

The Mediating Role of Employee Engagement in the Relationship between Green Human Resource Management and Organizational Sustainability Performance



Juliet Pauladel Truly Makinggung¹, Jufrina Mandulangi²

^{1,2}Politeknik Negeri Manado, Indonesia

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Corresponding Author:

Penulis Korespondensi

✉ julietmakinggung22@gmail.com

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Abstract

This study investigates the mediating role of employee engagement in the relationship between Green Human Resource Management (GHRM) practices and organizational sustainability performance. Drawing on social exchange theory and the ability-motivation-opportunity (AMO) framework, we propose that GHRM initiatives (green recruitment, training, performance management, and empowerment) foster employee engagement, which in turn enhances environmental, social, and economic sustainability outcomes. Using survey data from 312 middle-level managers in manufacturing and service sectors, structural equation modeling (SEM) was employed to test the hypothesized model. Results indicate that GHRM has a significant positive direct effect on sustainability performance, and employee engagement partially mediates this relationship (indirect effect $\beta = 0.27$, $p < 0.001$). The findings highlight that engaged employees act as active agents who translate organizational green policies into tangible sustainability gains. Theoretical and practical implications are discussed, emphasizing the need for organizations to invest in engagement-centric GHRM strategies.

Abstrak

Penelitian ini menyelidiki peran mediasi dari keterikatan karyawan (employee engagement) dalam hubungan antara praktik Manajemen Sumber Daya Manusia Hijau (Green Human Resource Management / GHRM) dan kinerja keberlanjutan organisasi. Berdasarkan teori pertukaran sosial (social exchange theory) dan kerangka kerja ability-motivation-opportunity (AMO), kami mengusulkan bahwa inisiatif GHRM (rekrutmen hijau, pelatihan, manajemen kinerja, dan pemberdayaan) mendorong keterikatan karyawan, yang pada gilirannya meningkatkan hasil keberlanjutan lingkungan, sosial, dan ekonomi. Menggunakan data survei dari 312 manajer tingkat menengah di sektor manufaktur dan jasa, pemodelan persamaan struktural (structural equation modeling / SEM) digunakan untuk menguji model yang dihipotesiskan. Hasil penelitian menunjukkan bahwa GHRM memiliki efek langsung positif yang signifikan terhadap kinerja keberlanjutan, dan keterikatan karyawan memediasi sebagian hubungan ini (efek tidak langsung $\beta = 0,27$, $p < 0,001$). Temuan ini menyoroti bahwa karyawan yang terikat bertindak sebagai agen aktif yang menerjemahkan kebijakan hijau organisasi menjadi perolehan keberlanjutan yang nyata. Implikasi teoretis dan praktis dibahas, dengan menekankan perlunya organisasi untuk berinvestasi dalam strategi GHRM yang berpusat pada keterikatan (engagement-centric).

1. Introduction

In response to escalating environmental degradation and stakeholder pressures, organizations increasingly adopt sustainability-oriented strategies. Green Human Resource Management (GHRM) has emerged as a pivotal lever to align workforce behaviors with ecological and social goals (Renwick et al., 2013). GHRM encompasses HR practices such as green recruitment, environmentally conscious training, performance appraisal linked to sustainability metrics, and employee empowerment for green initiatives. Despite growing recognition of GHRM's potential, the mechanisms through which GHRM influences organizational sustainability performance—the triple bottom line (planet, people, profit)—remain underexplored (Yong et al., 2020).

Employee engagement, defined as a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2002), may serve as a critical mediating mechanism. Engaged employees exhibit proactive behaviors, emotional attachment, and discretionary effort, which are essential for implementing complex sustainability practices. However, prior research has largely examined direct relationships between GHRM and environmental performance, overlooking the mediating role of employee psychological states.

This study addresses this gap by answering: (1) Does GHRM positively affect organizational sustainability performance? (2) Does employee engagement mediate the GHRM-sustainability performance relationship? Using a sample of 312 managers, we test a structural model that positions employee engagement as a mediator. The findings extend both GHRM and engagement literature and offer actionable insights for managers seeking to leverage HR systems for sustainability excellence.

2. Theoretical Background and Hypotheses

2.1. Green Human Resource Management (GHRM)

GHRM integrates environmental management into traditional HR functions. Key practices include green staffing (attracting environmentally conscious candidates), green training and development (building environmental competencies), green performance management (setting eco-targets), and green rewards (recognizing sustainable behaviors). The ability-motivation-opportunity (AMO) framework posits that HR practices enhance performance by improving employees' abilities, motivation, and opportunities to contribute (Appelbaum et al., 2000). GHRM thus shapes both "green" competencies and discretionary motivation.

2.2. Organizational Sustainability Performance (OSP)

OSP reflects a firm's achievements across economic, environmental, and social dimensions (Elkington, 1998). Economic performance includes cost savings, market share; environmental performance comprises emission reduction, resource efficiency; social performance covers employee well-being, community relations. GHRM can directly influence OSP by reducing waste through green behaviors and improving brand reputation.

2.3. Employee Engagement as a Mediator

Social exchange theory (Cropanzano & Mitchell, 2005) suggests that when organizations invest in GHRM (e.g., green training, supportive eco-supervision), employees reciprocate with higher engagement. Engaged employees channel their energy into sustainability initiatives, volunteering for green projects, and improving operational eco-efficiency. Thus, GHRM fosters engagement, which then translates into superior OSP. Accordingly, we hypothesize:

Table 1. Descriptive Statistics and Correlations

Variable	Mean	SD	1	2	3
1. GHRM	3.82	0.68	(0.92)		
2. Employee Engagement	3.71	0.73	0.53**	(0.89)	
3. Sustainability Performance	3.69	0.70	0.61**	0.58**	(0.91)

- **H1:** GHRM has a positive direct effect on organizational sustainability performance.
- **H2:** GHRM has a positive effect on employee engagement.
- **H3:** Employee engagement positively affects organizational sustainability performance.
- **H4:** Employee engagement mediates the relationship between GHRM and organizational sustainability performance.

(Schaufeli et al., 2006): vigor, dedication, absorption ($\alpha = 0.89$). Organizational sustainability performance (15 items) derived from Dubey et al. (2017) – environmental (5 items), social (5 items), economic (5 items) dimensions ($\alpha = 0.91$). Control variables: firm size, industry type, and years of GHRM implementation.

3.3. Analytical Approach

SPSS 26 for descriptive statistics and correlation; AMOS 24 for structural equation modeling (SEM). We assessed common method bias using Harman’s single-factor test (variance extracted = 29.4%, below threshold). Bootstrapping with 5,000 resamples was applied for mediation testing.

Note: n=312; **p < 0.01; diagonal values are Cronbach's α .

4. Results

Measurement model fit indices were acceptable: $\chi^2/df = 2.31$, CFI = 0.95, TLI = 0.94, RMSEA = 0.06, SRMR = 0.05. Factor loadings exceeded 0.60, indicating convergent validity. Discriminant validity established via Fornell-Larcker criterion (square root of AVE for each construct greater than inter-construct correlations).

Structural model testing: H1 was supported (GHRM \rightarrow Sustainability Performance: $\beta = 0.41$, $p < 0.001$). H2: GHRM \rightarrow Employee Engagement ($\beta = 0.58$, $p < 0.001$). H3: Employee Engagement \rightarrow Sustainability Performance ($\beta = 0.46$, $p < 0.001$). For

3. Methodology

3.1. Sample and Procedure

Data were collected from 312 middle-level managers working in manufacturing (48%) and service (52%) firms in Indonesia and Malaysia that have implemented formal GHRM initiatives for at least two years. Convenience sampling combined with purposive criteria. Surveys were distributed online and on-site; we obtained a 67% response rate. The sample comprised 58% male, average organizational tenure 7.2 years.

3.2. Measures

All constructs measured using 5-point Likert scales (1=strongly disagree to 5=strongly agree). GHRM (12 items) adapted from Jabbour & Santos (2008) covering green recruitment, training, performance management, and empowerment ($\alpha = 0.92$). Employee engagement (9 items) from Utrecht Work Engagement Scale (UWES-9)

mediation (H4): bootstrapping results indicated a significant indirect effect ($\beta = 0.27$, 95% CI [0.18, 0.37]), accounting for 39% of total effect. Partial mediation is concluded because direct effect remains significant after including mediator. Model explained 47% variance in sustainability performance ($R^2 = 0.47$). Control variables (firm size, industry) showed no significant effects.

Figure 1. Structural model with standardized coefficients

GHRM → *Employee Engagement* (0.58***)
→ *Sustainability Performance* (0.46***);
Direct GHRM → *SP* (0.41***).
Indirect effect = 0.27 [0.18, 0.37]; *model fit*:
CFI=0.95, *RMSEA*=0.06.

5. Discussion

This study provides empirical evidence that employee engagement partially mediates the GHRM-sustainability performance link. Consistent with social exchange theory, employees reciprocate green HR investments with higher engagement, which translates into active promotion of sustainability goals. The findings extend the AMO framework by demonstrating that motivational mechanisms (engagement) are central to realizing environmental and social returns from GHRM. Compared to prior studies (e.g., Pham et al., 2019), we explicitly modeled employee psychological engagement as a process variable, revealing that GHRM's effectiveness hinges on cultivating an engaged workforce.

Practically, organizations should not adopt GHRM as a mere compliance tool but rather integrate employee involvement, recognition of green initiatives, and open communication to foster engagement. For instance, gamified green training and empowerment programs enhance vigor and dedication, which subsequently boost sustainability innovations. Limitations include cross-sectional design; causality cannot be firmly established. Future research should employ longitudinal or experimental designs. Additionally, self-reported sustainability performance may be

inflated; objective indicators (carbon footprint, waste reduction rates) would strengthen validity.

6. Conclusion and Implications

This research concludes that employee engagement serves as a pivotal mechanism through which GHRM influences organizational sustainability performance. HR managers aiming to achieve triple bottom line outcomes should design GHRM practices not only to develop green skills but also to foster psychological engagement. Organizations that cultivate a sense of purpose and emotional connection to sustainability objectives will likely outperform those focusing solely on compliance. Theoretical contributions include integrating engagement theory into GHRM literature and offering a robust mediated model. For policymakers, encouraging certification programs that recognize engagement-driven GHRM can accelerate corporate sustainability transformation.

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