM promote organizational sustainability through HR practices that address environmental issues. Hence, GRL and GHRM links have been confirmed (Gachira & Ntara, 2024; Muisyo et al., 2022). Therefore, proposed that:

H1: GTL significantly relates to GHRM

GHRM and EP

Previous studies on GHRM have provided its important impact on EP (Chowdhury et al., 2023). If an organization prioritizes environmental initiatives over profit-making, it aims to maximize a positive effect on the environment. By integrating sustainability into HR policies, organizations could encourage pro-environmental behaviors, leading to improved EP (Aftab et al., 2023). Likewise, GTL could support individuals' sustainable commitment, increasing positive action toward firm EP. Therefore, Aftab et al. (2023) indicated that GTL would maximize sustainability performance. Hence, the study of Cao et al. (2021) recommended environmental performance that decreases ecological influence and reduces waste and sustainable performance.

GHRM and green training promote environmental awareness and culture (Rehman et al., 2021; Cao, 2021). However, empirical investigations linked GHRM with EP, demonstrating corporations addressing environmental challenges. HR procedures may increase sustainability reporting and compliance (Aftab et al., 2023). Further, Rehman et al. (2021) explained GHRM promotes EP experimentally. Therefore, it is proposed that:

H2: GHRM is significantly related to EP

GI and GTL

Huang et al. (2022) explained GI as eco-friendly products help sustainable business practices. GTL pertains to green's innovation and increasing research and development (R&D) (Özgül & Zehir, 2023). An organization lacking green innovation tactics invests resources in green sustainable solutions. Employees execute better innovation culture according to the established green environment. Previous research describes that GI culture can affect how GTL affirms that almost all employees adopt sustainability works (Özgül & Zehir, 2023). GTL and GI are vital for driving sustainable growth. Organizations accomplish financial and environmental objectives by seeing how leaders encourage (Odeyemi et al., 2024). Successful green transformational leaders' scenarios provide significant insight into the methods and approaches that have worked well for promoting green innovation in businesses. Additionally, leaders who want to stay ahead in a market that is becoming more environmentally concerned must comprehend the different forms of green innovation and how they might affect organizational sustainability and competitiveness. GTL promotes GI culture to develop eco-friendly processes and products (Özgül & Zehir, 2023). Sustainability projects in businesses depend on green transformative leadership. This leadership style can push teams to embrace eco-friendly practices and find new ways to lower carbon footprint (NF & Arulrajah, 2023; Padilla-Lozano & Collazzo, 2022). Hence, we propose that:

H3: GTL is significantly related to GI

GI and EP

Green innovation has visions for environmental performance in the sustainable business era. Extant literature suggests that friendly product & services supportive processes, wherein ensuring resource efficiency and sustainability (Arici & Uysal, 2022). Cao et al. (2k021) defined GI as product plus process innovation simultaneously. Businesses seeking to minimize their carbon footprint and operate sustainably must link green innovation and EP. Green innovation reinforces company's environmental strategy performance. Green practices are key for businesses looking to thrive in a more environmentally conscious market (Hameed et al., 2022).

Environmental performance lessens harm through pollution control, waste reduction, and sustainable practices adoption (Singh et al., 2020). Highly effective organizations actively engage in green innovation,

driving improved EP (Rehman et al., 2021). Embracing GI fosters long-term sustainability benefits, including regulatory compliance, heightened trust, and competitive advantage (Arici & Uysal, 2022).

Empirical evidence reveals a strong positive correlation among GI and environmental performance. Investments in green business practices and technologies significantly enhance environmental outcomes and organizational sustainability (Arici & Uysal, 2022). Green innovation mitigates environmental risks while continuously advancing ecological performance through sustainable production methods and EP enhancement (Huang et al., 2022). Therefore, it is proposed that:

H4: GI is significantly related to EP

GTL and EP

GTL significantly enhances organizational effectiveness in areas such as employee behavior, commitment, and financial performance (Eitan & Gazit, 2024). Research indicates that leaders who support green practices can encourage employees' commitment to environmental goals, thereby improving EP (Memon et al., 2022). GTL increases green-engagement and environmental performance (Hameed et al., 2022).

GTL is a key focus to promote environmental sustainability within organizations. GTL involves leaders' motivation, empower, and challenge employees with a sustainability shared vision (Jayaraman et al., 2023). Further, grounded in a pro-environmental culture, also GTL inspires employees to adopt sustainable practices, engage in environmental activities, and foster long-term ecological-sustainability (Farrukh et al., 2022).

Effective EP also lessens environmental footprints via managing resources sustainably, reducing pollution, and environmental regulations conforming (Niazi et al., 2023). Organizations that excel in environmental performance work, enhance waste management, and increase energy efficiency (Aggarwal & Agarwala, 2023). GTL advocate for environmental awareness, formulate sustainability-based policies, and involve employees in green initiatives (Mansoor et al., 2021). Additionally, the GTL encourages innovation and continuous improvement with an emphasis on sustainability so that employees can start green initiatives (Aslam et al., 2021). GTL help organizations achieve a superior EP through implementation of green strategies (Begum et al., 2022). Incorporating environmental principles into their company culture allows organizations to establish long-lasting sustainability capabilities and thus supports to strengthen their overall EP. Therefore, it is proposed that:

H5: GTL is significantly related to EP

GHR Mediates GTL-EP Relationship

In the contemporary business environment, Green Transformation Leadership (GTL) acts as a primary driver of environmental sustainability. This leadership framework consists of leaders who motivate and encourage workers towards the achievement of environmental objectives through a collectively embraced sustainability vision (Farrukh et al., 2022). By creating a culture of pro-environmental actions, GTL promotes actions that contribute to sustainability (Ikram et al., 2021). Environmental performance (EP) refers to organizational efforts towards reducing environmental footprints through sustainable use of resources, pollution management, and adherence to regulatory frameworks (Lee et al., 2024). Organizations that prioritize robust EP focus on energy efficiency to comply with global sustainability standards. Research shows a strong association between GTL and EP (Mansoor et al., 2021; Begum, 2022). GTLs raise environmental awareness, adopt sustainability policies, and engage employees in green activities (Begum et al., 2022).

GTL fosters innovation by embracing continuous improvement and empowering workers (Cao et al., 2021). Organizations with GTL guidance show enhanced environmental performance by embracing strategic actions that center on sustainability (Farrukh et al., 2022). The integration of environmental values into company culture also helps organizations to enhance their long-term sustainability potential, thereby supporting total environmental performance. Thus,

H6: GHRM mediates association among GTL and EP

GI Mediates GTL-EP Connection

Green Transformational Leadership (GTL) empowers people to act sustainably, which is vital to an organization's environmental sustainability. GTL encourages staff to innovate sustainability solutions, promote green activities, and have a long-term environmental stewardship strategy. Although GTL lays the foundation for improved environmental performance (EP), its effects are typically realized through another process—Green Innovation (GI). Niazi et al. (2023) define GI as creating and using sustainable products, and technologies to minimize environmental impact. Leaders employing a green transformational approach enable employees to experiment with sustainable ideas, invest in green research and development, and promote green business practices. Thus, green innovation helps companies reduce waste, conserve energy, and follow regulations (Singh et al., 2020; Khan et al., 2025). Studies indicate that green innovation serves as a bridge between GTL and environmental performance by facilitating the translation of leadership-driven sustainability initiatives into tangible environmental outcomes. Leaders employing a green transformational vision develop an organizational climate that fosters creativity and knowledge sharing regarding green practices, resulting in improved environmental performance. Green innovation techniques also help companies comply with environmental laws and stand out through sustainable business practices.

Green transformative leadership and innovation-based sustainability efforts improve sustainability performance. Green innovation techniques also help companies comply with environmental laws and stand out through sustainable business practices. Green transformative leadership and innovation-based sustainability efforts improve sustainability performance. Based on the above theory and study, the below hypothesis is presented:

H7: GI mediates connection among GTL and EP

EV Moderating Influences in the GTL-EP Relationship

Although Green Transformational Leadership (GTL) is vital for establishing a sustainability agenda, its influence on EP is contingent upon a multitude of contextual variables. Among them, environmental values are a significant factor that can either improve or worsen the influence of GTL and EP.

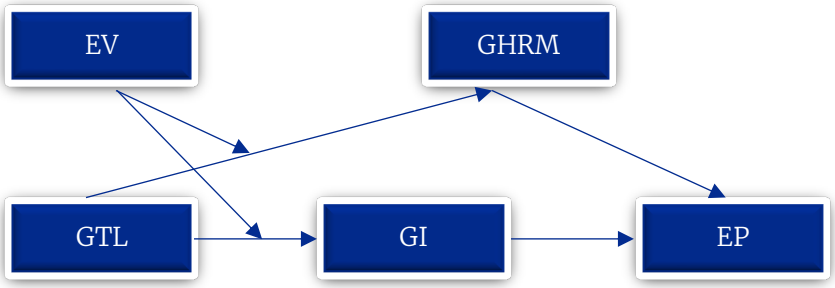
GTL characterized the foster environment commitment culture, and encouraged to pursue environmentally responsible practices, thereby connecting organizational objectives with sustainability objectives. Green transformational leaders enhance overall environmental performance by establishing an inspiring vision, offering intellectual stimulation, and serving as role models, which encourages their subordinates to be actively involved in sustainable practices (Rehman et al., 2023). However, the degree to which employees adopt GTL's sustainability vision is contingent upon their environmental values—those personal attitudes and convictions that influence their dedication to ecological responsibility (Begum et al., 2022).

The strong underlying needs of an individual or organization to ensure sustainability and environmental safeguard are described company's environmental values. The adoption and execution of a leader's green vision are more probable among employees who possess high environmental values, which results in increased green behavior engagement and improved environmental performance outcomes. In contrast, the impact of GTL on environmental performance is diminished when employees are less receptive to sustainability programs, especially when environmental values are low or inconsistent with the leadership objectives. Empirical research indicates that EV significantly influence GTL effects on environmental performance and employees' motivation to adopt sustainability-related behaviors. It is anticipated that organization's with a strong environmental culture, in which sustainability is ingrained in the corporate values, will experience a significantly greater positive impact of GTL on the EP (Gachira & Ntara, 2024). Furthermore, employees' robust environmental values are considerably more inclined to endorse green practices, participate in sustainability initiatives, and dedicate themselves to the development of inventive environmental solutions (Odeyemi et al., 2024). Therefore, we hypothesis that:

H8: EV moderate relationship among GTL and EP

Figure 1

Conceptual-Framework



Methodology

This study gathered information from Peshawar, Lahore, and Rawalpindi, located SMEs. However, self-administered questionnaires were utilized to gather responses from examples of companies, with the assistance of purposeful sampling to collect a sample that was representative of the whole. The environmentally conscious employees were the focus of the poll. However, aid in the gathering of data, trained surveyors provided respondents with information regarding the objectives of the research before requesting that they fill out the questionnaire. Total number of participants was 200, and they came from 20 different firms. Out of those, 110 were valid responses. As shown in Table 1, 70% of respondents have bachelor's degrees, 20% held master's degrees, 5% held doctoral degrees, and 5% held other professional credentials. Approximately 50 percent of the participants were between the ages of forty and fifty, 30 % were between the ages of thirty and forty, and 20 % were over the age of fifty. Further, a significant number of male participants in sample, which represented 90% of the total, whereas there were only 10% of female participants.

Table 1

Demographic

Demographic		%
Education level	Bachelor-degree	70 %
	Master-degree	20 %
	PhD	5 %
	Professional-education	5 %
Age (Years)	> 50	20 %
	40 - 50	50 %
	30 - 40	30 %
Gender	Male	90 %
	Female	10 %

Questionnaire Development and Pre-testing

Additionally, multi-item scales were included among the measurement instruments that were utilised in this investigation. These instruments were derived from earlier research. Singh et al. (2020) served as the foundation for several innovative concepts, including GTL, GI, GHRM and EP. Furthermore, adaptations were made from Hameed et al. (2022) on environmental-ideals and GI.

5 experts, including two HR managers from the organizations that were chosen and three assistant professors who specialize in human resource management, assessed the questionnaire to ensure that the material was found to be valid. After receiving their feedback, some minor tweaks were made before moving forward. To determine whether or not the questionnaire was clear and concise, a pilot survey with forty-five participants was carried out. It was determined that no additional changes were required because there were no serious problems that were noted. Reliability test was examining the internal consistency exhibited by the measurement scales that were utilized.

Data Analysis

PLS-SEM is used to examine the hypotheses. Smart PLS 3 was used because of its advanced assessment features, convenience of use, and ability to support a variety of business and hospitality research investigations (Maitlo et al., 2022). Best practices are used to evaluate both the inner (structural) and exterior (measurement) models in two steps (Tu & Wu, 2021). Younis & Hussain (2023) agree that PLS-SEM is a reliable structural relationship tester.

The flexibility of PLS-SEM is especially useful for small sample sizes. It works well without data normalcy, unlike AMOS (Arici & Uysal, 2022). For construct validity and internal consistency reliability, algorithmic and bootstrapping methods were used to test factor loadings (Arici & Uysal, 2022). After assessing the measurement model, the structural model was evaluated to estimate's-SEM is used to examine the hypotheses in this study. Smart PLS 3 was used because of its advanced assessment features, convenience of use, and ability to support a variety of business and hospitality research investigations (Maitlo et al., 2022). Best practices are used to evaluate both the inner (structural) and exterior (measurement) models in two steps (Tu & Wu, 2021). Younis & Hussain (2023) agree that PLS-SEM is a reliable structural relationship tester. The flexibility of PLS-SEM is especially useful for small sample sizes. It works well without data normalcy, unlike AMOS (Arici & Uysal, 2022). For construct validity and internal consistency reliability, algorithmic and bootstrapping methods were used to test factor loadings (Arici & Uysal, 2022). After assessing measurement model, a structural model was evaluated.

Measurement Model Evaluation

Common measures of measurement model evaluation include convergent validity, loadings, composite reliability, and AVE. This test's extensive results are in Table 2.

Table 2

Convergent Validity

Variables	Items	Loading	α	CR	AVE
GTL	GTL1	0.858	0.899	0.924	0.753
	GTL2	0.890			
	GTL3	0.896			
	GTL4	0.826			
GHRM	GHRM-1	0.404	0.901	0.912	0.523
	GHRM-2	0.829			
	GHRM-3	0.882			
	GHRM-4	0.671			
	GHRM-5	0.778			
	GHRM-6	0.731			
	GHRM-7	0.824			
	GHRM-8	0.504			
	GHRM-9	0.514			
	GHRM-10	0.903			
GI	GI1	0.888	0.858	0.905	0.646
	GI2	0.921			
	GI3	0.895			
	GI4	0.823			
	GI5	0.866			
	GI6	0.091			
EP	EP-1	0.789	0.911	0.934	0.739
	EP-2	0.898			
	EP-3	0.852			
	EP-4	0.912			
	EP-5	0.841			
EV	EV-1	.889	0.918	0.942	0.803
	EV-2	0.928			
	EV-3	.880			
	EV-4	0.887			

Factor Loadings and Validity Assessment

Figures 2 and 3 show factor loadings far above 0.50. Additionally, composite reliability exceeds 0.60. Hair et al. (2020) report that AVE are considerably above 0.50. The Heterotrait-Monotrait Ratio (HTMT) measure in Table 3 displays values fall below 0.85 threshold indicated by Niazi et al. (2023), indicating discriminant validity.

Table 3

Discriminant Validity

	1	2	3	4	5
GTL	(0.645)				
GHRM	0.433	(0.612)			
GI	0.543	0.128	(0.557)		
EP	0.154	0.579	0.323	(0.741)	
EV	0.532	0.535	0.453	0.359	(0.851)

Figure 2

Measurement Model

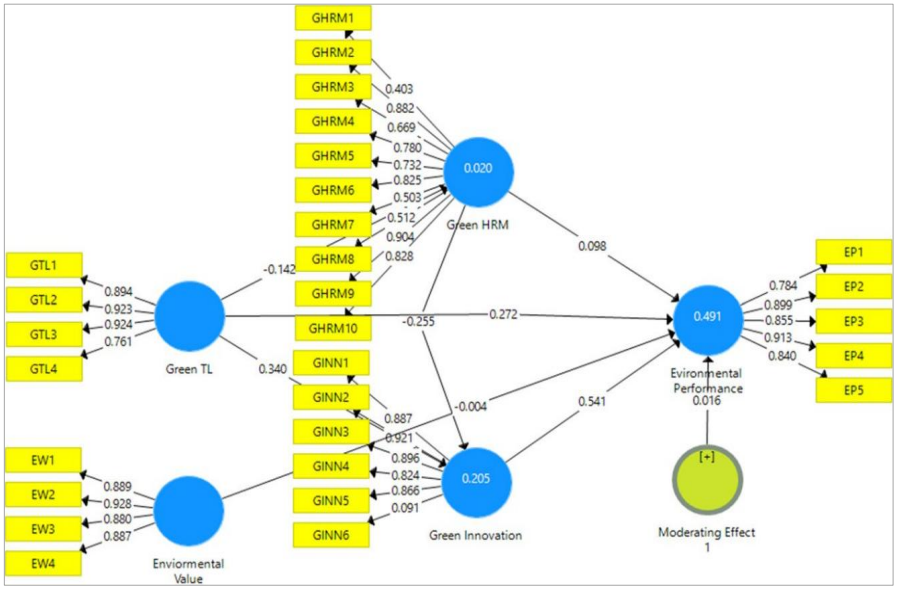
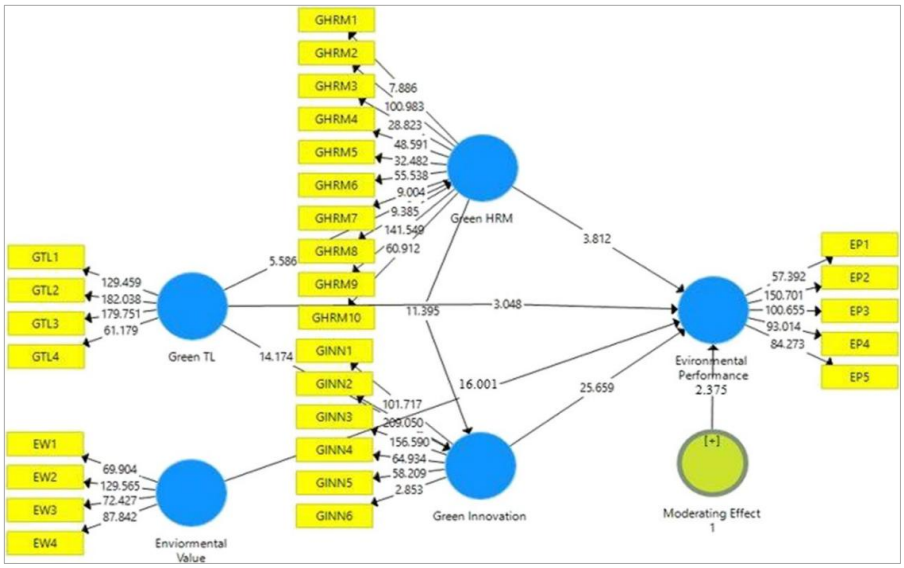


Figure 3

Structural-Model



Structural Assessment

Once measurement model was valid, the structural model was analyzed. To assess data correlations, coefficients, t-values, and errors determined. Results show whether hypotheses were supported. Bootstrapping with Smart-PLS 3 assessed moderating effects (Hameed et al., 2022).

Table 4 indicates a substantial positive correlation (β = 0.144, t = 5.586) among GRTL and GHRM, confirming H1. H2 is confirmed by positive connection between GHRM and EP (β=0.098, t=3.812). A positive correlation (β = 0.341, t = 14.174) was discovered between GTL and GI, supporting H3. The study supports Begum et al. (2023) that organizational leadership promotes creativity. Mansoor et al. (2021) emphasized leadership's role in environmental performance. GTL improves GI, according to Aggarwal & Agarwala (2023).

Additionally, Table 4 indicates substantial positive correlation (β = 0.541, t = 25.659) was seen between GI and EP, supporting H4. GI increase improves EP, according to Cao et al. (2021). GTL and EP showed a strong positive correlation (β = 0.260, t = 3.048), supporting H5. The study supports Özgül & Zehir's (2023) claim that GTL enhances environmental performance. The results also support H8 by showing that EV moderates GRTL-EP.

Table 5 shows that GHRM and GI strongly mediate GTL and EP. Therefore, GHRM and GI are essential to ecological performance. Table 5 also shows indirect correlations, supporting H6 and H7 and verifying mediation associations.

Table 4

Hypothesis Evaluation

Relationship	β	S. E	t	P.	Hypothesis
GTL -> GHRM	0.144	0.025	5.586	0.000***	H1: Accepted
GHRM -> EP	0.098	0.026	3.812	0.000***	H2: Accepted
GTL -> GI	0.341	0.024	14.174	0.000***	H3: Accepted
GI -> EP	0.541	0.021	25.659	0.000***	H4: Accepted
GTL -> EP	0.260	0.089	3.048	0.002***	H5: Accepted
Moderating Effect 1 -> EP	0.019	0.008	2.375	0.023**	H8: Accepted

Table 5

H6 & H7

Indirect Relationship	β	S. E	t	P.	Results
GTL -> GHRM -> EP	0.014	0.004	3.198	0.001***	H6: Accepted
GTL -> GI -> EP	0.184	0.013	13.979	0.000***	H7: Accepted

Discussion

Within the scope of the research project, the green transformational leadership impact on environmental performance is analyzed. According to Özgül & Zehir (2023), the analysis provides further evidence that emphasizes GTL effect on GHRM, also encourages green innovation that improves environmental performance. Guan et al.'s (2020) research, the study also lends credence to the notion that increasing an organization's market position by incorporating environmentally friendly innovations is a first-mover advantage. We found that environmental values have an important influence in GTL and GHRM strategies. Sugiarno & Novita (2022) in their research acknowledge the significance of green innovation in enhancing the environmental performance of SMEs through AMO theory application. Additional support is provided for AMO theory and the RBV by the study, which highlights the importance that leadership and employees have in generating rivalry among businesses. In addition, this research is a contribution to the current body of literature (Negt & Haunschild, 2024) since it investigates the connection between GTL and GHRM. Environmental values are included into green HRM practices as a moderating element. According to the data, GHRM practices are not significantly influenced by environmental values. This supports the

argument that attitudes and values alone do not necessarily lead to improved environmental performance. People have varying attitudes and behaviors, which can act as a barrier to environmentally friendly actions such as recycling. It is possible that environmental values do not have a direct impact on green human resource management methods, as Raza & Khan (2022) believe. This viewpoint is in agreement with their reasoning. However, the research demonstrates a significant connection between GHRM and GI. which has a beneficial effect on environmental-performance as mediator. Furthermore, it reaffirms the role that human resource management practices have as a mediator in the process of promoting GI (Negt & Haunschild, 2024), thereby assuring that green innovation has a beneficial impact on environmental performance.

Theoretical Contributions

Numerous studies have been conducted to explore the various factors that influence environmental performance, a crucial area of research. This body of literature significantly enhances our understanding of the topic. The research begins by examining the role of environmental values in promoting environmental performance within organizations. The second objective of this study is to address a critical research gap by investigating the relationship between green transformational leadership (GTL) and green human resource management (GHRM) practices in small and medium-sized enterprises, with environmental values acting as a moderator.

By analyzing how values impact HRM practices, the study further contributes to our overall comprehension of the subject. One important finding is that incorporating environmental principles into human resource management procedures does not automatically lead to improved environmental performance (Rehman et al., 2021). Additionally, the study confirms the mediating role that green innovation plays in enhancing ecological performance. It also reveals the weak moderating effect that environmental values have on the interaction between GTL and GHRM, highlighting an area for further exploration.

Practical Implications

For leaders and managers interested in developing environmentally friendly innovations and leveraging them to enhance environmental performance (EP) and achieve a competitive advantage, this research presents valuable recommendations. It is essential for organizations to support behaviors characteristic of green leadership to successfully implement Green Human Resource Management (GHRM) practices. Human resources departments must adopt GHRM strategies aimed at recruiting, training, and retaining employees who are committed to the organization's environmentally responsible business practices. Companies should create an environment that empowers and supports individuals with green competencies, enabling them to reach their full potential and maintain a competitive edge in the marketplace.

Limitations and Future Directions

Several limitations are present in this study. First, the data were collected from small and medium-sized businesses in the major cities of Pakistan. As a result, additional research is required to expand the geographical coverage to include cities such as Faisalabad, Bahawalpur, and Multan after the data were collected. A broad environmental values scale was utilized to evaluate the impact that it has on the practices of human resource management. In addition, an employee-level construct might be investigated in the future study using the Best-Worst Scale to validate a hypothesis. Fourth, another potential limitation of examining the financial innovation role on economic performance is measuring financial innovation challenge comprehensively. Future studies can explore the role of financial innovation on economic performance (Ullah et al., 2024). Finally, although environmental values were taken into account as a moderating factor, future research might study other moderators, such as environmentally conscious behavior or environmental knowledge.

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