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GREEN HUMAN RESOURCE MANAGEMENT AND EMPLOYEE PRO-ENVIRONMENTAL BEHAVIOR: THE MEDIATING ROLE OF ORGANIZATIONAL SUSTAINABILITY COMMITMENT

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Abstract: Environmental sustainability increasingly depends not only on formal organizational policies but also on employees' willingness to translate these policies into everyday workplace behavior. This study examines the relationship between perceived Green Human Resource Management (GHRM) and Employee Pro-Environmental Behavior (EPEB), focusing on Employee Commitment to Organizational Sustainability (ECOS) as a mediating mechanism. Data were collected through a structured questionnaire from 147 employees working in organizations in North Macedonia. The constructs were assessed using five-point scales adapted from established GHRM, organizational commitment, and workplace pro-environmental behavior literature. Reliability analysis, Pearson correlation, regression, and bootstrapped mediation analysis were applied. The results indicate that GHRM positively predicts ECOS and is positively associated with EPEB. ECOS is also a significant predictor of EPEB. When ECOS is introduced into the model, the direct effect of GHRM on EPEB becomes non-significant, while the indirect effect remains significant. The findings suggest that green HR practices are more likely to translate into pro-environmental workplace behavior when employees develop commitment to their organization's environmental sustainability objectives. The study highlights the importance of moving beyond the formal implementation of green HR practices toward strengthening employees' involvement in and commitment to organizational sustainability.

Keywords: *green human resource management; organizational sustainability; employee commitment; pro-environmental behavior; green behavior.*

Field: Social Sciences

1. INTRODUCTION

Environmental sustainability has increasingly moved from a specialized environmental-management concern to a broader organizational responsibility. Organizations may establish environmental policies, introduce resource-efficiency measures, or adopt sustainability targets, but the achievement of these objectives ultimately depends, at least partly, on how employees behave in their everyday work. Activities such as reducing unnecessary resource consumption, saving energy, recycling, participating in environmental initiatives, and proposing environmentally responsible improvements can cumulatively contribute to organizational environmental performance (Robertson & Barling, 2013).

This has increased attention to Green Human Resource Management (GHRM), which integrates environmental objectives into conventional human resource practices. GHRM may include environmentally oriented recruitment and selection, training, performance evaluation, rewards, employee development, and involvement (Renwick et al., 2013; Tang et al., 2018). Through such practices, environmental sustainability becomes incorporated into the management of employees rather than remaining solely the responsibility of environmental or sustainability departments.

Previous research provides evidence that GHRM is associated with employee green behavior, but it also indicates that this relationship is not necessarily straightforward. Dumont et al. (2017), for example, showed that GHRM can influence workplace green behavior both directly and through employee-level mechanisms. More recent research similarly emphasizes the importance of understanding the processes through which organizational green practices translate into individual behavior (Ababneh, 2021; Fawehinmi et al., 2024). This suggests that simply introducing green HR practices may not be sufficient; employees must also interpret, accept, and internalize the environmental objectives embedded in these practices.

The present study focuses on Employee Commitment to Organizational Sustainability (ECOS) as one such mechanism. ECOS refers here to employees' identification with, acceptance of, and willingness to contribute to their organization's environmental sustainability objectives. The study therefore addresses the following question: Does perceived GHRM contribute to employee pro-environmental behavior through stronger employee commitment to organizational sustainability?

The study contributes to the existing discussion by distinguishing between what the organization

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does through GHRM, what employees become committed to, and how they subsequently behave at work. Recent evidence from North Macedonia has begun to demonstrate the relevance of sustainability-oriented HRM for employee outcomes. Sofijanova et al. (2026) showed that sustainable HRM practices are associated with green training and green skills and that these employee capabilities are relevant to broader employee engagement. However, less is known about whether green HR practices are translated into employees' everyday pro-environmental behavior and, particularly, about the role of employees' commitment to organizational sustainability in this process. The present study extends this emerging evidence by shifting attention from the development of green competencies and employee engagement to the behavioral consequences of GHRM. It examines whether perceived Green HRM contributes to Employee Pro-Environmental Behavior directly and indirectly through Employee Commitment to Organizational Sustainability.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1. Green Human Resource Management

GHRM represents the integration of environmental objectives into human resource management policies and practices. Renwick et al. (2013) positioned GHRM at the intersection of environmental management and HRM and organized relevant practices through the Ability–Motivation–Opportunity framework. From this perspective, organizations can develop employees' environmental abilities through recruitment and training, strengthen motivation through performance management and rewards, and provide opportunities for environmental involvement.

Tang et al. (2018) subsequently conceptualized GHRM through five major dimensions: green recruitment and selection, green training, green performance management, green pay and reward, and green involvement. Together, these practices communicate that environmental responsibility is expected and valued within the organization.

At the employee level, GHRM is particularly relevant because employees experience sustainability strategy through concrete organizational practices. Training may provide environmental knowledge and skills, performance criteria communicate expected behavior, and rewards or development decisions demonstrate whether environmental contributions are genuinely valued. Consequently, perceived GHRM can shape employees' attitudes toward organizational environmental objectives and their willingness to contribute to them (Dumont et al., 2017).

Evidence from North Macedonia also points to the importance of sustainability-oriented HR practices in shaping employee-level outcomes. Sofijanova et al. (2026) found that sustainable HRM practices were positively associated with green training and green skills, while green training emerged as an important mechanism connecting sustainability-oriented HR practices with employee competencies. Their findings suggest that formal sustainability-oriented HR systems are more likely to produce meaningful employee outcomes when organizational practices are translated into employee-level capabilities and involvement. This supports a broader understanding of sustainable HRM in which organizational practices provide the conditions through which employees develop the competencies and orientation needed to contribute to sustainability objectives.

2.2. GHRM and commitment to organizational sustainability

Organizational commitment generally reflects the relationship employees develop with organizational goals and values. In the sustainability context, commitment implies more than awareness of environmental policies; it reflects employees' willingness to identify with and contribute to environmental objectives.

Green HR practices can contribute to such commitment by repeatedly embedding environmental priorities into employees' organizational experience. When environmental responsibility appears in recruitment, training, evaluation, recognition, and development, sustainability becomes part of how employees understand their role within the organization. Research has increasingly demonstrated that GHRM is associated with employees' environmental commitment and related forms of organizational identification (Alshahrani & Iqbal, 2024).

H1: Perceived Green Human Resource Management positively influences Employee Commitment to Organizational Sustainability.

2.3. Organizational sustainability commitment and pro-environmental behavior

Employee Pro-Environmental Behavior refers to workplace actions intended to reduce negative environmental impacts or contribute to environmental improvement. Such behavior may involve conserving resources, reducing waste and energy use, recycling, participating in environmental programs, and suggesting environmentally beneficial changes (Robertson & Barling, 2013).

Commitment provides a plausible link between organizational sustainability objectives and these

everyday behaviors. Employees who regard their organization's environmental objectives as personally important and feel responsible for contributing to them should be more willing to translate those objectives into action. Commitment therefore represents an attitudinal connection between organizational sustainability expectations and individual workplace behavior.

H2: Employee Commitment to Organizational Sustainability positively influences Employee Pro-Environmental Behavior.

2.4. GHRM, pro-environmental behavior, and the mediating role of commitment

GHRM can also influence green behavior more directly by developing environmental competencies, establishing behavioral expectations, and reinforcing environmentally responsible actions. Dumont et al. (2017) demonstrated that GHRM affects employee workplace green behavior, although the mechanisms differ depending on the type of behavior. Subsequent studies have similarly shown that employee-level mechanisms help explain how GHRM translates into green behavior (Ababneh, 2021; Fawehinmi et al., 2024).

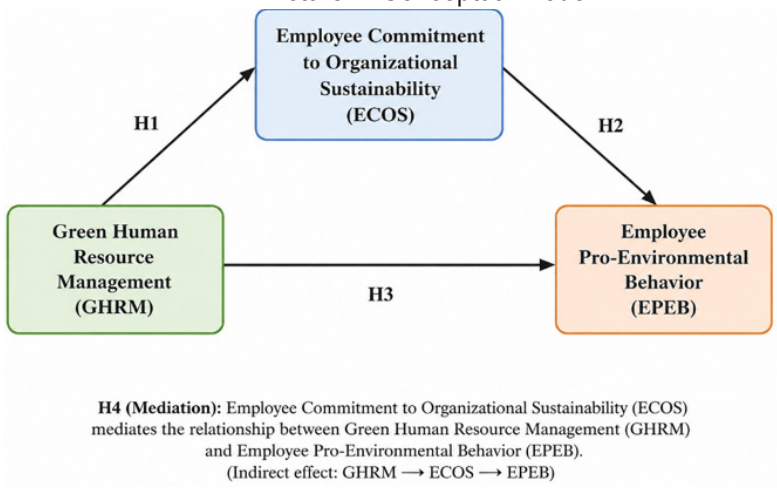
H3: Perceived Green Human Resource Management positively influences Employee Pro-Environmental Behavior.

However, the presence of green HR practices does not necessarily mean that employees internalize their underlying environmental purpose. The proposed model therefore assumes that GHRM contributes more effectively to behavior when employees develop commitment to the environmental sustainability objectives represented by those practices. This distinction separates formal organizational practices from employees' internal acceptance of sustainability goals.

H4: Employee Commitment to Organizational Sustainability mediates the relationship between perceived Green Human Resource Management and Employee Pro-Environmental Behavior.

The proposed model therefore follows the sequence shown in picture 1 below.

Picture 1: Conceptual model



Source: Author

3. METHODS

3.1. Research design and participants

The study employed a quantitative, cross-sectional research design. Data were collected using an anonymous online questionnaire distributed to employed adults working in organizations in North Macedonia. Participation was voluntary, and respondents were informed that the data would be used exclusively for research purposes. Only respondents currently employed in an organization operating in North Macedonia were eligible to participate.

The final sample consisted of 147 respondents from organizations of different sizes and sectors. The sample included non-managerial employees as well as employees occupying supervisory, middle-management, and senior-management positions.

3.2. Measures

The questionnaire consisted of three principal constructs. Perceived Green Human Resource Management (GHRM) was measured using six items adapted from established GHRM measures and the practices identified by Dumont et al. (2017) and Tang et al. (2018). Items assessed employees' perceptions of the integration of environmental objectives into recruitment, training, performance evaluation, rewards,

professional development, and employee goals. Responses were recorded on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Employee Commitment to Organizational Sustainability (ECOS) was assessed using six items capturing employees' identification with, perceived responsibility for, and willingness to contribute to their organization's environmental sustainability objectives. The items were informed by environmental and organizational commitment literature and contextualized specifically to organizational environmental sustainability. Responses ranged from 1 (strongly disagree) to 5 (strongly agree). Employee Pro-Environmental Behavior (EPEB) was measured using seven workplace behaviors adapted from Robertson and Barling (2013). The items covered resource-efficient paper use, recycling, reusable products, energy conservation, participation in environmental initiatives, and environmental suggestions. Because the construct concerns actual behavior rather than attitudes, responses were measured using a five-point frequency scale ranging from 1 (never) to 5 (always). The questionnaire additionally collected information on gender, age, education, organizational tenure, position, organization size, sector, and organization type.

3.3. Data analysis

Data were analyzed using IBM SPSS Statistics. Composite scores for GHRM, ECOS, and EPEB were calculated as the mean of their respective items. Internal consistency was assessed using Cronbach's alpha. Descriptive statistics and Pearson correlation coefficients were calculated to examine the characteristics and initial relationships among the constructs. Regression analysis was then used to test the direct relationships proposed in H1–H3.

The mediating role of ECOS was examined using bootstrapping with 10,000 resamples. Mediation was considered statistically significant when the 95% bootstrap confidence interval for the indirect effect did not include zero.

4. RESULTS

4.1. Sample characteristics

The sample consisted of 147 respondents, all of whom were employed in organizations operating in North Macedonia. Female respondents accounted for 54.4% of the sample, while 44.9% were male and 0.7% preferred not to indicate their gender. In terms of age, the largest group consisted of respondents aged 18–29 years (37.4%), followed by those aged 30–39 years (27.2%). Respondents aged 40–49 represented 15.6% of the sample, those aged 50–59 represented 13.6%, and 6.1% were aged 60 or above.

The sample was relatively well educated, with 37.4% of respondents holding a bachelor's degree and 34.0% a master's degree. Most respondents were non-managerial employees (69.4%), while 10.9% held first-line or supervisory positions, 13.6% were middle managers, and 6.1% were senior managers or owners.

Respondents were employed in organizations of different sizes and across a range of economic sectors. Small organizations with 10–49 employees represented the largest group (32.0%), followed by medium-sized organizations with 50–249 employees (24.5%), large organizations with 250 or more employees (20.4%), and micro-organizations with fewer than 10 employees (19.7%). Most respondents worked in private-sector organizations (62.6%), while 33.3% were employed in the public sector.

Table 1. Sample characteristics

Characteristic	Category	n	%
Gender	Female	80	54.4
	Male	66	44.9
	Prefer not to say	1	0.7
Age	18–29	55	37.4
	30–39	40	27.2
	40–49	23	15.6
	50–59	20	13.6
	60+	9	6.1
Education	Secondary	23	15.6
	Bachelor's degree	55	37.4
	Master's degree	50	34.0
	Doctoral degree	14	9.5
	Other	5	3.4
Position	Non-managerial	102	69.4
	First-line/supervisory management	16	10.9
	Middle management	20	13.6
	Senior management/owner	9	6.1
Organization size	Fewer than 10 employees	29	19.7
	10–49 employees	47	32.0
	50–249 employees	36	24.5
	250+ employees	30	20.4
	Don't know	5	3.4
Organization type	Private	92	62.6
	Public	49	33.3
	NGO/non-profit	4	2.7
	Other	2	1.4

Source: Author's research (2026)

4.2. Descriptive statistics and scale reliability

Composite scores were calculated as the mean of the respective items for each of the three constructs. Perceived Green Human Resource Management (GHRM) had a mean score of 3.07 (SD = 0.96), indicating a moderate level of perceived implementation of green HRM practices. Employee Commitment to Organizational Sustainability (ECOS) had a mean of 2.81 (SD = 1.02), while Employee Pro-Environmental Behavior (EPEB) recorded a mean of 3.03 (SD = 1.11).

Internal consistency was assessed using Cronbach's alpha. All three scales demonstrated satisfactory reliability. The GHRM scale produced a Cronbach's alpha of 0.826, while the ECOS and EPEB scales showed particularly high internal consistency, with coefficients of 0.900 and 0.908, respectively. All coefficients exceeded the commonly applied threshold of 0.70, supporting the reliability of the scales for subsequent analysis.

Table 2. Descriptive statistics and reliability

Construct	Items	Mean	SD	Cronbach's α
Green Human Resource Management (GHRM)	6	3.07	0.96	0.826
Employee Commitment to Organizational Sustainability (ECOS)	6	2.81	1.02	0.900
Employee Pro-Environmental Behavior (EPEB)	7	3.03	1.11	0.908

Note: All constructs were measured on five-point scales. Higher scores indicate higher levels of the construct.

Source: Author's research (2026)

4.3. Correlation analysis

Pearson correlation analysis was performed to examine the relationships among perceived Green Human Resource Management (GHRM), Employee Commitment to Organizational Sustainability (ECOS), and Employee Pro-Environmental Behavior (EPEB). The results are presented in Table 3.

Table 3. Correlations among the study constructs

Construct	1	2	3
1. Green Human Resource Management (GHRM)	1		
2. Employee Commitment to Organizational Sustainability (ECOS)	.377***	1	
3. Employee Pro-Environmental Behavior (EPEB)	.308***	.479***	1

*Note: N = 147. *** p < .001.*

Source: Author's research (2026)

All three constructs were positively and significantly correlated. Perceived GHRM was positively associated with employee commitment to organizational sustainability (r = .377, p < .001) and employee pro-environmental behavior (r = .308, p < .001). The strongest relationship was observed between employee commitment to organizational sustainability and pro-environmental behavior (r = .479, p < .001). These results provide preliminary support for the proposed relationships and justify further examination through regression and mediation analysis.

4.4. Hypothesis testing

Regression analysis was conducted to examine the proposed relationships among GHRM, ECOS, and EPEB.

First, perceived GHRM had a positive and statistically significant effect on employee commitment to organizational sustainability (B = 0.403, p < .001). The model explained 14.2% of the variance in ECOS (R^2 = .142). Thus, H1 was supported.

Second, the total effect of perceived GHRM on employee pro-environmental behavior was positive and statistically significant (B = 0.355, p < .001), with GHRM explaining 9.5% of the variance in EPEB (R^2 = .095). This result provides initial support for H3.

When GHRM and ECOS were simultaneously entered as predictors of employee pro-environmental behavior, the overall model was statistically significant (F = 23.81, p < .001) and explained 24.9% of the variance in EPEB (R^2 = .249). Employee commitment to organizational sustainability had a positive and statistically significant effect on EPEB (B = 0.458, p < .001), supporting H2. In contrast, the direct effect of GHRM decreased substantially and was no longer statistically significant at the 5% level (B = 0.171, p = .060).

Table 4. Regression results

Relationship	B	SE	t	p	R^2	Result
GHRM → ECOS	.403	.082	4.894	<.001	.142	H1 supported
GHRM → EPEB (total effect)	.355	.091	3.892	<.001	.095	H3 supported
ECOS → EPEB[1]	.458	.084	5.431	<.001		H2 supported
GHRM → EPEB[1]	.171	.090	1.899	.060		Direct effect n.s.

Note: N = 147. [1]GHRM and ECOS entered simultaneously; R^2 = .249 for the combined model.

Source: Author's research (2026)

4.5. Mediation analysis

Mediation analysis was conducted to determine whether employee commitment to organizational sustainability mediates the relationship between perceived GHRM and employee pro-environmental behavior.

The indirect effect of GHRM on EPEB through ECOS was positive (B = 0.184). Bootstrap analysis with 10,000 resamples produced a 95% confidence interval ranging from 0.098 to 0.286. Since the confidence interval did not include zero, the indirect effect was statistically significant.

After ECOS was included in the model, the direct effect of GHRM on EPEB decreased from B = 0.355 to B = 0.171 and became statistically non-significant (p = .060). These results indicate that employee commitment to organizational sustainability mediates the relationship between perceived GHRM practices and employee pro-environmental behavior. Therefore, H4 was supported.

Table 5. Mediation effect

Effect	B	95% Bootstrap CI	Result
Total effect: GHRM → EPEB	.355	—	Significant
Direct effect: GHRM → EPEB	.171	—	Not significant (p = .060)
Indirect effect: GHRM → ECOS → EPEB	.184	[.098, .286]	Significant

Source: Author's research (2026)

The findings suggest that the relationship between Green Human Resource Management and employee pro-environmental behavior operates primarily through employees' commitment to organizational sustainability. In other words, GHRM practices appear to be associated with stronger pro-environmental behavior particularly when they are accompanied by employees' commitment to the environmental sustainability objectives of their organization.

5. DISCUSSION

The study examined whether Green Human Resource Management is associated with employees' pro-environmental behavior and, more specifically, whether this relationship operates through employees' commitment to organizational sustainability. The results support the proposed mediating mechanism and provide several observations relevant to both GHRM and organizational sustainability research.

First, perceived GHRM positively predicted Employee Commitment to Organizational Sustainability, supporting H1. This suggests that employees who perceive stronger integration of environmental objectives into HR practices also report stronger commitment to their organization's sustainability objectives. The finding is consistent with the broader argument that HR practices communicate organizational priorities and can influence how employees relate to environmental objectives (Renwick et al., 2013; Tang et al., 2018). It also corresponds with recent evidence linking GHRM with environmental commitment and organizational identification (Alshahrani & Iqbal, 2024).

Second, ECOS had a positive and significant effect on Employee Pro-Environmental Behavior, supporting H2. Employees who reported stronger commitment to organizational environmental sustainability were more likely to report behaviors such as conserving resources, reducing energy consumption, participating in environmental initiatives, and suggesting environmental improvements. This finding reinforces the importance of considering employees not merely as recipients of sustainability policies but as active participants whose commitment can influence whether organizational environmental objectives become reflected in everyday workplace behavior.

The total effect of GHRM on EPEB was also positive and significant, supporting H3 and corresponding with previous evidence linking green HR practices with workplace green behavior (Dumont et al., 2017). However, the most relevant result emerged after ECOS was introduced into the model. The direct effect of GHRM on EPEB decreased and was no longer statistically significant, while the bootstrapped indirect effect through ECOS remained significant. H4 was therefore supported.

This result suggests that the presence of green HR practices alone may not fully explain why employees behave in environmentally responsible ways. Rather, such practices appear to be more effective when employees develop commitment to the environmental objectives that these practices represent. This interpretation is consistent with a growing stream of research showing that GHRM influences employee green behavior through intermediate employee-level processes rather than exclusively through direct effects (Ababneh, 2021; Dumont et al., 2017; Fawehinmi et al., 2024).

The findings suggest that organizations should avoid treating GHRM as a collection of isolated administrative practices. Environmental criteria in recruitment, training, evaluation, rewards, and employee development are likely to be more meaningful when employees understand the sustainability objectives behind them and perceive themselves as contributors to those objectives. Organizations should therefore communicate environmental priorities clearly, involve employees in sustainability initiatives, and connect individual roles with broader organizational environmental goals.

The research, however, has several limitations. The cross-sectional design does not allow causal relationships to be established, even though the proposed directions are theoretically grounded. All constructs were measured through self-reported data, which may introduce common-method and social-desirability bias. The sample was also limited to employees in North Macedonia and was not designed to be statistically representative of the entire employed population. Future research could employ longitudinal designs, obtain behavioral or organizational-level sustainability indicators, and examine whether the proposed relationships differ across sectors, organizational sizes, or institutional contexts.

6. CONCLUSION

This study examined the relationship between Green Human Resource Management and Employee Pro-Environmental Behavior by considering employees' commitment to organizational sustainability as an intervening mechanism. The findings indicate that perceived GHRM is positively associated with sustainability commitment and pro-environmental behavior, while sustainability commitment itself represents an important predictor of environmentally responsible workplace behavior.

The significant indirect effect suggests that the contribution of GHRM to employee green behavior is closely connected to employees' willingness to identify with and support their organization's environmental sustainability objectives. Green HR practices therefore appear to matter not only because they establish environmental expectations but also because they can contribute to stronger employee commitment to those expectations.

For organizations seeking to improve environmental sustainability, the implication is straightforward: formal green HR policies should be accompanied by efforts that make sustainability meaningful to employees and encourage their active contribution. In this sense, organizational sustainability depends not only on introducing green practices, but also on developing employees who are committed to putting them into practice.

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