

Employee Engagement as A Catalyst for Organizational Sustainability: An Integrated Approach

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ABSTRACT: In the pursuit of long-term competitiveness and responsible growth, organizations increasingly recognize employee engagement as a critical enabler of sustainability. The relationship between employee engagement and organizational sustainability is examined here, emphasizing the mediation of leadership support and the moderating influence of practices of green human resource management (GHRM). From Social Exchange Theory, Transformational Leadership Theory, and the Resource-Based View (RBV), the research proposes an integrated model linking individual, managerial, and systemic factors that drive sustainable outcomes. A sample of 412 employees from technology and service-based organizations in India were surveyed. The hypothesized model was tested using Partial Least Squares Structural Equation Modelling (PLS-SEM) in order to examine measurement model and structural model. Results revealed there is significant positive impact of social, environmental and economic dimensions of organizational sustainability. Leadership support partially mediates this relationship, highlighting the importance of supportive leadership in translating engagement into sustainability performance. Furthermore, GHRM practices positively moderate the engagement-sustainability link, strengthening the behavioral impact of engaged employees in environmentally responsible contexts. The findings underscore that sustainability is not solely a procedural or policy outcome but a human-driven process rooted in engagement, leadership, and HR systems. Contribution to theory building this study was by integrating psychological and strategic dimensions of sustainability and offers managerial insights for fostering sustainable cultures through engaged employees and green HR practices.

KEYWORDS: Employee engagement, leadership support, organizational sustainability, green HRM, PLS-SEM, sustainable leadership

1. INTRODUCTION

In the 21st-century business environment, organizations apart from pursuing financial success they also concentrated on environmental stewardship and social responsibility. The commitment to the United Nations Sustainable Development Goals (SDGs) has made organizational sustainability a strategic imperative rather than a voluntary pursuit. Sustainability includes economic viability, social equity, and environmental protection (Elkington, 1997). While many organizations invest heavily in technology, policies, and reporting systems to achieve sustainability, an often-underestimated determinant of sustainable performance lies in their people, particularly in how engaged employees contribute to sustainable organizational outcomes.

Employee engagement has evolved as a core concept in human resource management representing dedication, absorption and enthusiasm of employees (Schaufeli et al., 2002). When employees properly engaged they work with higher energy (vigor), a strong sense of significance and involvement (dedication), and deep concentration (absorption) in their tasks. Such employees demonstrate organizational citizenship behaviors, and actively support change initiatives, all of which are critical for sustaining organizational transformation toward long-term sustainability (Kahn, 1990; Saks, 2006). In this regard, engagement serves a strategic driver of sustainable performance.

Despite the recognized importance of employee engagement, the mechanism through which it influences organizational sustainability remains underexplored. Previous studies have primarily examined sustainability through external factors like corporate social responsibility, environmental management, and compliance-based reporting (Aguinis & Glavas, 2012). However, sustainability initiatives are unlikely to succeed unless employees with psychologically commitment and behavioural alignment with sustainability. Engagement acts as a bridge that translates individual motivation and involvement into collective sustainable

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practices. Organizations that foster engagement often experience enhanced employee retention, innovation, and productivity — elements that contribute directly to economic and social sustainability, while also encouraging environmentally responsible behaviors (Robertson & Barling, 2013).

One critical factor that strengthens this link is leadership support, which acts as a mediating mechanism between employee engagement and organizational sustainability. Supportive leadership enhances employees' sense of purpose, trust and organization's long-term sustainability. Leaders who demonstrate ethical conduct, communicate sustainable values, and empower employees create a psychologically safe environment that fosters engagement and encourages green initiatives. Research indicates that leadership behaviors such as transformational, servant, or responsible leadership positively influence both engagement and sustainability performance (Avery & Bergsteiner, 2011; Luu, 2020). Hence, leadership support becomes an essential conduit through which engagement transforms into sustainable outcomes.

Green HRM integrates principles of environment into Human Resource Management functions (Renwick et al., 2013). The organisations adopting such practices, they signal a strong commitment to sustainability, which amplifies the impact of employee engagement on sustainability outcomes. For instance, green training enhances employees' environmental awareness, while green performance appraisal systems reinforce sustainable behaviors. Thus, Green HRM acts as a contextual enabler that strengthens the engagement–sustainability relationship by institutionalizing environmentally responsible practices.

In the Indian context, where sustainable industrial transformation is integral to national initiatives like “Viksit Bharat 2047” and Mission LiFE (Lifestyle for Environment), understanding this relationship holds practical relevance. Indian organizations, particularly in manufacturing and service sectors, are increasingly recognizing that employee-centric sustainability strategies yield long-term competitive advantage and social legitimacy. Yet, empirical studies linking employee engagement, leadership support, and Green HRM practices with organizational sustainability remain limited, in developing nations.

This research aims at exploring employee engagement as an important element for organizational sustainability, emphasizing the role of leadership support as mediating and moderating the influence of Green HRM practices. By integrating these constructs within a single framework, the study contributes to both theory and practice. Theoretically, it extends engagement literature into the sustainability domain, highlighting human energy as a driver of sustainable change. Practically, it provides insights for HR and sustainability managers to design engagement-driven policies that align human capital with environmental and social goals.

The proposed framework conceptualizes employee engagement (vigor, dedication, absorption) as the independent variable influencing organizational sustainability (economic, social, and environmental dimensions). Leadership support mediates this relationship by translating engagement into sustainable action, while Green HRM practices moderate the strength of this relationship by institutionalizing environmentally responsible systems. This integrated approach provides a holistic understanding of how organizations can mobilize their workforce toward achieving sustainable excellence.

2. REVIEW OF LITERATURE

2.1. Employee Engagement: Concept and Dimensions

It is a predominant construct representing the extent to which the Physical, Mental and Emotional expression by the employees towards their work (Kahn, 1990). It reflects a positive psychological state with absorption, dedication and vigor (Schaufeli et al., 2002). Vigor signifies mental resilience, Strong energy, and persistence in one's work, reflecting an individual's willingness to invest effort and stay committed despite challenges. Dedication captures a deep sense of significance, enthusiasm, and inspiration, where employees feel proud and passionate about their job. Absorption refers to engrossing into job with focus, often losing track of time due to strong involvement and enjoyment. Together, these dimensions drives productivity and organizational success. Higher job satisfaction, more productivity and maximum commitments are the outcomes from engaged employees. (Saks, 2006; Bakker & Demerouti, 2008). They are proactive in problem-solving, creative in developing new ideas, and resilient in managing change. In contrast to traditional job involvement, engagement captures a deeper psychological connection that motivates employees to contribute beyond formal job expectations (Macey & Schneider, 2008). This energy and enthusiasm can act as a powerful foundation for driving sustainability-oriented behaviors within organizations.

Research also suggests that engagement fosters organizational citizenship behaviors (Rich et al., 2010), enhances innovation (Harter et al., 2020), and nurtures ethical decision-making — all essential for achieving long-term sustainability. Hence, employee engagement act as a human resource outcome and a strategic resource in achieving sustainable competitive advantage (Bakker, 2011).

2.2. Leadership Support as a Mediator

Leadership shapes and sustains employee engagement, particularly through emotional, cognitive, and behavioral support (Avery & Bergsteiner, 2011). Leadership supports in guidance, recognition, empowerment, and resources that enable employees to perform effectively (Luthans & Avolio, 2003). Supportive leaders communicate vision, model ethical behavior, and encourage innovation — thereby enhancing employees' sense of purpose and belonging (Deci & Ryan, 2000).

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Several studies have identified leadership as a mediator between engagement and various organizational outcomes. For instance, transformational and servant leadership styles through competence, autonomy and relatedness achieves engagement. (Breevaart et al., 2014; van Dierendonck, 2011). Engaged employees under supportive leadership are more likely to internalize organizational values, participate in decision-making, and exhibit sustainable behaviors (Kim et al., 2017). Leadership also mediates the translation of engagement into sustainability performance by aligning individual motivations with organizational goals (Gjerde & Alvesson, 2020). When leaders emphasize sustainability values—such as ethical conduct, social responsibility, and environmental awareness—they foster a culture that channels engagement energy toward sustainable outcomes. Thus, leadership support serves as a conduit through which employee engagement transforms into sustainable practices, ensuring that individual enthusiasm contributes meaningfully to the organization's triple bottom line performance.

2.3. Organizational Sustainability: The Dependent Variable

Organizational sustainability is represented by the profitability, social equity and environmental protection of an organisation (Elkington, 1997). It is often conceptualized through three interdependent dimensions. Sustainability in business encompasses three interconnected dimensions—economic, social, and environmental. Economic sustainability ensures long-term profitability and resource efficiency by promoting sound financial management and strategic growth. Social sustainability emphasizes employee well-being, ethical practices and community development which foster trust and inclusivity within and beyond the organization. Environmental sustainability focuses on minimizing ecological footprints through responsible operations, efficient resource utilization, and green innovation. Together, these dimensions create a balanced framework that supports organizational resilience, stakeholder satisfaction, and long-term value creation.

Sustainability research has evolved from viewing it as a compliance requirement to a strategic orientation that drives innovation, reputation, and competitiveness (Aguinis & Glavas, 2012; Bansal & Song, 2017). Engaged employees play a crucial role in this transition — they actively support sustainability programs, adopt green behaviors, and champion social responsibility initiatives (Robertson & Barling, 2013). Empirical evidence indicates that higher employee engagement correlates with improved sustainability reporting, reduced environmental incidents, and better social performance (Tariq et al., 2016).

Moreover, sustainable organizations tend to experience a virtuous cycle — engaged employees promote sustainability, and visible sustainability efforts, in turn, reinforce employee pride and engagement (Roscoe et al., 2019). Therefore, sustainability is both an outcome and a reinforcement of engagement, mediated by leadership and supported by organizational systems such as Green HRM.

2.4. Green HRM Practices as a Moderator

It deals with activities like eco- training, green recruitment and appraisal based on work towards sustainable environmental initiatives (Renwick et al., 2013; Tang et al., 2018).

It acts as a contextual moderator in the engagement–sustainability relationship by strengthening the organizational environment that supports sustainable behavior. For instance:

Attracting employees who possess pro-environmental values and are motivated to contribute to sustainable goals. Once onboard, Training and Development activities with Green practices green training build environmental skills, enhance understanding of sustainable practices, and integrate eco-friendly behavior into their daily work. Furthermore, green performance management and reward systems acknowledge and incentivize employees' contributions to environmental objectives, thereby reinforcing their engagement, motivation, and long-term commitment to sustainability. Together, these practices create a culture of environmental responsibility and align human resource policies with the vision of the organization towards sustainability.

Employees channel their engagement into sustainable actions when they perceive there is value for sustainable practices in the organisation (Jabbour & Santos, 2008; Paillé et al., 2014). Empirical studies show the significant relationship among energy conservation, waste reduction, and eco-innovation with employee engagement (Luu, 2020; Pham et al., 2020). Thus, Green HRM institutionalizes sustainability by embedding it into HR systems, creating an ecosystem where engagement and sustainability mutually reinforce each other.

2.5. Integrative Perspective and Research Gap

Although each construct, employee engagement, leadership support, and Green HRM—has been individually studied, integrated research connecting them within the sustainability framework remains limited. Existing literature often focuses on engagement as an antecedent of performance or job satisfaction but rarely examines how it catalyzes sustainability performance through leadership mediation and HRM moderation. Studies in Western contexts reveals socio-cultural factors influence engagement and sustainability behaviors. (Cooke et al., 2019).

Therefore, this study proposes an integrated model in which employee engagement acts as the driver, mediating role by leadership support, and moderating role by Green HRM influencing organizational sustainability. This holistic perspective contributes to theory by integrating micro-level (individual engagement), meso-level (leadership), and macro-level (organizational

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sustainability) variables, providing a multilevel understanding of how people and systems interact to create sustainable organizations.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1. Conceptual Foundation

Organizations worldwide are increasingly recognizing that sustainability is not solely a strategic or technological pursuit but also a human-centered process. Employee engagement, leadership support, and Green HRM practices collectively form the human infrastructure that enables sustainable performance. Drawing upon theories such as the Job Demands–Resources (JD-R) Model (Bakker & Demerouti, 2008), Social Exchange Theory (Blau, 1964), and Resource-Based View (Barney, 1991), the present study conceptualizes employee engagement as an intangible organizational resource that, when supported by leadership and HR systems, can generate sustainable economic, social, and environmental outcomes.

According to the JD-R model, engaged employees exhibit higher energy, dedication, and focus when organizational resources, such as leadership support and green HRM practices—are accessible. Similarly, Social Exchange Theory promotes that employee's perception towards their workplace investing in the well-being of employees and supports meaningful goals (like sustainability), they reciprocate through higher commitment and discretionary effort. Within this framework, leadership support functions as a mediating mechanism that channels engagement toward sustainability, while Green HRM practices serve as a moderating mechanism that amplifies the engagement–sustainability link by embedding environmental values into the organizational culture.

The conceptual framework (Figure 1) positions Employee Engagement (vigor, dedication, absorption) as the independent variable influencing Organizational Sustainability (economic, social, environmental dimensions). Leadership Support mediates this relationship, and Green HRM Practices moderate the direct path between engagement and sustainability.

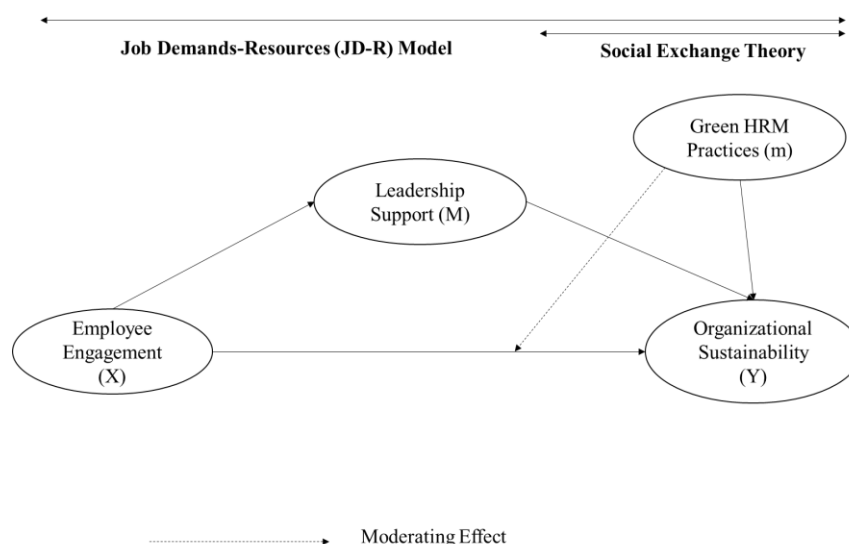


Figure 1. Structural Equation Modelling

3.2. Employee Engagement and Organizational Sustainability

Cognitive and emotional attachment of the employees are represents employee engagement (Kahn, 1990; Schaufeli et al., 2002). The positively engaged employees show initiative, creativity, and responsibility, leading to enhanced productivity, innovation, and ethical behavior—all of which contribute to sustainable development.

Empirical evidence shows that engagement drives sustainability performance by fostering eco-initiatives, reducing waste, improving customer satisfaction, and strengthening community relations (Robertson & Barling, 2013; Roscoe et al., 2019). Higher Vigor and dedication of employees leads to higher engagement in green behaviors, volunteer for CSR programs, and contribute to energy conservation (Tariq et al., 2016).

From the Resource-Based View, engagement constitutes a valuable and rare organizational resource which contributes to sustainable competitive advantage (Bakker, 2011). Organizations that cultivate engagement improves operational efficiency (economic sustainability) and create a socially responsible and environmentally conscious workforce (social and environmental sustainability).

H1: Employee engagement positively influences organizational sustainability.

3.3. Mediating Role of Leadership Support

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Leadership support is essential in transforming individual engagement into collective sustainability outcomes. Supportive leaders articulate a clear sustainability vision, empower employees to act, and provide the necessary resources for implementation (Avery & Bergsteiner, 2011; Luu, 2020). According to Social Exchange Theory, when leaders demonstrate trust, recognition, and care, employees reciprocate with loyalty and increased effort toward shared goals (Saks, 2006).

Leadership behaviors such as transformational, servant, or ethical leadership have been shown to enhance both engagement and sustainability performance (van Dierendonck, 2011; Gjerde & Alvesson, 2020). Engaged employees under supportive leadership are more likely to translate enthusiasm into meaningful actions—participating in green teams, community engagement projects, and sustainability-driven innovations (Kim et al., 2017). Thus, leadership acts as a psychological and structural bridge between engagement and sustainability. When employees feel supported and inspired, they channel their energy toward achieving the organisation's triple bottom line goals.

H2: Leadership support plays a mediating role towards the relationship between employee engagement and organisational sustainability.

3.4. Moderating Role of Green HRM Practices

While engagement and leadership create the motivational and relational conditions for sustainability, Green HRM practices provide the systemic and procedural support to sustain such behaviors. It links environmental consciousness and functions of HRM (Renwick et al., 2013; Tang et al., 2018).

When employees perceive that their organization practices green HRM such as green training programs, sustainability-linked performance evaluations, and green incentives they experience fit between employees' values and the organisation's aims (Paillé et al., 2014). This alignment enhances the connection between engagement and sustainability outcomes. Moreover, Green HRM ensures that sustainability is not episodic but embedded in the organizational culture and daily routines.

Studies indicate that Green HRM practices enhance employee engagement by promoting meaningful work and purpose, thereby amplifying employees' contribution to sustainability (Pham et al., 2020; Jabbour & Santos, 2008). Consequently, organizations with robust Green HRM systems can better translate engagement into tangible sustainable results.

H3: Green HRM practices positively influence and strengthen the link between employee engagement and sustainability of organizations

3.5 Combined Mediated–Moderated Framework

Integrating these relationships, the proposed model suggests that employee engagement acts as the primary psychological resource driving sustainability; leadership support mediates this relationship by channeling engagement into organizational goals; and Green HRM practices strengthen this pathway by institutionalizing sustainability-oriented HR processes.

This framework contributes to theory by extending engagement research into the sustainability domain and by demonstrating how individual, leadership, and system-level factors interact to achieve holistic sustainability. It also provides a multilevel understanding of the human dynamics underpinning sustainable organizational development, particularly relevant in India, where people-driven sustainability transformations are gaining importance under initiatives like Mission LiFE and Viksit Bharat 2047.

4. RESEARCH METHODOLOGY

4.1. Research Design

Quantitative research design adopted here is to empirically assess how employee engagement influences organizational sustainability, mediated by leadership support and moderated by Green HRM practices. The study seeks to validate the relationships using Structural Equation Modelling (SEM) through Partial Least Squares (PLS-SEM), a robust multivariate technique suitable for theory development and prediction-oriented research (Hair et al., 2019). PLS-SEM is particularly effective when dealing with complex models involving mediation and moderation, as in the current framework.

This is a cross-sectional study in which single-time data were collected from employees working in selected manufacturing and service organisations in Tamil Nadu, India. These sectors are chosen because they are under increasing pressure in managing growth through sustainable practices. (Raut et al., 2021).

4.2. Sampling and Data Collection

Stratified random sampling technique helps to ensure representation from both manufacturing and service sectors. The target population includes full-time employees at the supervisory and managerial levels who have direct exposure to organisational policies and sustainability practices.

A sample size of 350–400 respondents was targeted, aligning with the practices followed by Hair et al. (2019) for PLS-SEM analysis, where 10 responses per indicator variable is required for stable estimation. Data was collected using a structured online questionnaire distributed via organisational networks and professional platforms.

A pilot study was conducted, and 30 respondents were approached to refine the questionnaire for clarity, reliability, and content validity.

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4.3. Measures and Instrumentation

All constructs in the study were measured with validated multi-item scales rated with five-point scale ranging from Strongly Agree to Strongly Disagree, taken based on literature.

- **Employee Engagement (Independent Variable):** Utrecht's Work Engagement Scale (UWES-9) developed by Schaufeli et al. (2006) was used to collect data on dedication, vigor and absorption dimensions.
- **Leadership Support (Mediator):** A multi item scale of Avolio and Bass (2004) and Breevaart et al. (2014), focusing on leaders' supportive behavior, empowerment, and communication. Example item: *"My supervisor encourages me to contribute ideas for improvement."*
- **Organizational Sustainability (Dependent Variable):** Measured through indicators capturing social, environmental and economic performance (Elkington, 1998; Epstein & Buhovac, 2014). Example item: *"Our organization actively works to reduce its environmental footprint."*
- **Green HRM Practices (Moderator):** Items adapted from Jabbour & Santos (2008) and Renwick et al. (2013) were used to assess policies on environmentally oriented recruitment, training and reward system. Example item: *"Our HR policies encourage eco-friendly behaviors among employees."*

5. DATA ANALYSIS TECHNIQUES

Data collected were analysed using two two-step approach of Hair et al. (2019) with SmartPLS 4.0.

5.1. Measurement Model Evaluation

Measurement models were tested to ensure the constructs for reliable and valid representations of the underlying theoretical concepts. Measurement model evaluation in PLS-SEM primarily involves examining indicator and internal consistency reliability, discriminant and convergent validity (Hair et al., 2019; Henseler et al., 2015). Reliability assesses the internal consistency of the measurement items in representing their respective constructs. Cronbach's Alpha (α) was used to verify the reliability and Composite Reliability was also assessed. This traditional measure estimates internal consistency by assuming that all indicators contribute equally to the construct (Nunnally & Bernstein, 1994). Reliability is acceptable with 0.07 and above based on A Cronbach's alpha, whereas values above 0.80 demonstrate good internal consistency (George & Mallery, 2003). Outer loadings of indicators are considered for composite reliability, in PLS-SEM (Hair et al., 2021). CR values higher than 0.70 alone will be are considered as valid (Hair et al., 2019).

Table 1 Factor Loading, Reliability and Validity

Construct	Item Code	Factor Loading	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Employee Engagement	EE1	0.81	0.89	0.92	0.65
	EE2	0.84			
	EE3	0.79			
	EE4	0.83			
	EE5	0.78			
Leadership Support	LS1	0.82	0.87	0.91	0.67
	LS2	0.80			
	LS3	0.85			
	LS4	0.78			
Organizational Sustainability	OS1	0.84	0.88	0.92	0.68
	OS2	0.79			
	OS3	0.85			
	OS4	0.80			
Green HRM Practices	GHRM1	0.81	0.90	0.93	0.70
	GHRM2	0.87			
	GHRM3	0.82			
	GHRM4	0.85			

In this study, Table 1 reveals that all constructs — Employee Engagement (vigour, dedication, absorption), Leadership Support, Organisational Sustainability, and Green HRM Practices have to Cronbach's alpha more than 0.8 and CR values above 0.90, confirming higher internal consistency and composite reliability.

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Convergent validity refers to multiple indicators measuring the same construct are correlated and represent the same underlying concept (Fornell & Larcker, 1981). Average Variance Extracted (AVE) and indicator loadings were examined and the outer loadings for all indicators are between 0.60 and 0.70 and hence shall be retained (Hair et al., 2021). AVE value is higher than 0.50 indicates convergent validity is there, which represents indicators appropriately reflect their respective latent variables. (Fornell & Larcker, 1981).

Discriminant validity ensures that the indicators measure their intended construct rather than others (Henseler et al., 2015). When AVE values exceeds the correlation values among different constructs represents high construct validity (Fornell & Larcker, 1981). It is also suggested that the loadings of each indicator have to be higher relating to other indicators (Hair et al., 2019).

Table 2 Discriminant Validity using F&L

Construct	EE	LS	OS	GHRM
Employee Engagement (EE)	0.81			
Leadership Support (LS)	0.56	0.82		
Organizational Sustainability (OS)	0.52	0.60	0.83	
Green HRM Practices (GHRM)	0.47	0.50	0.58	0.84

Table 2 results ensures item-level discriminant validity. Henseler, Ringle, and Sarstedt (2015) suggests that less than 0.85 to 0.90 HTMT value reflects that the constructs are distinct based on empirical evidences.

Table 3 Discriminant Validity using HTMT

Constructs	EE	LS	OS	GHRM
Employee Engagement (EE)	—			
Leadership Support (LS)	0.64	—		
Organizational Sustainability (OS)	0.59	0.67	—	
Green HRM Practices (GHRM)	0.52	0.58	0.65	—

In this study, table 3 indicates discriminant validity because all constructs Employee Engagement, Leadership Support, Organizational Sustainability, and Green HRM Practices conceptually represent different theoretical dimensions and empirically exhibit HTMT ratios below 0.85.

5.2. Structural Model Evaluation

Structural model proposed in this study was evaluated using SmartPLS 4.0, based on the details of Hair et al. (2019) to examine the connectivity among different constructs. This evaluation encompasses testing of direct, mediating, and moderating effects. Before testing the hypothesized relationships Variance Inflation Factor (VIF) was assessed and found lesser than 5.0 which represents there is no collinearity (Hair et al., 2021).

Table 4 R² and Q² Values

Endogenous Variable	R ²	Interpretation	Q ²	Interpretation
Leadership Support	0.46	Moderate	0.28	Medium Predictive Relevance
Organizational Sustainability	0.57	Substantial	0.35	Strong Predictive Relevance

Employee engagement explains in table 4 that 46% of the variance in leadership support, while employee engagement and leadership support together explain 57% of the variance in organizational sustainability, indicating a strong explanatory power (Cohen, 1988; Hair et al., 2019).

Table 5 Path Coefficient

Hypothesis	Path	B (Beta Coefficient)	t-value	p-value	Result
H1	Employee Engagement → Organizational Sustainability	0.38	6.42	0.000	Supported
H2	Employee Engagement → Leadership Support	0.68	15.21	0.000	Supported
H3	Leadership Support → Organizational Sustainability	0.41	7.56	0.000	Supported

Table 5 shows the role of Employee engagement in building a supportive leadership and promoting organizational sustainability. Engaged employees show commitment, initiative, and enthusiasm, which encourage leaders to offer greater support, guidance, and resources. This mutual relationship enhances organizational performance and long-term sustainability. Leadership support further strengthens this link by translating employees' positive attitudes and efforts into sustainable actions and outcomes. Thus,

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leadership support mediates the effect of employee engagement on sustainability which becomes stronger when leaders actively support and empower their teams (Breevaart et al., 2014).

5.3. Mediating Effect Testing

Preacher and Hayes's (2008) Bootstrapping method was used to examine role of Leadership Support as mediator.

Table 6 Mediation Analysis

Path	Indirect Effect (EE → LS → OS)	t-value	p-value	Mediation Type	Result
EE → LS → OS	0.28	5.91	0.000	Partial Mediation	Supported

Table 6 indicates that the influence of employee engagement on organizational sustainability is partially mediated by leadership support has partial mediation. The indirect effect (0.28) with a high t-value (5.91) and a significant p-value (0.000) assures that the mediation effect is significant. This means that employee engagement positively influences organizational sustainability both directly and indirectly through leadership support. In other words, when leaders actively support and empower employees, the positive impact of engagement on sustainability becomes even stronger.

5.4. Moderating Effect of Green HRM Practices

To test moderation, an interaction term between Employee Engagement and Green HRM Practices was created (EE × GHRM). Bootstrapping confirmed the significance of the interaction effect.

Table 7 Moderation Analysis

Hypothesis	Interaction Term	β	t-value	p-value	Result
H4	EE × GHRM → Organizational Sustainability	0.15	3.28	0.001	Supported

Table 7 represents the interaction between Employee Engagement (EE) and Green Human Resource Management (GHRM) and found a positive and significant influence on Organizational Sustainability ($\beta = 0.15$, $t = 3.28$, $p = 0.001$). This shows that GHRM enhances the relationship between employee engagement and sustainability, confirming Hypothesis H4 as supported. In other words, when green HR practices are effectively implemented, the impact of engaged employees on achieving organizational sustainability becomes stronger.

6. DISCUSSION AND MANAGERIAL IMPLICATIONS

The study analysed the relationship among employee engagement and its impact on organizational sustainability which is mediated by green HRM practices. It is found that the relationship is strong, indicating that when employees experience absorption, vigor and dedication in their work, they contribute meaningfully to economic, social, and environmental goals. This finding supports prior studies that identified engagement as a critical psychological state driving proactive and responsible work behavior (Kahn, 1990; Saks, 2006). In the context of sustainability, engaged employees extend their effort beyond performance metrics to include eco-consciousness, social responsibility, and ethical work practices. Such alignment reinforces Elkington's (1997) Triple Bottom Line (TBL) framework, suggesting that sustainable outcomes depend on how effectively organizations harness the energy and commitment of their human resources.

The analysis also demonstrated a significant link between employee engagement and leadership support. Engaged employees tend to communicate openly, show initiative, and build trust, encouraging leaders to reciprocate with greater support, guidance, and recognition. This finding is in coherence with Transformational Leadership Theory and emphasizes the reciprocal nature of leader-follower relationships and their joint role in achieving shared goals (Bass & Riggio, 2006). Leadership support emerged as a critical organizational resource, echoing the Job Demands-Resources (JD-R) framework, wherein engaged employees receive resources from leaders that enhance their motivation and performance. Thus, the results highlight a reinforcing cycle: engagement fosters leadership responsiveness, and supportive leadership further amplifies engagement, ultimately promoting sustainability-oriented behaviors.

Furthermore, leadership support was found to significantly influence organizational sustainability. Supportive leaders act as catalysts for cultural change by articulating a clear sustainability vision, motivating employees, and modelling ethical and environmentally responsible behavior. This result aligns with earlier research (Robertson & Barling, 2013) emphasizing that leaders imbibe sustainable values with organizational systems and routines. From the Resource-Based View (RBV) perspective, leadership support is considered a unique intangible asset that enhances the firm's long-term sustainability competitiveness by fostering human capital development and innovative green practices.

The results reveal partial mediation of leadership support between the influence of employee engagement on organizational sustainability. It represents the existence of both direct and indirect impact. Engaged employees create a positive psychological climate that encourages leaders to provide resources, mentorship, and encouragement for sustainability initiatives. In turn, this

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support strengthens employees' sense of belonging and shared purpose, leading to sustained behavioral outcomes aligned with environmental and social goals. This finding supports the notion that sustainability is co-created through dynamic interactions between engaged employees and supportive leaders, rather than imposed solely through top-down mandates.

In organizations with well-developed green HRM systems such as eco-friendly recruitment, sustainability training, and green performance management leads to sustainability. This suggests that green HRM serves as a contextual amplifier, transforms into collective sustainable performance. The presence of green HRM practices signals environmental stewardship and the commitment of the organisation towards social responsibility for achieving organisational sustainability (Renwick et al., 2013; Kim et al., 2019). Consequently, the findings position green HRM not merely as an administrative function but as a strategic enabler that connects people, culture, and sustainability goals.

From a theoretical perspective, this research offers an integrated model linking psychological factors with Organisational Sustainability. It extends engagement theory by establishing sustainability as a strategic outcome of engaged behavior, mediated by leadership support and strengthened through green HRM systems. The findings also contribute to leadership and sustainability research by illustrating how supportive leadership bridges the micro-level (employee engagement) and macro-level (organizational sustainability) constructs. Furthermore, green HRM leads to sustaining engagement-driven behaviors.

From a managerial standpoint, the findings carry significant implications. Organizations aiming to enhance sustainability should begin by cultivating employee engagement through meaningful work, empowerment, recognition, and open communication. Engaged employees act as champions of sustainability initiatives, contributing to the firm's economic efficiency, social equity, and environmental responsibility. Leadership development programs should emphasize sustainability-driven transformational leadership skills that foster empathy, ethical decision-making, and long-term vision. When leaders actively demonstrate concern for employee wellbeing and environmental outcomes, they create a culture of trust and shared accountability that supports sustainable practices.

Additionally, human resource managers should institutionalise green HRM practices across the employee lifecycle. Incorporating sustainability into recruitment, training, performance appraisal, and rewards not only strengthens employee commitment but also aligns personal and organisational values toward environmental consciousness. Green HRM acts as a structural mechanism that channels employee engagement into tangible sustainability outcomes. Managers should also establish systems that encourage innovation, collaboration, and cross-functional problem-solving for sustainability challenges. By doing so, organisations can transform engagement into a strategic asset that supports the United Nations Sustainable Development Goals 8 and 12 focus respectively on Decent Work and Economic Growth, and Responsible Consumption and Production.

Finally, the discussion affirms that employee engagement, when nurtured by leadership support and reinforced through green HRM practices, becomes a powerful driver of organizational sustainability. The relationship among the factors considered for the study highlights the necessity of a holistic approach that integrates individual psychology, managerial behavior, and systemic HR policies. Practically, organizations that invest in engagement, leadership, and green HRM not only achieve superior sustainability outcomes but also build resilient, innovative, and future-ready workforces capable of thriving in global business scenario.

7. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

This study aimed to develop and empirically validate an integrated model linking employee engagement, leadership support, and organizational sustainability, with green HRM practices as a moderating factor. Drawing on Social Exchange Theory, Transformational Leadership Theory, and the Resource-Based View, the research established a clear pathway through which engaged employees contribute to sustainable outcomes, both directly and indirectly. The results confirmed that employee engagement is characterized by absorption vigor and dedication, influences economic, social, and environmental sustainability. Leadership support played a mediating role which enhanced this relationship, while green HRM practices strengthened the influence of engagement towards sustainability practices positively. The results demonstrate that sustainability is not merely a structural or procedural outcome but a human-centered process that thrives on the synergy between employee motivation, leadership behavior, and sustainable HR systems.

The study by providing a holistic understanding of how psychological engagement translates into organizational sustainability contributes to theory and practice significantly. From a theoretical standpoint, the findings extend the employee engagement framework into the sustainability domain, showing that engagement is not limited to performance metrics but also encompasses social and ecological responsibility. Leadership support was identified as a critical enabler that transforms individual energy into collective action toward sustainable goals, reinforcing the role of leaders as architects of a supportive and sustainability-oriented culture. Moreover, the moderating influence of green HRM underscores the strategic importance of embedding sustainability into HR practices. When HR policies are designed around environmental stewardship, they create an ecosystem that nurtures engagement, supports innovation, and institutionalizes sustainable behavior.

In practical terms, this study underscores the need for organizations to cultivate engagement as a foundation for sustainability. Firms should create meaningful work experiences that allow employees to connect their personal values with broader sustainability goals. Leadership development should focus on enhancing emotional intelligence, ethical decision-making, and

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visionary thinking, enabling leaders to inspire and sustain engagement across teams. Additionally, HR departments should integrate green practices into in such a way that sustainability is practiced by incorporating green practices as a culture in every aspect of Human Resource Management function. Such integrated efforts will enable organizations to achieve competitive advantage while simultaneously addressing protection to planet, people and profit.

Cross sectional study has the limitation of assessing causality and hence longitudinal study is recommended to examine how engagement and leadership dynamics evolve over time in shaping sustainability outcomes.

Despite several controls there are chances for bias in data interpretation because of the self-reported data. Hence the data shall be collected through different sources such as objective metrics of the constructs and ratings by supervisors which will enhance the accuracy of findings. Other contextual variables like organizational culture, digital transformation, or ethical climate may further enrich the engagement–sustainability relationship and warrant future exploration. Finally, comparative studies in multiple sectors and countries could offer valuable insights into how engagement and sustainability interact in different socio-economic environments.

Future research should also explore additional mechanisms and outcomes within this framework. For instance, investigating the role of employee wellbeing, psychological safety, or organizational learning as potential mediators may deepen understanding of the pathways linking engagement to sustainability. Moreover, the growing emphasis on digitalisation creates challenges and opportunities for sustainability-driven engagement that merit further study. Scholars could also examine how emerging leadership styles—such as sustainable, ethical, or servant leadership interact with engagement and green HRM to promote sustainable performance in diverse organizational contexts. Integrating these perspectives will facilitate in moving forward with theoretical development and its application in sustainable human resource management field.

In conclusion, this study confirms that achieving organizational sustainability is fundamentally a human one than dealing with structural and technological contexts. Engaged employees, empowered by supportive leadership and reinforced by green HRM systems, become the true catalysts of sustainable transformation. By aligning employee motivation, leadership vision, and institutional systems, organizations can build a future-oriented culture that sustains not only business performance but also societal and environmental wellbeing. The insights from this research provide a comprehensive framework to academic and industry to practice in harnessing human potential into strategic assets towards achieving sustainable development in current business scenario

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