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FROM GREEN POLICIES TO GREEN PRACTICES: HOW
LEADERSHIP AND HRM SHAPE SUSTAINABILITY
OUTCOMES IN PAKISTANI MANUFACTURING SMEs

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Abstract

This research investigates the impact of transformational leadership on sustainability performance, recognizing the mediating role of Green Human Resource Management (Green HRM) in the manufacturing SMEs context in Pakistan. The study is underpinned by both Resource-Based View (RBV) and Social Exchange Theory (SET) to offer education about environmental leadership and the relationship between green HRM and sustainable outcomes. Primary data were collected in the form of surveys (structured questionnaire) from 370 managerial-level employees and analyzed by structural equation modelling (SEM). The analysis suggests that transformational leadership greatly influences Green HRM and sustainability performance. Important to note, green HRM practices significantly improve sustainability performance, while partially mediating the relationship between transformational leadership and sustainability performance. Overall, the findings highlight the strategic importance of leadership behaviours grounded in green HR approaches to help increase environmental sustainability in SMEs. The study has practical implications in providing managers in SMEs the necessary insight into how they can engage green HR practices in order to improve their environmental sustainability outcomes. The research also contributes to the literature with a unified framework that links leadership, HRM practices, and sustainability, and informs SME managers and policymakers who wish to engage in sustainable transformation in their respective emerging markets.

Keywords: Transformational Leadership, Green Human Resource Management, Sustainability Performance, SMEs, Pakistan

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Introduction

The worldwide call to action for environmental destruction, climate change, and depletion of finite natural resources has prompted organizations to reconsider their strategic focus (Naeem et al., 2025a). Sustainability has reappeared - no longer something that an organization does in its corporate social responsibility (CSR) department, but rather something critical to long-term success (Anser et al., 2025). The manufacturing sector, in particular, has often been chastised for its footprint and is facing scrutiny in order to implement sustainable practices (Anser et al., 2024). The shift towards sustainability in Pakistan is significant given that SMEs employ a substantial portion of the industrial workforce in the country. SMEs are both a challenge and an opportunity for sustainability (Shaikh et al., 2025). They exist in a constantly changing environment with limited resources, regulations, and competitiveness. Therefore, within the SME characteristics, the need to incorporate sustainable practices in the internal fabric of the enterprise is not just promoted; it is now necessary to ensure commitments to environmental sustainability and economic viability are protected.

Leadership and Human Resource management (HRM) are two critical internal enablers of organizational sustainability. While leaders provide the vision, motivation, and ethical compass to encourage a sustainability-focus culture (Naeem et al., 2025b), it is transformational leadership, with its constructs of inspiration, individualized consideration, and intellectual stimulation, that has the broadest applicability to create behavior and attitude change to environmental sustainability (Subramani, 2025). Leadership alone, however, cannot guarantee that all levels of the organization will engage with green practices in their work. Sustainable values are embedded in organizational routines through Green HRM by

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utilizing environmentally conscious HR requirements in recruitment, training, performance appraisal, and reward systems. The synergy of the leadership vision and implementation across HRM provides a coherent path, from policy to practice, enabling organizations to operationalize sustainability.

While sustainability and green practices are gaining momentum, little empirical research has focused on the relationship with transformational leadership, Green HRM, and sustainability performance from the perspective of developing country small and medium enterprises (SMEs). Most research studies have focused on large firms in developed economies where institutional structures, stakeholder pressures, and available funding have allowed the opportunity for a green transformation (Khan et al., 2024). In Pakistan, SMEs operate in a resource-limited capacity and are subject to limited standards, with little to no exposure to internationally recognized sustainability criteria. Also, as outlined in the literature, we still do not know much about Green HRM as a mediated means by which transformational leadership influences sustainability performance. This research study's magnitude has been found in existing literature gaps by examining the extent to which transformational leadership is conducted in sustainability outcomes through Green HRM practices in the context of Pakistan's manufacturing SMEs.

This research is grounded in two established theories: RBV and SET. RBV proposes that internal organizational capabilities, such as leadership styles and HRM systems, can be strategic resources that provide sustainable competitive advantages. Transformational leadership and Green HRM will be conceptualized in this study as intangible yet beneficial resources that enable firms to improve their environmental performance. SET further provides a complementary theoretical lens that posits that when employees

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perceive fair and supportive organizational practices, such as green training and environmentally responsible leadership, they will respond through desirable behavioral reciprocation, including eco-initiatives and sustainability-aligned behaviors. Overall, integrating both RBV and SET helps to understand the ways in which the internal capability through leadership and HRM practices can affect sustainability performance.

The primary aim of this study is to empirically study how transformational leadership affects sustainability performance in SMEs through the mediating effect of Green HRM. This study specifically will (i) look at the direct relationship between transformational leadership and Green HRM practices. (ii) Assess what is the effect of Green HRM on the sustainability performance of SMEs. (iii) Assess the mediating effect of Green HRM in the relationship between transformational leadership and sustainability performance. (iv) theoretically bring together RBV and Social Exchange Theory to be able to explain the processes that link leadership, HRM, and outcomes in sustainability.

This research will use a quantitative research methodology using a structured survey instrument from SMEs in the manufacturing sector in Pakistan. Managerial-level employees who are connected to sustainability, leadership, or HRM will be the units of analysis. Established measures from previous research will be used to measure transformational leadership, Green HRM practices, and sustainability performance. Data will be analyzed using Structural Equation Modeling (SEM) to test both direct and indirect effects as well as measure the robustness of the proposed mediation model. Using SEM allows us to measure the multiple relationships simultaneously and manage the measurement error in the analysis, lending validity and reliability to our findings.

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This study is a contribution to several important areas. Theoretically, the study contributes to the understanding of how transformational leadership and HRM practices interact in creating sustainability through a mediational model based on the RBV and SET. Practically, the findings can help SME managers and policymakers develop HR and leadership development strategies to develop environmental sustainability. The study also contributes to the importance of Green HRM by providing practical implications for SMEs to incorporate sustainability practices and integrate environmental values in their organizational systems. Socially, the study highlights how internal change agents, such as leaders and HR professionals, help create an organizational culture of sustainability as a means to contribute to national and global environmental sustainability goals.

Literature Review

Transformational Leadership and Green Human Resource Management

Transformational leadership is distinguished as possessing four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Avolio, 1994). Leaders who exhibit these characteristics can promote environmental values, empower employees, and enhance their intrinsic motivation to engage in environmental behavior. Transformational leaders are optimistic, future-oriented, and innovative, which are important characteristics when trying to integrate sustainability in an organization's systems (Robertson & Barling, 2013).

Green HR is essentially the integration of environmental objectives into traditional human resource functions such as recruitment, training, performance appraisal and compensation, relationships and the nature of humans are mapped out by the

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process and outcomes of HRM (Renwick et al., 2013). Leaders who highly prioritize environmental sustainability help inspire HR managers to recruit environmentally friendly employees, provide green training or green training modules for employees that will create socialization around the organizational values of environmental sustainability, and develop appraisal systems that reward environmentally friendly behaviour (Pham et al., 2019). According to SET, when leaders demonstrate an interest in environmental and social issues, employees (who may also be HR professionals) are more likely to reciprocate by engaging in greener HRM practices. Transformational leadership, therefore, promotes a culture and structure for Green HRM practices to emerge.

***H1:** Transformational leadership has a positive effect on Green HRM practices.*

Green Human Resource Management and Sustainability Performance

Sustainability performance relates to the ability of an organisation to meet its economic, environmental, and social responsibilities in a balanced manner that leads to sustainable long-term value generation. Green HRM is a strategic way to align individual behaviours and organisational processes with environmental outcomes (Jabbour & de Sousa Jabbour, 2016). Green HRM puts sustainability into operation by changing core HR functions to reflect and enact green principles. For example, in green recruitment, selection of candidates is based on their strong environmental values; through green training and development, employees are equipped with knowledge and skills to act sustainably; and green performance appraisal and reward systems help reinforce and reward environmentally responsible behaviours across an organisation.

Using RBV as a basis, Green HRM can be thought of as a valuable,

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rare, inimitable, and non-substitutable (VRIN) capability that adds to the firm's sustainable competitive advantage (Barney, 1991; Ali et al., 2022; Farooq & Ahmad, 2023; Farooq et al., 2023). The issue is of particular importance in the context of SMEs, which are generally known for their resource constraints but are also flexible when it comes to adopting new practices. SMEs, by embedding green practices into their HR architecture, can effectively improve environmental performance, reduce cost inefficiency/waste, improve corporate reputation, and gain trust from stakeholders (Tang et al., 2018). Ultimately, Green HRM not only aligned the internal workforce to sustainability goals but also propelled the organization to take a more proactive stance, as, even while improving their green initiative, they were contributing ultimately to broader ecological and social good.

***H2:** Green HRM practices have a positive effect on sustainability performance.*

Transformational Leadership and Sustainability Performance

Transformational leadership is integral to uniting individual motivations with organizational needs, including sustainability. Leaders transform follower self-interest into organizational goals by creating a compelling vision, instilling a sense of purpose, and nurturing an organizational culture predicated on trust and empowerment (Graves et al., 2013). Transformational leaders provide a supportive and innovative work environment that encourages environmentally responsible behavior and emphasizes the proactive development of sustainable solutions. The attention that transformational leaders place on intellectual stimulation, individual consideration, and inspirational motivation provides the means to cultivate sustainability through organizational daily practices.

In addition, transformational leaders communicate the strategic

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importance of sustainability, invite employee participation in the decision-making process, and act as role models by leading the charge in achieving "triple bottom line" outcomes: economic success, environmental protection, and socially responsible practices. Although there is empirical evidence suggesting that, informationally, transformational leadership is not enough to contribute directly to the organization's environmental performance, transformational theory remains important (indirectly) because it shapes the organization's values and supports a culture of sustainability that connects with sustainable behaviors in organizations throughout all levels.

Considering transformational leadership has this indirect influence, it is important to explore Green HRM as a mediating mechanism. Green HRM can help institutionalize the sustainability vision communicated by a transformational leader by integrating principles of environmental consciousness within hiring, training, performance assessment, and rewards practices. Explaining the interaction between transformational leadership and Green HRM is beneficial to understand how leadership drives sustainability as it relates to practical, measurable outcomes.

H3: *Transformational leadership has a positive effect on sustainability performance.*

The Mediating Role of Green HRM

Leadership provides the strategic vision, and HRM acts as an operational vehicle that realizes the vision. This is especially relevant to advancing an organization towards its sustainability objectives. For example, when transformational leaders establish strategic priorities that include attention to environmental values, we see HR systems evolve to produce Green HRM policies and practices that embed sustainability throughout the workforce. These practices should include any HR function's policy or practice

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related to green recruiting, green training, green appraisal, and green rewards, which in turn change leaders' values and ideals into explicit behaviours across the organization, which enhance sustainability performance.

This mediating effect of leadership on sustainability is conceptually validated by SET. SET theorizes, when employees perceive a strong level of support from leaders, particularly about environmental concern and ethical guidance, employees will feel obliged to reciprocate through proactive eco-friendly behavior and enhanced organizational commitment. Building on this from an RBV viewpoint, Green HRM is a strategic organizational capacity that offers value, rarity, inimitability, and ultimately, non-substitutability. Moreover, Green HRM connects the sustainability agenda of leadership with sustainable performance capabilities in the medium to long term. Evidence exists to support this conceptual model. Both Yong et al. (2020) and Pham et al. (2019) extend our understanding of transformational leadership by providing empirical evidence that transformational leadership only has an indirect effect on sustainability performance through the mediating effect of Green HRM. This serves to emphasize that HR systems are important in not only operationalizing leaders' environmental vision but also embedding sustainability across the organizational system and values.

H4: Green HRM mediates the relationship between transformational leadership and sustainability performance.

Conceptual Framework

The conceptual framework of this study is given below in Figure I.

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Figure I

Research Methodology

Research Design

This study aims to investigate the influence of transformational leadership, Green HRM, and sustainability performance in manufacturers' SMEs in Pakistan, adopting a quantitative cross-sectional survey design. This approach is well-suited for addressing the hypotheses developed in this study and exploring the direct and indirect effects among the constructs through statistical methods. Data was obtained using a structured questionnaire, and completed questionnaires were collected from managerial-level respondents, allowing for generalisation within the SME sector.

Population and Sample

The suggested population in this study includes managers and senior HR practitioners working in manufacturing SMEs, engaged in a range of industrial clusters in Pakistan. Krejcie and Morgan's (1970) table recommended a sample size of 370 respondents, which is statistically sufficient for Structural Equation Modeling (SEM). The sample was achieved using purposive sampling, specifically targeting managerial practitioners directly engaged in sustainability planning, HRM practice, or strategic leadership.

Instrument Development

A systematic questionnaire was constructed using valid scales adapted from prior studies. All items received a score using a 5-point Likert scale ranging from 1 ("Strongly Disagree") to 5

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("Strongly Agree"). Transformational Leadership: adapted the Multifactor Leadership Questionnaire (MLQ) crafted by Bass and Avolio (1994), consisting of four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Green HRM: adopted by Renwick et al. (2013) and Pham et al. (2019), included green recruitment, training, performance appraisal, and reward system. Sustainability Performance: Items were adapted from Epstein and Roy (2001) and Zailani et al. (2015), using the three dimensions of the Triple Bottom Line (TBL): economic, environmental, and social performance. The questionnaire was pilot-tested with 20 respondents to ensure comprehension and reliability. Revisions were made based on pilot testing feedback.

Data Collection Procedure and Analysis

The data collection lasted three months of both online and physical distribution. The Google Forms link was circulated through professional HR and SME networks, and printed surveys were given to several industrial units in Lahore, Faisalabad, Karachi, and Sialkot. A cover letter was included to ensure potential respondents about anonymity and confidentiality. Out of 500, we received 390 responses, out of which 370 were valid after the data cleaning process and analysis of missing values. The Statistical Package for the Social Sciences (SPSS) version 26 and Smart PLS version 4.0 were used to conduct the analysis.

Results

Demographic Result

Overall, 370 valid responses were obtained from managerial-level employees working in manufacturing SMEs throughout Pakistan. Table 1 shows the demographic characteristics of the respondents. The respondents were mainly male (59.5%), where 56.8% being 30 years old and above. In terms of work experience, 51.4% had less

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than five years of professional experience, and 48.6% had five or more years.

Table 1: Demographic Results

Variable	Category	Frequency	Percentage
Gender	Male	220	59.50%
	Female	150	40.50%
Age	Under 30	160	43.20%
	30 and above	210	56.80%
	Less than 5 years	190	51.40%
Experience	5 years and above	180	48.60%

Descriptive Statistics

Table 2 presents the mean and standard deviation for all study variables. The results indicated that respondents generally perceived high levels of transformational leadership ($M = 3.87$), green HRM practices ($M = 3.74$), and sustainability performance ($M = 3.69$).

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation
Transformational Leadership	3.87	0.65
Green HRM	3.74	0.72
Sustainability Performance	3.69	0.68

Reliability and Validity

Table 3 summarizes the results of the reliability and validity assessments. All constructs indicated good internal consistency, with Cronbach's alpha value exceeding 0.70. The composite reliability (CR) was > 0.80 ; the average variance extracted (AVE) was > 0.50 , confirming convergent validity.

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Table 3: Reliability and Convergent Validity

Construct	Cronbach Alpha	Composite Reliability	AVE
Transformational Leadership	0.88	0.9	0.61
Green HRM	0.85	0.87	0.59
Sustainability Performance	0.83	0.86	0.58

Multicollinearity Assessment (VIF)

Variance Inflation Factor (VIF) values were all below the critical value of 5, indicating no multicollinearity issues among the predictor constructs.

Table 4: Variance Inflation Factor (VIF)

Construct	VIF
Transformational Leadership	2.1
Green HRM	1.8

Discriminant Validity (HTMT Criterion)

Discriminant validity was evaluated using the Heterotrait-Monotrait (HTMT) ratio. All HTMT values were below 0.85, indicating acceptable discriminant validity between the constructs.

Table 5: HTMT Values

	TL	GHRM	SP
TL			
GHRM	0.72		
SP	0.623	0.709	

Hypothesis Testing Results

Hypotheses were evaluated against SEM. All direct and indirect paths were statistically significant at the 0.05 level. The results, reported in Table 6, indicate support for all four hypothesized paths, including the Green HRM mediating pathway.

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Table 6: Hypothesis Testing Results

Hypothesis	Path	β (Beta)	t- value	p- value	Result
H1	Transformational Leadership → Green HRM	0.53	9.21	0	Supported
H2	Green HRM → Sustainability Performance	0.48	8.34	0	Supported
H3	Transformational Leadership → Sustainability Performance	0.22	3.45	0.001	Supported
H4	TL → Green HRM → Sustainability Performance (Mediation)	0.25	4.98	0	Supported

The current study aimed to investigate the dynamic interplay between transformational leadership, Green HRM, and sustainability performance in the context of manufacturing SMEs in Pakistan. The empirical findings provide strong evidence for all hypotheses, contributing valuable theoretical insights and practical implications. First, the study finds a statistically significant positive relationship with transformational leadership and GHRM practices. This supports the idea that leaders who motivate, inspire, and intellectually stimulate support embedding green values in HR functions. Transformational leadership behavior fosters a culture of environmental responsibility that encourages the implementation of green policies and practices previously adopted by the organization. These results align with the previous work (Robertson & Barling, 2013; Mittal & Dhar, 2016), suggesting that

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transformational leaders serve a critical role in establishing green organizational behavior by articulating an environmental vision that employees support to act upon.

Secondly, the study reveals that Green HRM practices significantly improve sustainability performance. This is consistent with the RBV, which indicates that organizational capabilities (particularly when rare, valuable, and costly to imitate) can lead to a sustainable competitive advantage. More specifically, Green HR practice – including environmentally related training, green recruitment, and sustainability-focused performance management – provides a strategic resource to influence environmental and social results. This provides support for the earlier findings of Renwick et al. (2013) and Jabbour & Santos (2008) regarding the significant contribution of Green HRM to advance longer-term sustainability objectives. Secondly, the mediation analysis shows that Green HRM partially mediates the relationship between transformational leadership and sustainability performance. This adds some support for the SET, whereby transformational leaders create a reciprocity process where employees feel valued and in turn, act in an environmentally conscientious manner. When transformational leaders ensure that environmental values-based HRM processes are followed, leaders indirectly enhance sustainability outcomes that demonstrate some synergy with leadership and HRM mechanisms.

In conclusion, this study determined the presence of a direct and positive impact of transformational leadership on sustainability performance, regardless of Green HRM. This suggests a dual, simultaneous effect through both mechanisms of leadership in enabling sustainability. Thus, transformational leaders not only modify HR policies for sustainability, but transformational leaders also affect the culture of the organization, the strategies selected, and stakeholder activities directly for sustainability performance.

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As a whole, these findings help extend theoretical conversations on how leadership and HRM exist and act both independently and concurrently as sustainability drivers. The study also contributes to the literature on integrated approaches to sustainability, which emphasizes the consideration of both behavioral (leadership) and procedural (HRM) perspectives when seeking to encourage sustainable development practices among the smaller firms in developing countries, like Pakistan.

Conclusion

This research investigated the links between transformational leadership, Green HRM, and sustainability performance in Pakistan's manufacturing SMEs. The results support the proposition that transformational leadership has a positive influence on Green HRM practices, and sustainability performance of the organisation, while it was also clear that Green HRM practices have a positive impact on sustainability performance, and those (Green HRM practices) partially mediate the transformational leadership sustainability performance association. Overall, this study reinforces the important role played by the leadership who is seen to have vision and inspire stakeholders around sustainability within their firm; when connected to an environmentally contextualised HRM system. The study further argues that sustainability in SMEs does not just come about as a result of policy or regulation external to their organisation; sustainability is prominent through the behaviours of leadership, giving rise to unique internal capabilities associated with HRM. This study fills a recognised gap in leadership theory and sustainability practices and proposes a model to connect leadership and HR strategy towards promoting environmental sustainability in emerging market contexts. In terms of contribution, this study provides researchers with an integrated model building on

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transformational leadership theory, Green HRM constructs, and sustainability performance under the umbrella of the RBV and SET theoretical lens. It not only adds to the academic discourse within green management and leadership, but it also shines a light upon the practical implications for business practitioners engaging with sustainability within a developing country context.

Implications

Practical Implications

This research provides practical insights for SME leaders, HR practitioners, and policymakers wanting to promote sustainability in manufacturing. First, the current findings reinforce the important influence of transformational leadership, pointing to the need for organizations to focus on developing leadership competencies focused on envisioning and inspiring employees to take action and empowering them to effect social and environmental change. Specially designed leadership development programs, coaching, and training workshops can foster these competencies which can give leaders the ability to facilitate, speak up, and take action regarding environmental and social issues. Second, the evidence suggests embedding green HRM practices in the strategy and operations of SMEs. Practically, this can include a) ensuring sustainability criteria in recruitment and selection, b) designing green training continuously, c) embodying sustainable work systems and practices, and d) aligning performance appraisals with environmental outcomes. The relevant HR policies and practices can provide leverage to institutionalize sustainability values; align employee behavior to contribute to organizational sustainability objectives; and build firm performance related to environmental and social responsibility.

Social Implications

More than just organizational boundaries, this study emphasizes

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the importance of SMEs in supporting sustainable development in emerging economies such as Pakistan. SMEs have an influential part of the economy, with their ability to create employment. SMEs can have a major part in providing change for sustainable development, with SMEs having green leaders and green leadership, and if they apply green HR, they can be an effective driver of change for environmental turnaround. This study supports the notion that establishing a sustainability culture within SMEs can provide strong competitive advantages for business and a productive contribution to society at large. Specifically, the creation of green leaders and HRM can align with the important United Nations Sustainable Development Goals (SDGs) of SDG 12: Sustainable Consumption and Production, and SDG 13: Climate Action. Allowing SMEs to transition to greener practices helps with climate change resilience, reduces the environmental footprint of manufacturing, and contributes to local and global societies.

Theoretical Implications

This research provides many important implications for the theoretical understanding of sustainability performance in SMEs through the lens of Transformational Leadership Theory, GHRM practices, and based on RBV and SET. In the first instance, the results corroborate the RBV of the firm in recognizing that transformational leadership qualities and Green HRM practices are internal capabilities and serve as strategic resources leading to sustainable competitive advantage. Leadership that inspires, motivates, and empowers employees is are intangible assets that enrich the organization's capacity to transform for sustainability. In the same context, Green HRM practices are understood as a firm's capability to mobilize and leverage its human capital toward environmental goals, further reinforcing the RBV proposition.

The partial mediation of Green HRM between transformational

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leadership and sustainability performance also adds empirical evidence to support SET, which suggests that when leaders genuinely care about environmental sustainability and employee wellbeing, employees will reciprocate by demonstrating behaviors that are pro-environmental, and increased engagement and participation in sustainability initiatives. This reciprocal relationship helps build our theoretical knowledge about how a leader's behaviors are transferred and mediated through HR processes to organizational working outcomes. Furthermore, by connecting leadership and HRM in a sustainability context, the study integrates an under-researched and under-explored area between leadership studies and sustainable HRM, to understand how people-oriented strategies can enhance environmental and social performance in SMEs. This integrated model is notably different in the context of emerging economies, where theoretical models are underdeveloped. The research is able to extend existing theoretical thinking in this study by providing an empirical, multi-level perspective to understand the pathways in which Green HR and transformational leadership work together to drive sustainability performance even when resources are limited.

Limitations and Future Directions

While the study is useful, it is necessary to address some limitations. First, the data were based on self-reported questionnaires, so common method bias could still be present (though it was minimized by statistical approaches). Second, the cross-sectional design of the study enables correlational analyses but not causal inferences regarding relationships between the variables. Third, the research was limited to SME manufacturers in Pakistan - this limits the generalizability of the research findings, either to manufacturers in other geographical locations or possibly other sectors of industry. Finally, while other variables (e.g.,

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organizational culture, regulatory pressure) may moderate the strength of the relationships examined in the research, future studies should consider these possibilities if they seek to enhance the contribution to practice from their studies.

Future studies can provide rigor and better insight for practice through longitudinal studies that can explore causation, or changes over time related to leadership, HR practices, and sustainability outcomes. Future studies could also use other sectors (e.g., services, agriculture) to test market condition differences and conduct cross-country comparisons to enhance the contribution to Green HRM practice and research. Future studies could include moderating variables (such as firm size, tenure of leadership, or green organizational culture) to provide better insight into contextual aspects of organizational relations in GHRM. Finally, qualitative approaches (e.g., interviews, case studies) may also provide a richer understanding of how transformational leadership and Green HRM are exercised in actual practice, in conjunction with quantitative studies.

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