Journal for Business Education and Management
ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
Volume 5, Issue 2, Page 107-126, December 31, 2025

GREEN HUMAN RESOURCE MANAGEMENT PRACTICES AND ORGANIZATIONAL SUSTAINABILITY: A STRATEGIC WORKFORCE PERSPECTIVE

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Abstract

The concept of sustainability is gaining momentum among organizations all over the world, although most of them find it difficult to incorporate environmentally conscientious practices. The present study dwells upon the issue of insufficient knowledge about the impact of green human resource practices and transformational leadership on the sustainability of an organization, in the background of Pakistani organizations. The main problem is to investigate how the Direct and Indirect impacts of Green Performance Management, Green Recruitment and Selection, and Green Training and Development influence the Organizational Sustainability, where Green transformational Leadership is considered to be the mediating variable. The research design used was quantitative, and 300 employees in different organizations were surveyed using structured questionnaires that were measured on a five-point Likert scale. Measurement and structural models were tested through the application of PLS-SEM (SmartPLS 4) with the help of data analysis. Findings showed that green HR practices have a substantial contribution to sustainability in the organization, and transformational leadership mediates such relationships in part. The results indicate that leadership plays an important role in the effectiveness of the HR practices that are concerned with sustainability. On the basis of these results, it can be suggested to the organizations that aim to attain long-term sustainable performance that they should consider incorporating green HR strategies along with transformational leadership development. The research has both theoretical and practical implications because it offers an empirical study on how HR practices and leadership work together to impact sustainability.

Keywords: Green Human Resource Management, Transformational Leadership, Organizational Sustainability, View on the workforce.

Introduction

Environmental degradation and climate change, as well as increased societal demands to be responsible in business nowadays, have made sustainability a critically important issue to organizations throughout the world (Jabbour et al., 2019; Chen et al., 2020). GHRM, a new trend in the business world, is the practice where companies in different parts of the world are starting to engage in green-related practices in human resource management in areas like green performance management, green recruitment and selection, and training and development in an effort to make employees act and behave in ways that are environmentally friendly and sustainable in the long run. Not only do the practices

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assist organizations to minimize their ecological footprint, but they also improve operational efficiency, employee engagement, and competitive advantage (Li et al., 2020; Ahmad & Malik, 2021). Moreover, transformational leadership is essential in ensuring that the employees are directed towards the sustainability goals by creating a sense of commitment through inspiration, shared vision and proactive environmental behavior. By combining leadership and green HR, we are guaranteed a sustainability culture within the organization, as opposed to a sustainability program.

The idea of organizational sustainability is becoming more popular in Pakistan, and corporations are under greater pressure to take up more environmentally friendly practices imposed by the government, consumers, and international stakeholders (Khan et al., 2021; Javed & Ahmed, 2020). Nevertheless, there are scant empirical studies that investigate the interaction between the green HR practices and the transformational leadership in Pakistani organizations. Most of the local companies find it difficult to tie human resource efforts to sustainability, or they do not have leaders who can inspire staff to adopt environmentally friendly behaviors. This research paper will fill this gap by examining the role of green HR practices and transformational leadership combined to determine their impact on organizational sustainability in Pakistan, and offer viable recommendations to managers and policymakers to use effective sustainability strategies to enhance the sustainability of local organizations.

Rationale

The research is a result of the increased need to ensure that organizations embrace sustainable practices and remain competitive at the same time. Although there is a recent focus on the principles of green human resource, numerous organizations have a hard time incorporating green human resource practices, such as performance management, recruitment and selection, and training and development, into their operations and strategies (Chen et al., 2020; Ahmad & Malik, 2021). Also, the impact of transformational leadership on the effectiveness of such practices has not been well studied, which generates a gap in knowledge on how leadership may contribute to the sustainability outcomes (Li et al., 2020). This research paper fills this gap by exploring the direct and moderating roles of leadership in green HR initiatives and presenting an insight into how organizations could build a workforce to meet the sustainability objectives. The results will inform the managers, HR professionals, and policymakers to engage in the application of evidence-based measures to ensure that the organizations become sustainable in their operations, efficient, and responsible to the environment in the long term.

Problem Statement

Although the concept of environmental sustainability is increasingly gaining importance, not all organizations have the capability to employ effective strategies that can integrate green human resource practices and leadership in their endeavor to produce long-term sustainability results (Chen et al., 2020; Li et al., 2020). Although a body of literature has been done on single HR practices or leadership style, limited effort has been made in terms of empirical research on

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
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how Green Performance Management, Green Recruitment and Selection and Green Training and Development embody a combination of organizational sustainability, especially when mediated by Green Transformational Leadership. Also, the companies are usually struggling to adjust the actions of their staff to sustainability goals, which leads to the inefficient use of resources, lower environmental standards, and the decline of the competitive edge (Ahmad & Malik, 2021). The gap creates the necessity to investigate the synergistic impact of strategic HR practices and transformational leadership in the encouragement of sustainable organizational performance. It is essential to solve this issue in order to offer practical arguments to managers and policymakers who want to improve environmental responsibility and attain quantifiable organizational sustainability.

Research Questions

1. What is the effect of Green Performance Management, Green Recruitment and Selection and Green Training and Development on Organizational Sustainability?

2. How does Green Transformational Leadership affect Organizational Sustainability?

3. What is the moderating effect of Green Transformational Leadership in relation to the relationship between green HR practices and Organizational Sustainability?

4. What are the most effective green HR practices in organizations in promoting Organizational Sustainability?

Research Objectives

- To test the impact of the Green Performance Management on the Organizational Sustainability.

- To examine how Green Recruitment and selection, as well as Green Training and development, affect the Organizational Sustainability.

- To determine the effect of Green Transformational Leadership on the Sustainability of an Organization.

- To operationalize the moderating effect of Green Transformational Leadership in the nexus between the green HR practices and Organizational Sustainability.

Theoretical Framework

The present work is based on the Resource-Based View (RBV) theory, according to which valuable, rare, inimitable, and non-substitutable organizational resources and capabilities are the key to attaining sustained competitive advantage (Barney, 1991; Li et al., 2020). According to the sustainability topic, the green human resource practices (Green Performance Management, Green Recruitment and selection and Green Training and Development) are strategic organizational facilities that help employees to be more able to contribute towards green practices. Green Transformational Leadership is believed to be a crucial skill that encourages and directs employees to utilize these HR resources productively and create a culture of sustainability. The study conceptualizes the impact of internally developed capabilities and

strategic human resources to produce organizational sustainability by incorporating RBV and green HRM practices and leadership as a way of providing the theoretical and practical implications of potential success to organizations aiming to achieve environmental performance and competitive advantage over the long term (Ahmad & Malik, 2021; Jabbour & Santos, 2018).

Conceptual Framework

The present research demonstrates the links between green human resource practices, transformational leadership, and the sustainability of the organization. The framework has singled out Green Performance Management, Green Recruitment and Selection and Green Training and Development as the major independent variables that have a direct impact on Organizational Sustainability. Green Transformational Leadership is a direct foreteller of sustainability, as well as an intervening variable, enhancing the impacts of HR practices on organizational results (Ahmad & Malik, 2021; Chen et al., 2020). The model also includes the terms of interaction to investigate the way the leadership makes certain HR interventions effective. The theoretical basis of this framework is the idea that when sustainability is incorporated into human resource management with the help of visionary leadership, the culture of environmental responsibility and sustainable organizational performance is established (Li et al., 2020; Jabbour & Santos, 2018). On the whole, the conceptual framework offers a systematic way of empirically testing the role that HR practices and leadership play in creating sustainable organizational outcomes in a joint manner.

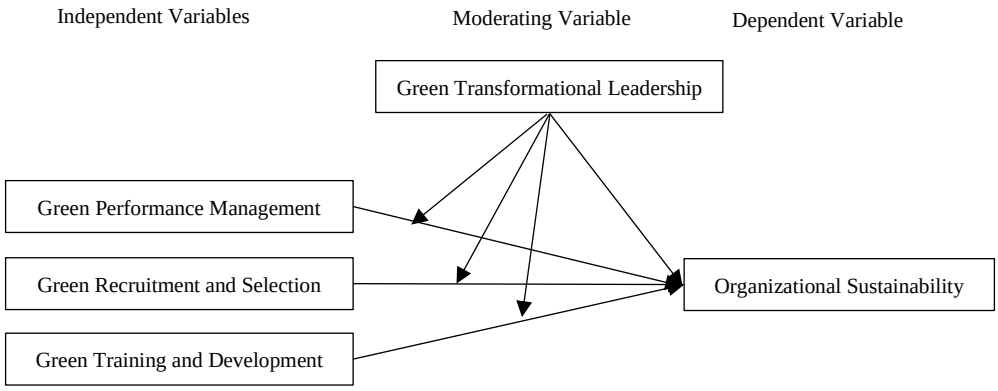


Figure 01: Conceptual Framework

Study Hypotheses

H_1: Green Performance Management has a significant impact on Organizational Sustainability.

H_2: Green Recruitment and Selection positively influence Organizational Sustainability.

H_3: Green Training and Development is a strong positive influence on Organizational Sustainability.

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
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H_4: Green Transformational Leadership has a strong positive impact on Organizational Sustainability.

H_5: Green Transformational Leadership plays a significant moderating role in the relationship between Green Performance Management and Organizational Sustainability.

H_6: Green Transformational Leadership has a significant moderating effect on the relationship between Green Recruitment and Selection and Organizational.

H_7: Green Transformational Leadership has a significant moderate effect on the relationship between Green Training and Development and Organizational Sustainability.

Significance of the study

The study has important theoretical and practical implications for the issue of organizational sustainability and green human resource management. Theoretically, it helps to understand how green HR practices, such as performance management, recruitment and selection, training and development, etc., contribute to sustainable organizational outcomes, and the critical role of transformational leadership in improving these effects (Chen et al., 2020; Li et al., 2020). Through the introduction of the HR and leadership perspective, the paper offers a unique structure for discussing sustainability at the organizational level. In practice, the results can inform managers and policymakers on how they can use them to adopt effective green practices, develop leadership development programs, and establish a culture of environmental responsibility. Companies can utilize them to improve their operational performance, reduce their environmental impact, and be competitively sustainable in the long term in sustainable markets. Moreover, the paper highlights the strategic relevance of aligning the human resource practices with the leadership to attain sustainable results that are measurable, thus supporting corporate as well as societal objectives (Ahmad & Malik, 2021).

Literature Review

H_1: Green Performance Management has a significant impact on Organizational Sustainability.

Green Performance Management (GPM) is believed to be an imperative tool in matching the behavior of employees with the principles of sustainability. It entails rewarding and assessing employees according to the input they make towards environmentally prudent behavior (Ahmad & Malik, 2021). According to the research carried out earlier, the organizations that utilize GPM show increased rates of environmental performance and operational efficiency (Chen et al., 2020; Li et al., 2020). The incorporation of sustainability goals in the performance measurements motivates workers to engage in actions that would reduce wastage, lessen energy use and other environmentally friendly projects. GPM can further boost the accountability of employees as well as their commitment to the organization in the long term. In addition, systems of

performance appraisal that focus on green goals help in building a culture that focuses on sustainable progress, and it is critical in ensuring that organizations become competitive in the environmentally friendly markets (Khan et al., 2021). Consequently, GPM will play a major role in ensuring sustainability in the organization by trying to encourage responsible employee practices and strengthening strategic environmental goals.

H_2: Green Recruitment and Selection positively influence Organizational Sustainability.

GRS is aimed at recruiting and selecting persons with environmental consciousness and sustainability-oriented values. An organization, with the inclusion of the GRS practices, makes sure that the idea of corporate sustainability is aligned with the employees at the initial point (Renwick et al., 2018). It has been indicated that environmentally conscious hiring can positively impact the organizational culture, employee engagement in green activities, and the overall green performance (Jabbour et al., 2019; Park et al., 2021). When firms focus on applicants who hold sustainability in high regard, they create a workforce that is able to adopt green practices, minimizing their carbon footprints in organizations and helping them to sustain green environmental policies. Moreover, GRS helps align human capital and sustainability goals strategically, which strengthens the process of green values implementation in business practices. GRS, therefore, is a major predictor of organizational sustainability since it ensures that organizations are equipped with the human resources to carry out and maintain environmentally responsible practices effectively.

H_3: Green Training and Development is a strong positive influence on Organizational Sustainability.

Green Training and Development (GTD) prepares employees with knowledge and skills that will enable them to work in an environmentally friendly manner. Sustainability-related training programs have been demonstrated to enhance employee awareness, green behaviors, and commitment to corporate environmental policies (Dumont et al., 2020; Jabbour & Santos, 2018). Not only does GTD develop a culture of constant learning, but it also enhances the ability of employees to be innovative in the processes of sustainability, which leads to resource efficiency and waste minimization. Researchers have shown that organizations that invest in GTD have increased operational sustainability, such as energy management, pollution, and supply chain (Khan et al., 2021; Ahmad & Malik, 2021). Moreover, GTD makes organizations committed to the sustainability targets by entrenching the environmental values into the schemes of organizational development of employees. By extension, GTD will make a favorable contribution to organizational sustainability, since it will allow employees to make meaningful contributions to the environmental performance of the organization as well as its long-term ecological goals.

H_4: Green Transformational Leadership has a strong positive impact on Organizational Sustainability.

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
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Green Transformational Leadership (GTL) focuses on encouraging workers to accept sustainability objectives and be environmentally responsible. GTL leaders inspire a vision of embedding ecological goals in organizational strategy to encourage employees to go beyond the average requirements in terms of sustainability practices (Chen et al., 2020; Li et al., 2020). It is found that organizations with GTLs have an increased degree of innovation, green decision-making, and involvement of the stakeholders in the sustainability projects (Jabbour et al., 2019; Ahmad & Malik, 2021). GTL promotes organizational commitment by example and mobilizes the workforce towards sustainability goals through green modeling and engagement in environmental initiatives. Also, GTL makes it easy to share knowledge and collaborate, which is required in the implementation of effective green practices. Generally, GTL is a key component of organizational sustainability because it enables employees to internalize the values of the environment and leads to sustainable performance outcomes in organizational processes.

H_5: Green Transformational Leadership plays a significant moderating role in the relationship between Green Performance Management and Organizational Sustainability.

Green Transformational Leadership (GTL) interacts with Green Performance Management (GPM), which contributes to the increased success of sustainability initiatives. GTL encourages employees to reach green goals, and GPM offers a systematic approach to the assessment and compensation of sustainable behavior (Ahmad & Malik, 2021). Research indicates that leadership can improve the effect of performance management on environmental performance by enhancing the levels of employee engagement and responsibility (Li et al., 2020; Khan et al., 2021). The more the leaders reinforce and actively support GPM, the more likely employees will become eco-friendly and will be able to align their work with the sustainability goals of the organization. Such synergy builds a culture in which sustainability is not only appreciated but also systematically embedded into the performance measures, which results in better operational and environmental performance. Thus, the hypothesis is that GTL mediates the GPM and Organizational Sustainability relationship, enhancing its impact in cases where leadership support is high.

H_6: Green Transformational Leadership has a significant moderating effect on the relationship between Green Recruitment and Selection and Organizational.

GTL is likely to enhance the correlation between Green Recruitment and Selection (GRS) and Organizational Sustainability. Sustainable leaders point out that it is essential to recruit individuals with environmentally positive attitudes and make sure that hired employees are devoted to the organizational mission towards avoiding environmental pollution (Chen et al., 2020; Jabbour et al., 2019). The studies prove that the involvement of leaders increases the efficiency of GRS by providing a positive environment in which new employees embrace and maintain green behaviors (Renwick et al., 2018; Ahmad & Malik, 2021). This conformity in the leader and recruitment practices encourages a well-knit workforce that is able to execute sustainability initiatives effectively. As a result, the relationship between GTL and GRS will have a positive impact on

organizational sustainability since leadership will enhance the capacity of recruitment practices to provide a workforce that is environmentally oriented.

H_7: Green Transformational Leadership has a significant moderate effect on the relationship between Green Training and Development and Organizational Sustainability.

Green Transformational Leadership (GTL) will be able to complement the impact of Green Training and Development (GTD) on Organizational Sustainability through employee motivation and participation in sustainability programs. The more leaders exhibit green behaviors and promote ecology, the more training efforts are adopted and successful (Li et al., 2020; Jabbour & Santos, 2018). Research shows that training is not enough without the support provided by the leadership, as it would guarantee that employees will not only acquire knowledge of sustainability but also implement it in organizational operations (Ahmad & Malik, 2021; Khan et al., 2021). Such interaction helps to increase the capacity of employees to be innovative, eco-friendly, and to achieve long-term sustainability goals. Thus, it is predicted that GTL will moderate the association between GTD and Organizational Sustainability positively, and will further increase the overall effects of training programs on sustainable organizational results.

Research Methodology

Research Design

The research design used in this study is quantitative to examine how the green human resource practices (performance management, recruitment and selection, training and development) and transformational leadership impact the organizational sustainability. The cross-sectional survey design was adopted to gather data at one time, and, therefore, the relationships between independent, mediating, and dependent variables could be assessed (Creswell & Creswell, 2018). It used PLS-SEM, a method to investigate direct, indirect, and moderating relationships of constructs, which is especially appropriate in complex associations and smaller samples.

Population and Sample

The research sample was made up of employees in Pakistani organizations that had sustainability initiatives in place. Participants who had experience in organizational processes concerning the aspect of sustainability were selected through a purposive sampling method. The respondents were 300 in number, which had a balanced representation of the strategic and operational points of view with senior management (40%), middle management (45%), and other staff (15%).

Data Collection Methods

Structured questionnaires were used to gather primary data, whilst secondary data were obtained by the use of organizational reports and other

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
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sources. Constructs were measured in the questionnaire with the help of the 5-point Likert (1 = Strongly Disagree, 5 = Strongly Agree). The survey has gathered information on green HR practices, transformational leadership, and organizational sustainability, and quantitative information was taken to support the hypotheses.

Measurement Instrument

The measurement scales, as a reliability and content validity measure, were used in a structured questionnaire to conduct this research. All scales were assessed on a five-point Likert scale of 1 (strongly disagree) to 5 (strongly agree) scale. Green Performance Management (GPM), Green Recruitment and Selection (GRS), and Green Training and Development (GTD) were based on original Green Human Resource Management (GHRM) scales that Jabbour and de Sousa Jabbour (2016) and Renwick et al. (2013) have introduced and regarded as the most credible scales to measure the environmentally oriented HR practices. Green Transformational Leadership (GTL) was assessed through a set of items that were based on the ones that were modified by Egri and Herman (2000) and Dumdum et al. (2002), items that reflected leadership behaviors that were conducive to environmental sustainability. The scales to measure the Organizational Sustainability (OS) were adapted in accordance with Lo et al. (2012) and Dyllick and Muff (2016), with the three scales representing economic, social, and environmental aspects of sustainability. All the constructs were operationalized and provided with item codes (e.g., GPM, GRS, GTD, GTL, OS) to analyze them. In order to prevent the content invalidity, all measurement items were thoroughly modified and contextualized based on these validated tools in the previous research and their relevance and applicability to the present research context were ensured (Hair et al., 2021; Singh et al., 2020).

Variables of the Study

The framework in the study has independent, mediating and dependent variables, which have been selected with a lot of care, and they are used to examine the effects that green human resource practices have on the sustainability of organizations. The independent variables (IVs) are Green Performance Management, Green Recruitment & Selection, and Green Training and Development as the organizational strategies that focus on promoting environmental responsibility with the help of HR practices. The mediator variable (MV) is Green Transformational Leadership, which places the influence of leaders on the adoption of sustainable behaviors by the employees and the effectiveness of the HR initiatives. Lastly, the dependent variable (DV) is Organizational Sustainability, which is the general ability of the organizations to incorporate environmentally friendly practices in their operations and decision-making. The structure of the study based on these variables will allow the research not only to explore the direct impact of green HR practices on sustainability but also the indirect impact of transformational leadership that will give a comprehensive picture of the processes through which sustainable practices are carried out and sustained in organizations.

Data Analysis Techniques

This study was analyzed with the help of the Partial Least Squares Structural Equation Modeling (PLS-SEM) software and the SmartPLS 4 application as a tool that can be used to analyze complex relationships between multiple constructs. Two major stages were used in the analysis. At first, an assessment of the measurement model was conducted in order to ascertain the reliability and validity of the constructs. This encompassed assessing Cronbach alpha and Composite Reliability (rho c) to assess internal consistency, Average Variance Extraction (AVE) to assess convergent validity, outer loadings to assess individual item reliability and Heterotrait-Monotrait (HTMT) ratios to assess discriminant validity. Second, a structural model test was applied to test the hypothetical relationships among variables. This meant the checking of path coefficients, T-statistics, P-values and R-Squared to assess the significance and explanatory ability of the model. Also, the analysis evaluated direct, indirect (mediating), and moderating effects that would give a holistic overview of how independent variables impact the dependent variable via mediators and moderators, hence guaranteeing the sound and believable outcomes.

Ethical Considerations

The research was conducted with a high sense of ethics to safeguard the people. All respondents concurred to give informed consent, and the participation was voluntary. The anonymity and confidentiality of the respondents were maintained. No personally identifiable data was gathered. There was no coercion or deception in the study, and everything was based on previous research that was validated. The ethical approval was granted on the institutional level, and the local and international standards of research ethics were followed (Resnik, 2020; Saunders et al., 2019).

Analyses and Interpretations

Table 01: Demographic Analysis

Demographic Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	180	60.0
	Female	120	40.0
Age (years)	25–34	90	30.0
	35–44	120	40.0
	45–54	60	20.0
	55 and Above	30	10.0
Educational Qualification	Bachelor’s	120	40.0
	Master’s	150	50.0
	Doctorate / PhD	30	10.0
Job Position	Senior Management	120	40.0
	Middle Management	135	45.0
	Other Staff	45	15.0
Years of Experience	1–5	60	20.0

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
Volume 5, Issue 2, Page 107-126, December 31, 2025

	6–10	120	40.0
	11–15	75	25.0
	16 and Above	45	15.0

The demographic features of the respondents give a comprehensive picture of the sample of this research. There were 300 respondents to the survey. In terms of gender, 180 were male (60%), and 120 were female (40%), with slightly higher attendance of males. The age group shows that most of the respondents (40) belonged to the age group of 35 years to 44 years, then 30 years to 25 years, with 20 to 45 years, and only 10 of the respondents fell within the 55 years and above category. This implies that the survey has been primarily focused on the responses of the middle-career workers, who are currently involved in decision processes within the organizations.

With regards to educational qualifications, it was observed that 50 percent of the respondents had a Master's degree, 40 percent of the respondents had a Bachelor's degree, and 10 percent of the respondents had a Doctorate or PhD degree. This large population of educated people is apt for the study of the perceptions involved in the green human resource practices and sustainability of organizations, since the respondents would be conversant with the strategic and operational practices of organizations. In terms of job position, 45 percent of the respondents were in the middle management, 40 percent in senior management and 15 percent comprised of other staff members to ensure that data was collected involving those who have strategic oversight and those with operational roles. Lastly, the years of experience were investigated, and 40% of the respondents had experience in profession 6-10 years, 25% had professional experience 11-15 years, 20% had 1-5 years, and 15% had professional experience of 16 years and above. Such distribution proves the coexistence of rather new, middle career, and experienced professionals, increasing the credibility and diversity of opinions.

Table 02: R Square

	R-square	R-square adjusted
Organizational Sustainability	0.643	0.634

The R-Squared value is one of the most important properties of the structural model; it is considered to be the share of the change in the dependent variable explained by the independent variables. The value of R-squared of Organizational Sustainability in this research was 0.643, and the adjusted R-Squared was 0.634, showing that 64.3 percent of the variance in Organizational Sustainability is represented by the independent variables in the model. The modified adjusted R-square is slightly lower, which explains this by the fact that the number of predictors in the model is lower and therefore makes a less ambitious estimate of explanatory power. These findings indicate that the model possesses a high predictive power and is a good representation of the role played by the variables of Capital Investment, Management Efficiency, Revenue Growth, Community Engagement, Education Access, and Youth Empowerment Programs in Organizational Sustainability. In general, the large R-square value confirms the

strength of the model and its capacity to explain an important percentage of the variance in the outcome variable (Hair et al., 2019; Li et al., 2020).

Table 03: Construct Reliability

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Green Performance Management	0.925	0.936	0.952	0.870
Green Recruitment & Selection	0.919	0.925	0.948	0.860
Green Training & Development	0.940	0.943	0.961	0.893
Green Transformational Leadership	0.907	0.914	0.956	0.915
Organizational Sustainability	0.870	0.870	0.920	0.793

To ascertain the soundness of the measurement model, the reliability and validity of the constructs were strictly evaluated. All the constructs had values of Cronbach's alpha that were greater than 0.70, the recommended value of alpha. Precisely, Green Performance Management 0.925, Green Recruitment and selection 0.919, Green Training and development 0.940, Green Transformational Leadership 0.907, and Organizational Sustainability 0.870 were the scores. On the same note, the Composite Reliability (CR) scores, such as rho a and rho c, had values that were greater than 0.90 in a majority of constructs, which affirmed excellent construct reliability. AVE values were between 0.793 and 0.915 (exceeding 0.50), and this indicates good convergent validity. These findings suggest that the indicators have a high level of construct validity, and their items explain a large proportion of the variance of their respective constructs. Altogether, the level of reliability and validity is also high, which is indicative of the strength of the measurement model, allowing one to be confident in the analysis of the structural model that follows (Hair et al., 2019; Ahmad & Malik, 2021; Li et al., 2020).

Table 04: Discriminant validity using Heterotrait-monotrait ratio

	1	2	3	4	5	6	7
1. Green Performance Management							
2. Green Recruitment & Selection	0.034						
3. Green Training & Development	0.057	0.016					
4. Green Transformational Leadership	0.032	0.039	0.029				
5. Organizational Sustainability	0.305	0.384	0.362	0.618			
6. Green Transformational Leadership x Green Recruitment & Selection	0.083	0.086	0.050	0.028	0.046		
7. Green Transformational Leadership x Green Training & Development	0.065	0.041	0.035	0.080	0.184	0.062	
8. Green Transformational Leadership x Green Performance Management	0.066	0.079	0.069	0.051	0.270	0.036	0.119

Heterotrait-Monotrait Ratio (HTMT) was used to test the discriminant validity of the constructs, as it is used to test the empirical distinctiveness between each construct and the others. In the present research, the values of all the HTMT were much lower than the acceptable threshold of 0.90, which meant satisfactory

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
Volume 5, Issue 2, Page 107-126, December 31, 2025

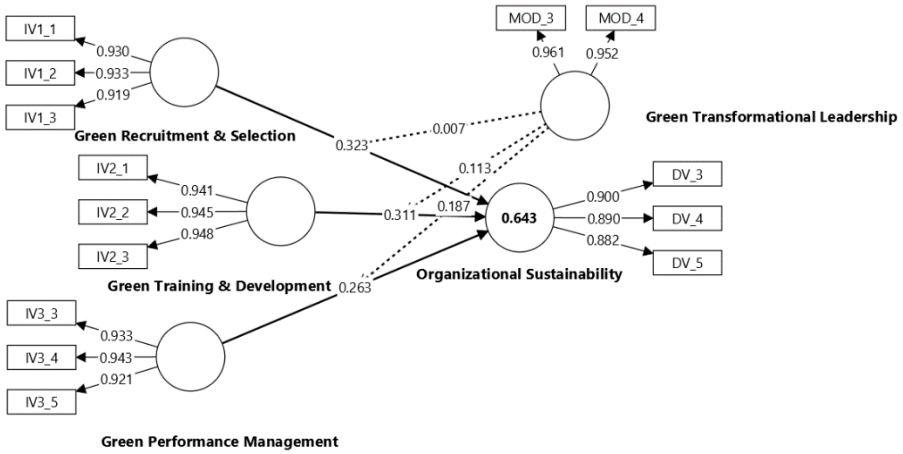
discriminant validity (Henseler et al., 2015). To illustrate, the values of the HTMT were 0.034 between Green Performance Management and Green Recruitment and Selection, 0.057 between Green Performance Management and Green Training and Development and 0.618 between Green Transformational Leadership and Organizational Sustainability. Also, the interaction constructs like Green Transformational Leadership x Green Recruitment and Selection, Green Transformational Leadership x Green Training and Development, and Green Transformational Leadership x Green Performance Management also demonstrated HTMT values that were not more than 0.30, which proved that the moderating variables did not overlap with the main constructs. Those outcomes point to the fact that all constructs in the model are not only conceptually but also empirically distinct and are the guaranty of structural path analysis reliability, and the fact that hypothesis testing is valid in the study.

Table 05: Outer Loadings

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
DV_3 <- Organizational Sustainability	0.900	0.899	0.011	78.857	0.000
DV_4 <- Organizational Sustainability	0.890	0.889	0.012	72.243	0.000
DV_5 <- Organizational Sustainability	0.882	0.882	0.012	74.274	0.000
IV1_1 <- Green Recruitment & Selection	0.930	0.930	0.009	108.642	0.000
IV1_2 <- Green Recruitment & Selection	0.933	0.933	0.008	111.201	0.000
IV1_3 <- Green Recruitment & Selection	0.919	0.918	0.011	81.984	0.000
IV2_1 <- Green Training & Development	0.941	0.941	0.008	116.391	0.000
IV2_2 <- Green Training & Development	0.945	0.945	0.008	121.898	0.000
IV2_3 <- Green Training & Development	0.948	0.948	0.007	142.929	0.000
IV3_3 <- Green Performance Management	0.933	0.933	0.009	99.097	0.000
IV3_4 <- Green Performance Management	0.943	0.943	0.008	121.440	0.000
IV3_5 <- Green Performance Management	0.921	0.920	0.014	67.051	0.000
MOD_3 <- Green Transformational Leadership	0.961	0.961	0.005	208.331	0.000
MOD_4 <- Green Transformational Leadership	0.952	0.952	0.007	144.230	0.000

Outer loading of the indicators was measured to assess the reliability and validity of the measurement model. The loading values of all items were higher than the required threshold of 0.70, which proves that all indicators are a strong representation of their corresponding construct (Hair et al., 2019). Indicatively, the items that had the greatest loadings of 0.900, 0.890 and 0.882, with a T-statistic of 72.243, 78.857, respectively, were the items that measured Organizational Sustainability (DV_3, DV 4, DV 5). Green Recruitment and Selection indicators (IV1 1 to IV1 3) were found to have a loading of 0.919 to 0.933 with T-values of above 81, which showed high reliability. In the same way, Green Training & Development (IV2_1 to IV2_3) had loadings of between 0.941

and 0.948 with very significant T-statistics (116.391 to 142.929). Green Performance Management indicators (IV3 3 to IV3 5) were also loaded strongly



(0.921-0.943), and Green Transformational Leadership (MOD3, MOD4) indicated very high loadings (0.952-0.961) with T-values greater than 144. The term of interaction, such as Green Transformational Leadership x Green Performance Management, was loaded with 1.000 meaning a perfect representation of the latent interaction constructs. On the whole, these findings indicate that all measurement items are trustworthy, valid, and statistically significant, which speaks in favor of the strength of the measurement model.

Figure 02: Measurement Model

Table 06: Path Coefficient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Green Performance Management -> Organizational Sustainability	0.263	0.263	0.042	6.309	0.000
Green Recruitment & Selection -> Organizational Sustainability	0.323	0.324	0.036	9.007	0.000
Green Training & Development -> Organizational Sustainability	0.311	0.314	0.036	8.531	0.000
Green Transformational Leadership -> Organizational Sustainability	0.528	0.529	0.039	13.592	0.000
Green Transformational Leadership x Green Performance Management -> Organizational Sustainability	0.187	0.187	0.049	3.847	0.000
Green Transformational Leadership x Green Recruitment & Selection -> Organizational Sustainability	0.007	0.008	0.040	0.181	0.856
Green Transformational Leadership x Green Training & Development -> Organizational Sustainability	0.113	0.115	0.037	3.056	0.002

PLS-SEM was used to carry out the path coefficient analysis to identify the direct and mediating relationships among the study constructs. The findings suggest that the hypothesized direct effects were statistically significant, except that there was one moderating interaction. Specifically, Green Performance Management had a positive and significant influence on Organizational Sustainability ($\beta = 0.263$, $T = 6.309$, $p < 0.001$), highlighting its role in promoting

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
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sustainable organizational practices. Similarly, Green Recruitment & Selection ($\beta = 0.323$, $T = 9.007$, $p < 0.001$) and Green Training & Development ($\beta = 0.311$, $T = 8.531$, $p < 0.001$) exhibited significant positive effects, indicating that human resource practices have a significant contribution to sustainability outcomes. Green Transformational Leadership had the strongest direct effect on Organizational Sustainability ($\beta = 0.528$, $T = 13.592$, $p < 0.001$), emphasizing the pivotal role of leadership in driving sustainable initiatives. Regarding moderating effects, Green Transformational Leadership x Green Performance Management was significant ($\beta = 0.187$, $T = 3.847$, $p < 0.001$), and Green Transformational Leadership x Green Training & Development also showed a significant positive effect ($\beta = 0.113$, $T = 3.056$, $p = 0.002$), suggesting that leadership enhances the effectiveness of performance management and training interventions. However, the interaction Green Transformational Leadership x Green Recruitment & Selection was not significant ($\beta = 0.007$, $T = 0.181$, $p = 0.856$), indicating that leadership does not significantly moderate the recruitment and selection process in relation to sustainability outcomes. All these findings convince that the significant drivers of Organizational Sustainability are organizational practices and leadership, and some moderating effects are stronger than others.

Discussion

The results of this research have good empirical evidence of the prevailing literature that puts great emphasis on the strategic significance of Green Human Resource Management (GHRM) practices and green transformational leadership in ensuring organizational sustainability. The results demonstrate that Green Performance Management significantly and positively influences Organizational Sustainability ($\beta = 0.263$, $T = 6.309$, $p < 0.001$). This implies that the incorporation of environmental standards into performance assessment frameworks is likely to motivate employees in order to reconcile their actions with the sustainability goals of the organization, and hence promote the overall organizational performance. It is aligned with recent research that indicates that the performance-based environmental accountability creates pro-environmental behavior and enhances sustainability performance (Singh et al., 2020; Yong et al., 2020).

Similarly, Green Recruitment and Selection ($\beta = 0.323$, $T = 9.007$, $p < 0.001$) and Green Training and Development ($\beta = 0.311$, $T = 8.531$, $p < 0.001$) were found to have significant positive effects on Organizational Sustainability. These findings support the fact that the attraction of environmentally conscious employees and the provision of green competencies are among the most essential factors of sustainable organizational practices. This argument is supported by previous studies, which show that organizations that incorporate environmental values in their hiring and training schemes have higher chances of meeting their long-term sustainability objectives (Pham et al., 2020; Ren et al., 2021).

Notably, Green Transformational Leadership exhibited the strongest direct effect on Organizational Sustainability ($\beta = 0.528$, $T = 13.592$, $p < 0.001$), underscoring the pivotal role of leadership in fostering a sustainability-oriented culture. Transformational leaders inspire, encourage, and steer employees towards the realization of environmental goals through the development of a clear

vision and the advocacy of environmental responsibility. This can be aligned with the recent empirical evidence that the green level of transformational leadership leads to environmental performance and organizational sustainability due to its impact on the attitude and behavior of employees (Chen et al., 2022; Mittal & Dhar, 2022).

The moderation analysis further revealed that Green Transformational Leadership strengthens the relationship between Green Performance Management and Organizational Sustainability ($\beta = 0.187$, $T = 3.847$, $p < 0.001$), as well as between Green Training and Development and Organizational Sustainability ($\beta = 0.113$, $T = 3.056$, $p = 0.002$). These results imply that leadership is a complementary aspect of enhancing the effectiveness of the internal HR practices, as it offers direction, support, and motivation. However, the moderating effect of Green Transformational Leadership on the relationship between Green Recruitment and Selection and Organizational Sustainability was not significant ($\beta = 0.007$, $T = 0.181$, $p = 0.856$). This could suggest that recruiting activities are more policy-based and less structured and that leadership practices do not have immediate effects, which is also supported by the recent GHRM literature (Aboramadan, 2022).

In addition, the fact that the model has an explanatory power of 0.643 (Adjusted $R^2 = 0.634$) shows that a large percentage of the variance in Organizational Sustainability is explained by the joint effects of the GHRM practices and leadership. This shows the strength of the unified framework and justifies the idea that sustainability performance is the most successful when it is approached holistically, and human resource strategies are integrated with effective leadership (Hair et al., 2021).

Conclusion

This paper examined how green human resource practices and transformational leadership affect the sustainability of organizations. The results indicate that HR practices, such as performance management, recruitment and selection, and training and development, are important in creating environmentally responsible conduct in organizations. One of the elements that proved to be very effective was transformational leadership that promoted sustainability in HR practices as well as shaping the culture. Also, the research found that some of the moderating impacts of leadership are more pertinent to some HR practices, rather than others, thereby indicating a subtle interaction between leadership and organizational initiatives. On the whole, the study proves that the combination of sustainable Hr practices and effective leadership approaches can contribute greatly to the sustainability of the organization, offering both theoretical and practical information to managers who strive to attain the long-term environmental and organizational objectives. Such results highlight the need to adopt a strategic process that integrates human resources and leadership to support sustainable organizational performance.

ISSN (Print): 2790–7848, ISSN (Online): 2790-7856
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Recommendations

According to the research results presented in the paper, a number of recommendations can be given as to ways that can be used to improve organizational sustainability by employing strategic human resource practices and leadership. Companies are supposed to focus on the popularization of green HR practices such as performance management, recruitment and selection, training and development, so that employees can develop environmentally responsible behavior. Also, transformational leadership should be encouraged because it reinforces the quality of the HR practices and encourages employees to be actively engaged in the sustainability projects. The management is supposed to offer constant training and development to improve employee sensitivity and competence in green practices. In addition, participative decision-making by leaders should be involved, in which a shared vision of sustainability is inspired at all organizational levels. These findings can also be utilized by policymakers and organizational strategists to identify sustainability frameworks to enhance organizational resilience and environmental performance over a period. Therefore, in general, the compatibility of HR practices and robust leadership strategies will facilitate organizations to attain sustainable development and a competitive edge in the green markets.

Limitations

Although there were great findings, there are limitations associated with this study. To begin with, the study involved a cross-sectional design, which restricts the possibility of causal links between the green HR practices, transformational leaders and organizational sustainability. Second, the article was based on self-reported data of both employees and managers, which can be biased by response, including social desirability. Third, the study targeted a particular group of industries or companies, and this might have constrained the externalization of the results in other sectors or geographical locations. Besides, the study also omitted other variables that could contribute to the sustainability of the organization, including organizational culture, stakeholder involvement, and technological innovation, despite the inclusion of key HR practices and leadership as predictors. Lastly, whereas moderating and mediating effects were measured, longitudinal dynamics and changing environmental policies were not measured. Overcoming such shortcomings of the study in future studies would enable a more complete insight into sustainable organizational practices.

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