

Green Human Resource Management and Organizational Citizenship Behavior: The Mediating Role of Environmental Commitment in Thailand's Private Sector

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Abstract

Aim/Purpose: This study investigated how Green Human Resource Management (GHRM) practices shape Organizational Citizenship Behavior (OCB) among employees in Thailand's private sector. Four GHRM dimensions—green recruitment and selection, green training and development, green performance management, and green pay and practices—were tested for their direct effects on extra-role environmental citizenship behavior to see whether environmental commitment mediated the relationship between GHRM practices and in-role behavior, clarifying the psychological mechanisms through which organizational green HR initiatives translate into voluntary employee behaviors.

Introduction/Background: Thailand's rapid industrialization intensifies tensions between economic development and environmental preservation. Air pollution, inadequate waste management, and ecosystem degradation threaten public health and long-term economic sustainability, compelling organizations to embed environmental responsibility into core practices. GHRM has emerged as a strategic response, integrating environmental objectives across talent acquisition, competency development, performance evaluation, and reward systems. Despite growing global scholarly interest, empirical work remains concentrated in Western and Chinese contexts, leaving Southeast Asian countries like Thailand largely underexplored. Existing research has frequently tested only direct GHRM–behavior relationships, neglecting the intervening psychological processes that may explain them, and has disproportionately studied public sector organizations while the environmentally consequential private sector has received comparatively limited attention. This study addresses these intersecting gaps by examining GHRM's influence on OCB through the mediating lens of environmental commitment, drawing on social exchange theory and the Ability-Motivation-Opportunity (AMO) framework as theoretical anchors.

Methodology: A cross-sectional quantitative survey was administered to 288 full-time private sector employees across manufacturing, services, retail, information technology, and financial services industries in Bangkok. Participants were recruited through HR managers at 10 mid-to-large-sized firms supplemented by professional network channels. Eligibility required full-time employment of at least 35 hours weekly, at least six months' organizational tenure, and age of 18 or older. A priori power analysis confirmed that 288 respondents would provide statistical power exceeding .80 to detect medium effect sizes. Self-administered questionnaires assessed GHRM practices across four validated subscales, environmental commitment using four items adapted from Raineri and Paillé (2016), and OCB through in-role and extra-role subscales adapted from Podsakoff et al. (2000) on 5-point Likert scales. Back-translation procedures ensured semantic equivalence of Thai-language items, and pilot testing confirmed acceptable reliability (Cronbach's $\alpha > .70$) across all scales. Data were analyzed using SPSS 26.0 and AMOS 24.0 with a two-step structural equation modeling approach, and bootstrapping (5,000 resamples) was used to generate bias-corrected confidence intervals for indirect effects.

Findings: Measurement model assessment confirmed strong reliability (composite reliability: .899–.959), convergent validity (AVE: .748–.825), and discriminant validity (all HTMT ratios < .85). The

structural model achieved acceptable fit (CFI = .94; TLI = .93; RMSEA = .06; SRMR = .058). Green recruitment and selection ($\beta = .450, p < .001$) and green training and development ($\beta = .317, p < .05$) significantly predicted environmental OCB, while green performance management ($\beta = .044, p = .738$) and green pay and rewards ($\beta = .114, p = .460$) produced non-significant results. The same two effective practices also significantly enhanced environmental commitment—green recruitment and selection ($\beta = .412, p < .01$) and green training and development ($\beta = .289, p < .05$)—whereas performance management and reward practices showed no significant effects. Environmental commitment demonstrated a significant positive relationship with in-role behavior ($\beta = .308, p < .001$).

Mediation analysis revealed that environmental commitment significantly mediated the green recruitment and selection–in-role behavior relationship (indirect effect = .127, 90% CI [.068, .186], $p = .001$) and green training and development–in-role behavior relationship (indirect effect = .089, 90% CI [.026, .152], $p = .019$). However, environmental commitment did not significantly mediate the green performance management–in-role behavior relationship or the green pay and reward practices–in-role behavior relationship; this suggested that evaluation and reward practices may influence in-role behavior through alternative mechanisms. These differential patterns indicated that upstream GHRM practices emphasizing values alignment and competency development more effectively cultivate citizenship behaviors than downstream evaluation and incentive mechanisms, a finding consistent with Thailand's collectivist cultural orientation, wherein internalized group norms outweigh individually targeted appraisal and monetary incentives.

Contribution/Impact on Society: This research extends social exchange theory and the AMO framework to environmental management in a developing economy, establishing environmental commitment as a critical psychological transmission mechanism linking green HR practices to discretionary employee behavior. By disaggregating GHRM dimensions and situating findings within Thailand's cultural and institutional context, the study advances sustainable HRM theory and provides managers with actionable, evidence-based guidance for simultaneously strengthening environmental performance and organizational effectiveness.

Recommendations: Organizations should prioritize green recruitment by embedding environmental criteria in hiring procedures and articulating sustainability commitments in job postings. Environmental training should build awareness, competencies, and values through experiential and collaborative methods. Environmental commitment should be cultivated through leadership modeling, transparent communication about environmental performance, and employee participation in green decision-making. Performance management and reward mechanisms require substantive redesign incorporating meaningful, consistently applied environmental criteria. GHRM strategies should reflect both industry-specific requirements and the cultural values prevalent in Thai workplaces.

Research Limitations: Three principal limitations warrant consideration. The cross-sectional design precluded causal inference. Exclusive reliance on self-reported measures raises concerns about common method bias and social desirability effects, despite procedural and statistical mitigation efforts. Convenience sampling concentrated in Bangkok limits generalizability to Thailand's broader private sector. The exclusive focus on environmental commitment as a mediator also overlooked alternative psychological mechanisms—such as green self-efficacy and organizational identification—that may account for additional explained variance in OCB.

Future Research: Longitudinal designs would strengthen causal claims, while multi-source data incorporating supervisor ratings and objective environmental metrics—such as energy consumption and waste reduction—would reduce method variance. Probability sampling across diverse industries and regions would improve external validity. Multilevel modeling could reveal how organizational climate and leadership moderate GHRM effectiveness. Future studies should test expanded mediator models and conduct cross-cultural comparisons to determine whether findings may be generalized beyond Thailand's specific cultural and institutional context.

Keywords: *Green human resource management, organizational citizenship behavior*

Introduction

Environmental challenges demand coordinated action across society. Businesses bear substantial responsibility for ecological stewardship (Renwick et al., 2013). Thailand's rapid industrialization has forced a delicate balance between economic advancement and environmental protection. Air pollution, inadequate waste management, and ecosystem degradation compromise public health while threatening economic sustainability (Ahmad, 2015; Paillé et al., 2014).

Contemporary organizations face mounting pressure from diverse stakeholders. Customers, investors, government agencies, and communities expect strong environmental performance (Dumont et al., 2017). Green Human Resource Management (GHRM) addresses this challenge by embedding environmental objectives throughout HR systems. Employee participation fundamentally shapes organizational environmental success (Renwick et al., 2013; Jabbour & Santos, 2008). GHRM transcends regulatory compliance by transforming workforces, recruiting environmentally conscious individuals, incorporating environmental indicators into performance evaluations, developing green competencies, and rewarding pro-environmental actions (Pham et al., 2020; Guerçi et al., 2016).

Despite growing research interest, important gaps persist. Most studies examine Western contexts, leaving Southeast Asian countries like Thailand underexplored (Saeed et al., 2019). Psychological processes linking GHRM to employee behaviors need investigation (Paillé & Raineri, 2015). Public sector organizations dominate existing research, with private sector contexts receiving less attention (Kim et al., 2019). This study addresses three specific gaps: first, psychological mechanisms linking GHRM to employee behavior remain underexplored, with most studies testing only direct relationships (Paillé & Raineri, 2015). Second, private sector contexts receive less empirical attention than public sector organizations (Kim et al., 2019), and third, Southeast Asian settings—particularly Thailand—are largely absent from the GHRM literature despite their distinct cultural and institutional characteristics (Saeed et al., 2019). Accordingly, this study asked:

(a) Do GHRM practices positively influence Organizational Citizenship Behavior (OCB) among Thai private sector employees? OCB refers to voluntary, discretionary behaviors beyond formal job requirements that contribute to effective organizational functions, encompassing environmentally directed actions and in-role task performance (Organ, 1988; Borman & Motowidlo, 1993).

(b) Does environmental commitment mediate the GHRM–OCB relationship? The research tests these questions by examining four GHRM dimensions against OCB outcomes, with environmental commitment modeled as a mediating variable.

Literature Review

Green Human Resource Management (GHRM)

GHRM weaves environmental considerations throughout human resource management systems (Renwick et al., 2013). This approach expands traditional HR by positioning sustainability as central to organizational identity (Jabbour & Santos, 2008). Theoretical foundations are drawn from stakeholder theory, resource-based view, and institutional theory (Jackson et al., 2011).

Four key practice areas comprise GHRM. Green recruitment/selection attracts environmentally conscious candidates and adds environmental criteria to hiring decisions (Wehrmeyer, 1996; Renwick et al., 2013; Guerçi et al., 2016). Firms advertise environmental commitments in job postings and assess candidates' environmental awareness in interviews. Environmental training and development builds employee knowledge, skills, and competencies through educational programs and workshops (Jabbour, 2011; Renwick et al., 2013; Pham et al., 2020). Training covers waste reduction, energy conservation, and sustainable practices in courses, on-the-job learning, and collaborative sessions.

Green performance management incorporates environmental standards into performance evaluation systems (Jackson et al., 2011; Renwick et al., 2013; Jabbour et al., 2010). This involves setting environmental targets and tracking progress. When employees know environmental performance assessments await them, green behaviors increase. Environmental rewards and recognition acknowledge employee contributions to environmental goals through financial and non-financial incentives (Guerçi et al., 2016; Renwick et al., 2013). These include bonuses tied to environmental achievements, public recognition, or special awards for environmental initiatives.

Asian contexts reveal positive GHRM effects, with research demonstrating links among GHRM, environmental commitment, and job satisfaction (Saeed et al., 2019). However, research specifically examining Thai private sector organizations remains limited.

Then again, not all GHRM components have demonstrated consistent effects across contexts. Some studies report weak or non-significant relationships between green performance management, rewards, and employee pro-environmental behavior (Pham et al., 2020). Guerci et al. (2016) found that performance management effectiveness depends on how meaningfully environmental criteria are integrated into evaluation systems. Furthermore, drawing on self-determination theory, Deci and Ryan (2000) caution that externally administered financial incentives may undermine intrinsic environmental motivation over time—a finding that directly challenges reward-based GHRM assumptions. Taken together, these contradictions suggest that GHRM effectiveness varies by practice type, implementation quality, and cultural context, justifying a disaggregated examination of individual GHRM dimensions rather than treating GHRM as a single composite construct.

Organizational Citizenship Behavior (OCB)

OCB captures voluntary employee actions beyond formal job requirements that enhance organizational functioning (Organ, 1988). These behaviors receive no direct reward through formal compensation systems, yet they contribute to organizational effectiveness. Podsakoff et al. (2000) identified several OCB dimensions. Altruism helps specific colleagues with work-related problems. Conscientiousness exceeds minimum requirements in attendance and rule observance. Sportsmanship tolerates inconveniences without complaining. Courtesy prevents work-related problems through considerate actions. Civic virtue involves participating in organizational governance and staying informed about organizational issues.

Social exchange principles underpin OCB (Blau, 1964). When employees experience organizational support and fair treatment, they reciprocate through citizenship behaviors (Cropanzano & Mitchell, 2005). These voluntary actions prove particularly valuable in private sector contexts by enhancing organizational performance through better coordination, resource availability, and organizational adaptation (Bolino et al., 2013; Podsakoff et al., 2009). In environmental contexts, OCB is manifested as voluntary pro-environmental behaviors including conserving resources, participating in green initiatives, sharing environmental knowledge, and suggesting environmental improvements (Daily et al., 2009; Ones & Dilchert, 2012). Thai cultural factors emphasizing harmony, respect for authority, and collective orientation may influence how OCB manifests in culturally specific ways.

Environmental Commitment

Environmental commitment reflects a person's psychological bond with and responsibility toward protecting nature (Raineri & Paillé, 2016); commitment frameworks are adapted to environmental contexts (Unsworth et al., 2013). Theoretical frameworks distinguish commitment types: affective commitment involves emotional attachment to environmental protection; continuance commitment relates to the perceived costs of not engaging in environmental protection; normative commitment reflects a sense of obligation. Research has shown that affective commitment is most strongly associated with voluntary environmental behaviors (Norton et al., 2015; Raineri & Paillé, 2016).

Environmental commitment is developed through several pathways. Organizational socialization processes expose employees to environmental values and norms; environmental training increases awareness and understanding. Leadership modeling demonstrates the importance of environmental protection (Paillé & Raineri, 2015); direct experiences with nature also strengthens commitment (Unsworth et al., 2013). Organizational practices demonstrating genuine environmental concern foster stronger employee commitment (Norton et al., 2015). Employees with strong environmental commitment are more willing to engage in pro-environmental behaviors. They prove more receptive to environmental initiatives and more likely to advocate for environmental causes (Raineri & Paillé, 2016; Unsworth et al., 2013). In Thailand, environmental commitment may be influenced by Buddhist principles emphasizing interconnectedness with nature (Darlington, 2012).

Hypothesis Development

H₁: GHRM practices positively influence OCB among Thai private sector employees.

Social exchange theory suggests that when organizations invest in GHRM, employees perceive organizational support and reciprocate through citizenship behaviors (Blau, 1964; Cropanzano & Mitchell, 2005). The AMO model indicates that GHRM enhances ability, motivation, and opportunities for pro-environmental behaviors (Appelbaum et al., 2000; Pham et al., 2020). Studies by Dumont et al. (2017), Pham et al. (2020), and Kim et al. (2019) have supported this relationship.

H₂: GHRM practices positively influence environmental commitment among Thai private sector employees.

Organizational socialization theory suggests GHRM shapes employee attitudes through formal and informal processes (Van Maanen & Schein, 1979). Authentic environmental practices foster employee identification with environmental values (Burke & Ng, 2006; Ramus & Steger, 2000). Saeed et al. (2019), Paillé and Raineri (2015), and Norton et al. (2015) found positive relationships between GHRM and environmental commitment.

H₃: Environmental commitment positively influences in-role behavior among Thai private sector employees.

Attitude-behavior frameworks propose that environmental commitment predicts citizenship behavior when it is salient and applicable (Ajzen, 1991). Committed employees develop ownership of environmental initiatives, motivating protective behaviors (Pierce et al., 2001). Raineri and Paillé (2016), Paillé et al. (2014), and Robertson and Barling (2013) have confirmed this relationship.

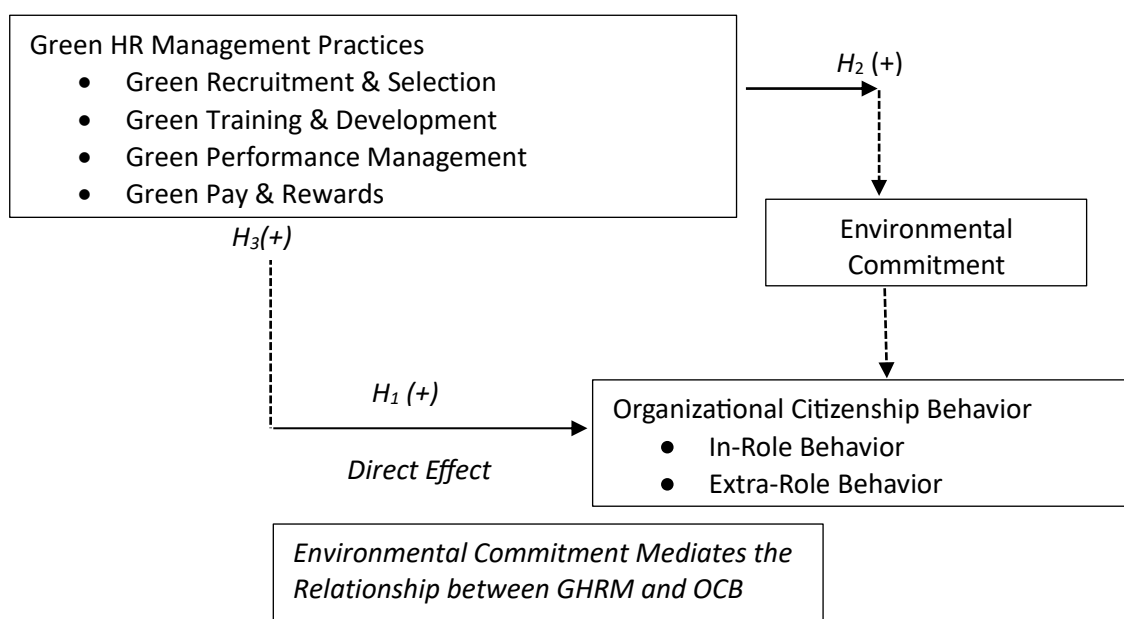
H₄: Environmental commitment mediates the relationship between GHRM practices and in-role behavior among Thai private sector employees.

Environmental commitment represents a psychological process linking GHRM to OCB (Baron & Kenny, 1986). GHRM practices foster environmental commitment (H_2), which motivates OCB (H_3). This partial mediation is supported by Paillé and Raineri (2015), Saeed et al. (2019), and Dumont et al. (2017).

Research Framework

Based on the theoretical foundations and empirical evidence reviewed above, the research framework shown in Figure 1 (please see the following page) was used to guide this study.

Figure 1 Conceptual Framework of the Study



Control Variables: Gender, Age, Education, Tenure

Research Methodology

Research Design

In this study, a cross-sectional quantitative survey design was employed to examine relationships among GHRM practices, environmental commitment, and OCB. Data collection occurred at a single time. While cross-sectional designs constrain causal inference, strong theoretical foundations and statistical controls enhance confidence in findings (Creswell & Creswell, 2017; Podsakoff et al., 2012).

Population and Sampling

The target population comprised full-time employees from Thailand's private sector across manufacturing, services, retail, information technology, and financial services. HR managers from ten mid-to-large-sized firms in the Bangkok metropolitan area facilitated questionnaire distribution, supplemented by professional network channels to broaden sectoral coverage. Convenience sampling was justified by the absence of a comprehensive national sampling frame for private sector employees and by practical access constraints (Saunders et al., 2019). Sample size determination followed established SEM guidelines, maintaining a minimum ten-cases-to-parameter ratio (Kline, 2015), with a priori power analysis confirming that 288 participants would provide power exceeding .80 to detect medium effect sizes ($\alpha = .05$; Cohen, 1992). Eligibility required full-time employment of at least 35 hours per week, a minimum organizational tenure of six months, and an age of 18 years or older, ensuring that respondents possessed sufficient experience to evaluate GHRM practices meaningfully.

Data Collection Instrument

A structured questionnaire with four sections was used to collect data. Section 1 gathered demographic information, including gender, age, educational level, organizational tenure, industry sector, and job position. Section 2 assessed GHRM practices through four dimensions: green recruitment and selection (3 items, Renwick et al., 2013), green training and development (3 items, Jabbour, 2011), green performance management (3 items, Jackson et al., 2011), and green pay and reward practices (3 items, Guerci et al., 2016). All items used a 5-point Likert scale. Section 3 measured Environmental Commitment using a 4-item scale adapted from Raineri and Paillé (2016). Section 4 assessed OCB with In-Role Behavior (5 items) and Extra-Role Behavior/OCB-Environment (4 items) adapted from Podsakoff et al. (2000). These measures demonstrated strong validity and reliability in previous studies (Renwick et al., 2013; Pham et al., 2020; Podsakoff et al., 2009).

Questionnaire Development and Validation

Items from validated English-language scales underwent back-translation into Thai to ensure semantic equivalence (Brislin, 1970; Hinkin, 1998). Three bilingual experts independently translated and back-translated items, resolving discrepancies through discussion. Five subject matter experts assessed content validity by evaluating each item's relevance, clarity, and representativeness. Interviews with 10 private sector employees examined face validity. A pilot study with 50 employees confirmed acceptable internal consistency (Cronbach's $\alpha > .70$ for all scales) and factor structure.

Measurement validity and reliability were established through multiple procedures. Internal consistency was confirmed by Cronbach's alpha coefficients exceeding .70 for all scales in the pilot study ($n = 50$). In the main study, composite reliability (CR) values ranged from .899 to .959, and average variance extracted (AVE) values ranged from .748 to .825, satisfying thresholds recommended by Hair et al. (2010) and Fornell and Larcker (1981), respectively. Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio, with all values remaining below .85, confirming that each construct captured a theoretically distinct dimension (Henseler et al., 2015).

Data Collection Procedures

Data collection spanned June to August 2024; HR managers facilitated employee access. Both paper-based and online questionnaires (on the Qualtrics platform) accommodated participant preferences. All participants received detailed study information and provided explicit informed consent; no personally identifiable information was collected. Survey completion entered participants

into a lottery for 500 Thai Baht gift cards. Quality control mechanisms included attention check items, response time monitoring, and pattern detection algorithms (Podsakoff et al., 2012).

Common Method Bias Mitigation

Since data came from a single source, common method bias was a potential concern. Procedural remedies included separating predictor and criterion variables in the questionnaire, providing clear instructions emphasizing honesty and confidentiality, using different response formats for different constructs, and including negatively worded items (Podsakoff et al., 2012). Statistical remedies included Harman's single-factor test and common latent factor method to test whether an unmeasured latent method factor significantly improved model fit. Confirmatory factor analysis verified discriminant validity among constructs.

Data Analysis Strategy

SPSS 26.0 and AMOS 24.0 were used to analyze data. Preliminary analysis examined missing data patterns, outliers, and normality assumptions. Missing values (less than 5%) were treated with full-information maximum likelihood estimation (Enders, 2010). Descriptive statistics and assumption testing were employed to verify the requirements for SEM analysis, including multivariate normality, linearity, and multicollinearity (Kline, 2015). Confirmatory Factor Analysis evaluated the measurement model using multiple fit indices: CFI, TLI, RMSEA, and SRMR (Anderson & Gerbing, 1988). Reliability assessment used Cronbach's alpha ($\alpha > .70$) and composite reliability (CR $> .70$) (Hair et al., 2010). Convergent validity evaluation used average variance extracted (AVE $> .50$) and standardized factor loadings ($\lambda > .60$) (Fornell & Larcker, 1981). Discriminant validity examination used the Fornell-Larcker criterion and HTMT ratio ($< .90$) (Henseler et al., 2015). Structural equation modeling tested hypothesized relationships using a two-step approach (Anderson & Gerbing, 1988). Environmental commitment's mediating role underwent bootstrapping with 5,000 resamples to generate bias-corrected confidence intervals for indirect effects (Preacher & Hayes, 2008).

Results

Participant Characteristics

The final sample comprised 288 private sector employees representing diverse demographic backgrounds. Table 1 presents detailed demographic information.

Table 1 Demographic Characteristics of Participants ($n = 288$)

Characteristic	Variables	Frequency	Percentage
Gender	Male	183	63.5
	Female	105	36.5
Age (years)	18–27	89	30.9
	28–37	96	33.3
	38–47	83	28.8
	48 and above	20	7.0
Education	Graduate	118	40.9
	Postgraduate	141	48.9
	Other	29	10.2
Tenure	Less than 1 year	41	14.2
	1–5 years	122	42.4
	6–10 years	53	18.4
	11–15 years	44	15.3
	16 and above	28	9.7

Prior to testing the structural relationships, the effects of control variables—gender, age, educational level, and organizational tenure—were assessed within the structural model. None of the control variables demonstrated statistically significant associations with the outcome variables (all $p > .05$), indicating that the hypothesized relationships were not substantially confounded by the demographic characteristics of the sample.

Measurement Model Assessment

Comprehensive assessment of the measurement model established the reliability and validity of all constructs before testing structural relationships.

Reliability Analysis

Table 2 presents detailed psychometric properties of all constructs. All measures demonstrated excellent reliability, exceeding conventional thresholds.

Table 2 *Measurement Model Assessment Results*

Construct	Item Code	Item Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Green Recruitment and Selection Practices	GRSP1	.932	.865	.917	.787
	GRSP2	.868			
	GRSP3	.859			
Green Training and Development Practices	GTDP1	.896	.851	.908	.768
	GTDP2	.877			
	GTDP3	.856			
Green Performance Management Practices	GPMP1	.826	.868	.899	.748
	GPMP2	.891			
	GPMP3	.876			
Green Pay and Reward Practices	GPRP1	.797	.897	.925	.805
	GPRP2	.935			
	GPRP3	.951			
Environmental Commitment	EC1	.915	.898	.938	.790
	EC2	.899			
	EC3	.878			
	EC4	.862			
In-Role Behavior	IRB1	.892	.950	.959	.825
	IRB2	.907			
	IRB3	.922			
	IRB4	.910			
	IRB5	.908			
Organizational Citizenship Behavior-Environment	OCBE1	.941	.898	.929	.768
	OCBE2	.880			
	OCBE3	.891			
	OCBE4	.785			

Cronbach's alpha coefficients ranged from .851 to .950, well above the .70 standard recommended by Nunnally and Bernstein (1994). Composite reliability ranged from .899 to .959, exceeding thresholds recommended by Hair et al. (2010). These indicators confirmed that scale items reliably measured their intended constructs.

Convergent Validity

Standardized factor loadings and average variance extracted (AVE) established convergent validity. The minimum loading was .785, substantially above the .60 minimum threshold suggested by Bagozzi and Yi (1988). Strong loadings indicated that items related closely to their intended constructs; AVE values ranged from .748 to .825, exceeding the .50 criterion established by Fornell and Larcker (1981). The constructs explained more than 74% of the variance in their indicators, demonstrating strong convergent validity. The combination of high factor loadings, adequate AVE, and strong composite reliability provides robust evidence that measures adequately captured their intended constructs.

Discriminant Validity

Discriminant validity ensures constructs are empirically distinct from one another. Table 3 presents the Heterotrait-Monotrait (HTMT) ratio matrix, providing a more conservative and reliable assessment of discriminant validity compared to traditional methods (Henseler et al., 2015).

Table 3 *Discriminant Validity Assessment (HTMT Ratio)*

	GRSP	GTDP	GPMP	GPRP	EC	IRB	OCBE
GRSP	-						
GTDP	.231	-					
GPMP	.522	.154	-				
GPRP	.632	.242	.532	-			
EC	.310	.245	.192	.196	-		
IRB	.162	.424	.118	.060	.365	-	
OCBE	.619	.209	.705	.487	.287	.144	-

All HTMT values remained well below the conservative .85 threshold recommended by Henseler et al. (2015). The highest value was .705 between GPMP and OCBE. These results provided strong evidence of discriminant validity, confirming that each construct measured a distinct theoretical concept not captured by other constructs in the model. The combination of excellent reliability, strong convergent validity, and demonstrated discriminant validity established a sound measurement foundation for testing structural relationships.

Common Method Bias Assessment

Given the cross-sectional self-reported nature of the data, common method variance was a potential concern. Several tests assessed this issue. Harman's single-factor test revealed that the first unrotated factor explained 34.6% of total variance, falling well below the 50% threshold that would indicate substantial common method bias according to Podsakoff et al. (2012). A single-factor model comparison to the hypothesized multi-factor model using confirmatory factor analysis showed the single-factor model had dramatically poorer fit ($\Delta\chi^2 = 1,247.3$, $p < .001$). The common latent factor approach indicated that the method factor did not substantially improve model fit ($\Delta CFI = .008$, $\Delta RMSEA = .004$). Individual item method factor loadings were small (average = .09). While these tests cannot definitively rule out all common method effects, they provided reasonable confidence that common method bias did not seriously threaten the validity of the findings (Podsakoff et al., 2012).

Structural Model Testing

After confirming adequate measurement properties, the structural model was estimated to test hypothesized relationships. The model demonstrated acceptable fit: $\chi^2 (247) = 605.2$, $p < .001$; $\chi^2/df = 2.45$; CFI = .94; TLI = .93; RMSEA = .06 [90% CI: .053-.067]; SRMR = .058. All fit indices met or exceeded conventional criteria, supporting confidence in structural model results.

Table 4 presents detailed results of hypothesis testing, including standardized path coefficients, standard errors, t -statistics, p -values, and bias-corrected bootstrap confidence intervals.

Table 4 Structural Equation Model Results and Hypothesis Testing

Path	Beta	Standard Error	t-Statistics	p-Values	5.00%	95.00%	Decision
GRSP → OCBE	.450	.137	3.287	.001	.220	.662	Supported
GTDP → OCBE	.317	.154	2.064	.039	.062	.559	Supported
GPMP → OCBE	.044	.131	.335	.738	-.179	.248	Not supported
GPRP → OCBE	.114	.154	.738	.460	-.187	.333	Not supported
GRSP → EC	.412	.143	2.878	.004	.177	.647	Supported
GTDP → EC	.289	.122	2.369	.018	.088	.490	Supported
GPMP → EC	.076	.070	1.086	.275	-.039	.191	Not supported
GPRP → EC	.135	.101	1.337	.182	-.031	.301	Not supported
EC → IRB	.308	.065	4.738	<.001	.201	.415	Supported
GRSP → EC → IRB	.127	.036	3.528	.001	.068	.186	Supported
GTDP → EC → IRB	.089	.038	2.342	.019	.026	.152	Supported
GPMP → EC → IRB	.023	.022	1.045	.296	-.013	.059	Not supported
GPRP → EC → IRB	.042	.031	1.355	.175	-.009	.093	Not supported

Hypothesis 1: GHRM Practices to OCB

Results provided partial support for H_1 . Green recruitment and selection practices (GRSP) showed a strong positive relationship with environmental OCB ($\beta = .450$, $p < .001$). Green training and development practices (GTDP) also showed a significant positive effect ($\beta = .317$, $p < .05$). However, green performance management practices (GPMP), along with green pay and reward practices (GPRP), did not significantly predict environmental OCB. These mixed findings suggest that practices focusing on value alignment and capability building prove most effective for fostering OCB. Non-significant effects of performance management and rewards may reflect implementation challenges or employee skepticism about evaluation fairness and reward authenticity. The non-significant effects of green performance management ($\beta = .044$, $p = .738$) and green pay and reward practices ($\beta = .114$, $p = .460$) may reflect both cultural and implementation factors.

In Thailand's collectivist cultural context, pro-environmental behaviors are more likely driven by internalized group norms reinforced through selection and training than by individually targeted appraisals or monetary incentives (Saeed et al., 2019). From an implementation standpoint, if environmental criteria are perceived as superficially added to existing evaluations or if reward systems are applied inconsistently, their motivational signal is insufficient to activate citizenship behaviors (Deci & Ryan, 2000; Guerci et al., 2016). These patterns suggest that the effectiveness of GHRM practices depends not only on formal adoption, but on implementation depth and cultural alignment.

Hypothesis 2: GHRM Practices to Environmental Commitment

GHRM practices positively influence environmental commitment. Results revealed that GRSP ($\beta = .412$, $p < .01$) and GTDP ($\beta = .289$, $p < .05$) significantly enhanced environmental commitment, providing support for H_2 . However, GPMP ($\beta = .076$, $p = .275$) and GPRP ($\beta = .135$, $p = .182$) showed no significant effects on environmental commitment. These findings mirror the pattern observed for H_1 , suggesting that talent acquisition and competency development practices are most effective at shaping employee environmental attitudes. Organizations that successfully foster environmental commitment do so primarily through selecting environmentally conscious individuals and developing environmental competencies, rather than through performance evaluation and incentive systems.

Hypothesis 3: Environmental Commitment to OCB

Environmental commitment positively predicted in-role behavior. Environmental commitment demonstrated a significant positive relationship with in-role behavior ($\beta = .308$, $p < .001$), providing strong support for H_3 . This indicates that employees with stronger commitment to environmental

goals are more likely to fulfill their core role responsibilities effectively. This aligns with the Theory of Planned Behavior (Ajzen, 1991), suggesting that if employees internalize organizational environmental values, this internalization manifests in conscientious task performance and adherence to role-defined responsibilities. In other words, environmental commitment functions not merely as an attitudinal construct, but also as a motivational mechanism that channels employee effort toward both environmental and organizational objectives simultaneously.

Hypothesis 4: Mediation Effects

Environmental commitment (EC) mediated the relationship between GHRM practices and in-role behavior. The bootstrapping results (5,000 resamples) indicated that EC significantly mediated the relationship between GRSP and in-role behavior (indirect effect = .127, 90% CI [.068, .186], $p = .001$). EC also significantly mediated the relationship between GTDP and in-role behavior (indirect effect = .089, 90% CI [.026, .152], $p = .019$). However, EC did not significantly mediate the relationship between GPMP and in-role behavior (indirect effect = .023, 90% CI [−.013, .059], $p = .296$), nor the relationship between GPRP and in-role behavior (indirect effect = .042, 90% CI [−.009, .093], $p = .175$), as both confidence intervals included zero, indicating non-significant mediation paths. These results provide partial support for H_4 , demonstrating that environmental commitment serves as a significant mediating mechanism for two of four GHRM dimensions—talent acquisition and skill development—but not for performance appraisal or reward-based practices. This differential pattern suggests that evaluation and reward systems may influence in-role behavior through alternative pathways beyond environmental commitment, and that practices emphasizing values alignment and competency development are more effective at cultivating internalized environmental commitment than performance appraisal or monetary incentive mechanisms.

Discussion

This study contributes to GHRM understanding by clarifying how organizational green HR practices influence employee behaviors, and the psychological processes underlying these effects.

Theoretical Contributions

The results support social exchange processes in environmental contexts. When organizations demonstrate commitment through green recruitment and training, employees see these practices as organizational support and respond with behavioral contributions (Blau, 1964; Cropanzano & Mitchell, 2005; Renwick et al., 2013). The study clarified psychological pathways connecting GHRM to behavior through environmental commitment. Previous research has modeled direct relationships between GHRM and outcomes, while neglecting underlying psychological processes (Paillé & Raineri, 2015; Renwick et al., 2013). By establishing environmental commitment as a key transmission mechanism, these findings demonstrate how organizational policies may be converted into personal attitudes that energize behavior, aligning with the theory of planned behavior predictions (Ajzen, 1991).

Environmental commitment emerged as a significant mediator for recruitment-based and training-based pathways, but not for performance management-based or reward-based pathways. This suggests that environmental commitment functions most powerfully when GHRM practices align candidates' and employees' values with organizational environmental goals—whether through careful talent acquisition or experiential learning programs—rather than relying on formal performance evaluation mechanisms or external monetary incentives. In Thailand, where Buddhist principles emphasizing interdependence with nature are culturally embedded (Darlington, 2012), practices that reinforce and cultivate these pre-existing environmental orientations—from recruitment through training—may be particularly effective at deepening psychological environmental commitment. These findings also contribute to the broader sustainable HRM literature by demonstrating that green practices generate the most durable behavioral outcomes when they shape organizational culture and employee identity at the point of entry and skill development, rather than modifying behavioral contingencies through evaluation and reward mechanisms (Renwick et al., 2013; Pham et al., 2020).

Contrasting effectiveness patterns across GHRM components yields a refined theoretical understanding. Strong effects of green recruitment/selection and training/development contrast with negligible direct effects of performance management and reward. This suggests upstream processes—securing appropriate talent and cultivating competencies—potentially exceed downstream processes—assessing and incentivizing—for shaping environmental attitudes and behaviors (Pham et al., 2020; Appelbaum et al., 2000). Situating GHRM research within Thailand's business context addresses a significant geographical gap in existing literature. The relatively strong relationships observed may reflect cultural orientations toward environmental harmony consistent with Buddhist worldviews that permeate Thai society (Saeed et al., 2019; Darlington, 2012).

Practical Implications

This study's findings carry several important practical implications for organizations seeking to promote green behaviors in the workplace. First, the significant effect of environmental commitment on in-role behavior ($\beta = .308$) highlights the importance of fostering genuine employee commitment to organizational environmental goals, rather than relying only on structural GHRM systems. Thus, organizations should invest in building psychological ownership of sustainability objectives, as internal commitment appears to be a critical mechanism translating GHRM practices—particularly green recruitment and selection and green training and development—into tangible behavioral outcomes.

Second, the finding that neither green performance management nor green pay and reward practices operated through environmental commitment suggests that evaluation and monetary incentive structures alone are insufficient to achieve lasting behavioral change. Organizations should thus complement evaluation- and reward-based mechanisms with non-monetary approaches, such as environmental values socialization, sustainability-oriented mentoring, and purpose-driven leadership, to more effectively nurture the internalized commitment that drives consistent role performance.

Third, given that green recruitment and selection and green training and development were the most consistently effective GHRM practices across both direct and mediated outcomes, practitioners should prioritize these practices when designing their GHRM strategies, particularly in collectivist cultural contexts such as Thailand where values alignment and group-level internalization tend to exert stronger influence on employee behavior than individualized evaluation or incentive systems.

Comparison with Previous Research

Results support prior research on GHRM-behavior relationships (Dumont et al., 2017; Pham et al., 2020) while revealing critical nuances. Training and involvement emerged as primary drivers, whereas performance management and rewards showed negligible direct effects—contradicting assumptions in Jackson et al. (2011) and Guerci et al. (2016). These discrepancies likely reflect cultural contexts in which Thai employees respond more to developmental support than to evaluative mechanisms (Saeed et al., 2019). Environmental commitment's mediating role confirmed Paillé and Raineri's (2015) theoretical framework, demonstrating that psychological mechanisms translate organizational practices into behavioral outcomes (Norton et al., 2015; Raineri & Paillé, 2016).

Limitations

This study was subject to three notable limitations that affect the interpretation of findings. First, the exclusive focus on environmental commitment as a mediator overlooked alternative psychological pathways such as green self-efficacy and organizational identification, which may account for additional variance in OCB (Norton et al., 2015; Paillé & Raineri, 2015). This omission means the explanatory role of environmental commitment may be overstated. Second, all outcome measures relied on self-report, excluding objective indicators such as energy consumption or waste metrics; this raises the possibility of social desirability bias inflating observed effect sizes (Pham et al., 2020). Third, convenience sampling concentrated in Bangkok limits generalizability to Thailand's broader private sector, particularly organizations in less industrialized regions where GHRM implementation, cultural pressures, and environmental norms may differ substantially from those observed here.

Future Research Directions

Longitudinal designs could establish temporal precedence and causal ordering (Creswell & Creswell, 2017); multi-source data incorporating supervisor ratings and archival records may reduce method variance (Podsakoff et al., 2012). Probability sampling across industries and regions would enhance external validity (Saunders et al., 2019); multilevel models could explore how organizational climate and leadership moderate GHRM effectiveness (Renwick et al., 2013). Expanded mediator models could concurrently test perceived organizational support, psychological ownership, and green self-efficacy (Norton et al., 2015; Paillé & Raineri, 2015). Objective outcomes such as carbon emissions, resource consumption, and waste reduction, would provide stronger validity (Pham et al., 2020). Cross-cultural comparisons would establish if findings reflect Thai values emphasizing environmental harmony (Darlington, 2012; Saeed et al., 2019). Qualitative investigations could explore implementation challenges and success factors in Thai organizational contexts (Guerci et al., 2016).

Author Contributions

Polwasit Lhakard: Conceptualization, methodology, investigation, data curation, formal analysis, visualization, writing—original draft, writing—review & editing, project administration.

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