

Core or periphery? Sustainability signals and Green HRM at UPR

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ABSTRACT

Purpose – Universities may display strong sustainability identities without embedding environmental priorities in their employment systems. This study examines whether Universitas Palangka Raya's (UPR) public sustainability signals are reflected in employee-perceived Green HRM system strength, green psychological climate, and organisational citizenship behaviour for the environment (OCBE).

Design/methodology/approach – A sequential single-case design combined a structured audit of 29 official documents from 11 UPR units with a cross-sectional employee survey ($n = 250$). The survey model was estimated using PLS-SEM, representing system strength through distinctiveness, consistency, and consensus, green psychological climate as mediator, and OCBE through eco-civic engagement, eco-helping, and eco-initiatives.

Finding/Results – The audit identified strong environmental knowledge, infrastructure, and stakeholder engagement but weak public codification of recruitment, appraisal, and reward practices. System strength was positively associated with green psychological climate ($\beta = 0.556$, $p < .001$) and OCBE ($\beta = 0.220$, $p < .001$), while green psychological climate was positively associated with OCBE ($\beta = 0.439$, $p < .001$). The indirect effect was significant ($\beta = 0.244$, $p < .001$), indicating complementary partial mediation.

Originality/Value – The study connects institution-level digital evidence with employee-level process perceptions in a single higher-education case. UPR can strengthen its system by formalising green competencies, development, role-relevant performance criteria, recognition, and transparent communication.

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1. Introduction

Universities are expected to teach sustainability, generate environmental knowledge and model credible institutional practice. Yet a visible portfolio of green projects does not necessarily mean that environmental priorities are embedded in the systems that recruit, develop, evaluate and reward employees. This distinction matters because universities depend on academics and professional staff to convert strategies into routines, research agendas, teaching choices and discretionary environmental action. Green Human Resource Management (GHRM) therefore provides a people-management lens for evaluating whether sustainability is located at the organisational core or remains peripheral to formal employment systems.

GHRM refers to the alignment of human resource practices with environmental objectives through such mechanisms as green recruitment, training, performance management, rewards, job design and employee involvement (Renwick et al., 2013; Ren et al., 2018; Tang et al., 2018). Research generally reports favourable relationships between GHRM and employee attitudes, green behaviour and organisational outcomes. A recent meta-analysis of 172 studies ($N = 54,963$), for example, shows that green performance management and employee involvement are especially relevant to in-role green behaviour, while green performance management and green rewards are relatively important for extra-role green behaviour (Guo et al., 2025). This finding makes the visibility—or absence—of formal performance and reward mechanisms analytically consequential rather than cosmetic.

Higher education is a distinctive GHRM context. Academics exercise discretion in teaching, research and engagement; many environmental contributions exceed formal role requirements; and the institution must coordinate decentralised faculties, centres and external partnerships. Studies in higher education show that GHRM can shape green work engagement, perceived behavioural control, green culture, satisfaction and ecological behaviour (Aboramadan, 2022; Fawehinmi et al., 2024; Noor Faezah et al., 2024). However, most studies begin with employee perceptions collected through questionnaires. They tell us how respondents interpret GHRM, but usually do not first audit the public institutional evidence from which sustainability signals may arise.

This gap is important for Universitas Palangka Raya (UPR), a public university in Central Kalimantan whose institutional identity is closely connected to tropical peatland research, restoration and regional development. UPR publicly declared a Green Campus programme in 2014 and reported early measures such as tree planting, landscaping, a bicycle lane and volunteer involvement (Universitas Palangka Raya, 2016). Its environmental infrastructure includes dedicated peatland knowledge and research units, while recent public communications show intensive collaboration with government, communities, industry and international organisations. Whether these activities form a coherent Green HRM system for lecturers and staff, however, has not been systematically examined.

Digital institutional evidence offers a useful first-stage diagnostic because official pages document structures, programmes, partnerships and formal messages visible to employees and stakeholders. Yet website disclosure cannot establish whether employees perceive a coherent Green HRM system or whether that system shapes behaviour. The present study therefore adds an employee-level Partial Least Squares Structural Equation Modeling (PLS-SEM) phase to the digital audit, linking communicated institutional signals to perceived HRM

system strength, green psychological climate and OCBE (Connelly et al., 2011; Dumont et al., 2017).

The study combines GHRM content with Bowen and Ostroff's (2004) HRM system-strength framework. A strong system communicates priorities through distinctiveness, consistency and consensus. Green psychological climate should then provide the shared interpretive mechanism through which employees translate those signals into discretionary eco-initiatives, eco-helping and eco-civic engagement. The study addresses four research questions: (1) What types of sustainability and Green HRM evidence are publicly visible across UPR's official digital channels? (2) How balanced is the evidence across GHRM practice domains and the HRM system-strength dimensions of distinctiveness, consistency and consensus? (3) Do employee-perceived Green HRM system strength and green psychological climate explain OCBE at UPR? (4) Does green psychological climate mediate the relationship between Green HRM system strength and OCBE?

The study contributes in three ways. First, it provides a reproducible digital evidence audit of sustainability and people-management signals. Second, it connects institution-level communication with employee-level perceptions while respecting the difference between public evidence and psychological climate. Third, it tests a mechanism in which Green HRM system strength influences OCBE both directly and indirectly through green psychological climate in an Indonesian peatland university.

2. Literature Review & Hypothesis Development

2.1 Green HRM as an institutional people-management architecture

GHRM translates environmental strategy into employment practices that build ability, motivation and opportunity for green action. Ability-enhancing practices develop environmental competence through recruitment, selection, induction and training. Motivation-enhancing practices connect environmental priorities to appraisal, recognition, compensation and career consequences. Opportunity-enhancing practices provide participation channels, autonomy, teams, information and resources for employees to contribute (Renwick et al., 2013). These bundles are analytically separable but mutually reinforcing: training without job opportunity may not change behaviour, while expectations without competence or incentives may be interpreted as symbolic.

Tang et al. (2018) operationalised GHRM through green recruitment and selection, training, performance management, pay and reward, and involvement. This practice-based view remains useful for an institutional audit because it creates observable questions: Does the university publicly state green competencies for new hires? Are lecturers and staff offered recurring environmental development? Are green responsibilities embedded in work roles? Are environmental criteria evaluated and rewarded? Are employees invited into environmental programmes and decision processes?

Employee involvement is necessary but insufficient. It may represent formal participation, discretionary volunteering or ordinary academic engagement. Green job design may also appear through dedicated centres, laboratories, field sites, research schemes or programme mandates even when individual job descriptions are not public. Accordingly, this study distinguishes broad environmental participation from strict evidence of core HR practices. It

also treats general recognition as 'recognition-adjacent' unless the source explicitly links the reward to environmental criteria. This conservative rule avoids inflating GHRM maturity.

2.2 HRM system strength: from content to communication process

Bowen and Ostroff (2004) argue that HR systems influence collective responses when they create a strong situation. Distinctiveness concerns visibility, understandability, legitimacy and relevance; consistency concerns stable, valid and instrumental messages; consensus concerns agreement among key decision makers and perceived fairness. These meta-features explain how HR messages become salient and similarly interpreted. Subsequent research emphasises that system strength is a communication process rather than merely a count of practices (Ostroff & Bowen, 2016; Heffernan et al., 2022; Meier-Barthold, 2023).

This distinction is crucial in a decentralised university. Environmental messages may be highly distinctive because they are tied to peatland expertise and visible centres. They may show consensus when senior leaders, faculties, government, communities and external partners participate. Yet they may remain inconsistent as HR signals if recruitment, appraisal and rewards do not repeatedly reinforce the same expectations. A university can therefore be environmentally active and publicly credible in research, while still presenting a weak or incomplete Green HRM architecture to employees.

The system-strength framework is applied at two explicitly separated levels. In the digital phase, public pages indicate whether environmental messages are visible, structurally anchored, repeated or jointly endorsed; these document scores are diagnostic audit codes, not psychometric measures. In the survey phase, employees report perceived distinctiveness, consistency and consensus using a validated measurement logic. Keeping the levels separate allows institutional communication to be compared with, but not substituted for, employee interpretation.

2.3 Sustainability signalling and online disclosure in universities

Signalling theory explains how organisations reduce information asymmetry by communicating observable cues about otherwise difficult-to-assess qualities (Connelly et al., 2011). University websites signal priorities to employees, students, partners, regulators and communities. Formal strategies, dedicated units, recurring programmes and quantified outcomes can be more credible signals than isolated ceremonial events because they are costlier, more specific and more readily verified.

However, signalling creates a risk of loose coupling: highly visible activity may not align with formal internal systems or measured performance. Gugercin et al. (2026) found that stakeholder-oriented sustainability signals were common across Turkish higher education institutions, whereas more formalised digital signals were adopted less consistently. Ramírez (2025) similarly demonstrates that online sustainability disclosure varies across institutional characteristics. These findings support an audit that separates communication intensity, institutional structure and formal HR integration.

For UPR, this distinction is particularly relevant because environmental work is central to its regional and scientific identity. Public evidence reveals where that identity is institutionally anchored, while the employee survey tests whether Green HRM messages are experienced as strong enough to shape climate and behaviour. The sequential design therefore distinguishes sustainability visibility from institutional people-management and then connects the latter to employee outcomes.

2.4 Analytical framework and hypotheses

The analytical framework has two linked stages. Stage 1 classifies the substantive content and system-strength quality of public institutional evidence. Stage 2 tests whether employees perceive a distinctive, consistent and consensual Green HRM system and whether this perception predicts OCBE through green psychological climate. Perceived HRM system strength was operationalised from the distinctiveness, consistency and consensus dimensions developed by Delmotte et al. (2012). Green psychological climate follows Dumont et al. (2017), while OCBE captures eco-initiatives, eco-helping and eco-civic engagement (Boiral & Paillé, 2012).

A stronger Green HRM system makes environmental expectations visible, coherent and legitimate. Such signals should directly encourage discretionary environmental behaviour and should also shape a shared green psychological climate that guides everyday choices.

H1. Green HRM system strength is positively associated with OCBE.

H2. Green HRM system strength is positively associated with green psychological climate.

H3. Green psychological climate is positively associated with OCBE.

H4. Green psychological climate mediates the relationship between Green HRM system strength and OCBE.

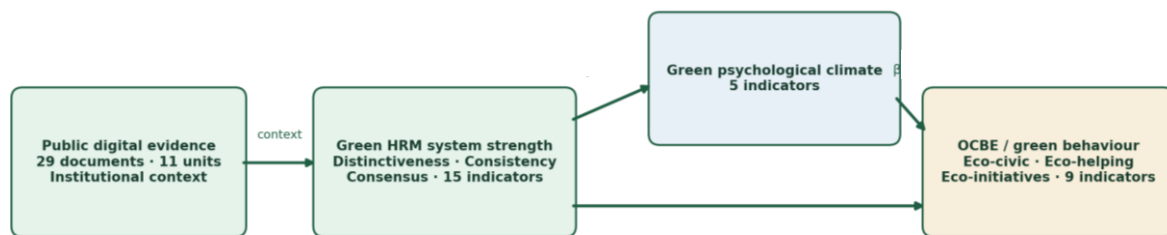


Figure 1. Analytical pathway from visible sustainability signals to embedded Green HRM

3. Methodology

3.1 Research design and case boundary

The single-case boundary is consistent with case research that combines multiple forms of evidence to examine an institutionally bounded process (Eisenhardt, 1989). The study uses a sequential single-case design. Phase 1 is a structured web-content analysis of UPR and its official subdomains. Phase 2 is a cross-sectional employee survey analysed with Partial Least Squares Structural Equation Modeling (PLS-SEM). This sequence is appropriate because the digital audit identifies the intended and publicly communicated Green HRM context, whereas the survey tests employees' perceptions of system strength, green psychological climate and OCBE. The two forms of evidence are integrated in interpretation but kept separate in measurement.

The unit of analysis in Phase 1 is an official web document describing an institutional structure, programme, partnership, resource or recognition mechanism connected to environmental sustainability and employees. The retrieval cut-off was 23 August 2026, and event dates span 1996–2026. In Phase 2, the unit of analysis was the individual UPR employee. A total of 269 responses were received. After data screening, 250 usable responses were retained for the PLS-

SEM analysis. A total of 19 responses were excluded because of prespecified screening criteria such as incomplete responses, and duplicate submissions.

3.2 Digital search, screening, and corpus construction

The search, screening, and coding procedure followed structured content-analysis principles (Neuendorf, 2017). Searches combined domain restrictions for upr.ac.id and UPR subdomains with Indonesian and English terms. Core concepts included green campus, lingkungan, ramah lingkungan, berkelanjutan/sustainability, gambut/peat, perubahan iklim, pelatihan/training, dosen/lecturer, penghargaan/recognition, kinerja/performance, recruitment, reward, LP3MP, LPPM, PPIIG and CIMTROP. Searches were expanded through site navigation and links to related official pages.

A document was included when it: (1) appeared on an official UPR or unit page; (2) identified a UPR unit, lecturer/staff role, facility or institutional action; (3) contained evidence relevant to sustainability, environmental capability or a Green HRM domain; and (4) had a stable accessible URL. Duplicates, other universities, purely bibliographic research outputs without institutional action, student-only activities without a lecturer or institutional mechanism, and unverifiable social-only posts were excluded. The final purposive corpus comprised 29 documents from 11 units. It is a saturation-oriented diagnostic corpus, not a complete census of every UPR page.

Table 1. Search and audit protocol

Component	Operational decision
Case	Universitas Palangka Raya and official institutional subdomains
Retrieval date	23 August 2026
Temporal coverage	Events dated 1996–2026; pages retained only when publicly accessible at retrieval
Search logic	Domain-restricted Indonesian/English sustainability, peatland, lecturer, HR development, performance, reward and institutional-unit terms
Inclusion	Official, identifiable UPR action/unit, sustainability or Green HRM relevance, stable URL
Exclusion	Duplicates; other institutions; article-only bibliographic records; student-only items without an institutional/lecturer mechanism; social-only or unverifiable content
Final corpus	29 documents, 11 units
Inference boundary	Public digital visibility; no inference about employee perception, prevalence, effectiveness or causality

3.3 Participants

The target population comprised lecturers and professional/administrative staff employed by Universitas Palangka Raya (UPR), as these employee groups are subject to the university's human-resource practices and institutional sustainability initiatives. Participants were recruited using a non-probability convenience sampling approach.

Potential participants were approached through faculty/unit communication groups and direct distribution through administrative units. Employees were eligible to participate if they

were employed by UPR as lecturers or professional/administrative staff during the data-collection period.

Data were collected between April and May 2026 using an online questionnaire. A total of 400 employees were invited to participate, of whom 269 returned the questionnaire, yielding a response rate of 67.3%. After data screening, 19 responses were excluded, resulting in 250 usable responses and a usable-response rate of 62.5%.

Table 2. Respondents Characteristics

Category	n	%
Employee type		
Lecturer	108	43%
Professional/administrative staff	142	57%
Gender		
Male	88	35%
Female	162	65%
Age		
18-35	76	37,2%
36-53	157	62,8%
54-70	17	7%

3.4 Coding framework and measures

The employee questionnaire contained 29 reflective indicators. Perceived Green HRM system strength was measured using 15 indicators covering distinctiveness, consistency, and consensus, adapted from Delmotte et al. (2012). Green psychological climate was measured using five indicators based on Dumont et al. (2017), while OCBE was measured using nine indicators representing eco-civic engagement, eco-helping, and eco-initiatives based on Boiral and Paillé (2012). All items were measured using a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The original measurement items were translated from English into Indonesian. The Indonesian version was subsequently back-translated into English by a higher-education management professionals with expertise in English and Green HRM. Differences between the original and back-translated versions were reviewed and resolved to ensure conceptual equivalence. The questionnaire was then pretested with five individuals who matched the target respondent profile to assess item clarity and comprehensibility.

The digital audit relied exclusively on public institutional information. Distributed directly to the target sample, the employee survey included a verified statement ensuring voluntary participation, informed consent, and absolute anonymity and confidentiality.

Table 3. Deductive codebook

Layer	Code	Decision rule / anchor
Evidence cluster	Institutional architecture	Formal unit, strategy, portal, facility or durable institutional mandate
Evidence cluster	Capability building	Training, lecture, workshop, curriculum/programme profile or competence-development action

Layer	Code	Decision rule / anchor
Evidence cluster	Research and innovation	Research, demonstration, knowledge production, funding or applied environmental innovation
Evidence cluster	Community/stakeholder engagement	Joint action with government, industry, schools, communities, NGOs or international partners
Evidence cluster	Recognition/reinforcement	Recognition, funding, incentive or symbolic/material reinforcement
Evidence cluster	Operational eco-practice	Direct greening, resource-use or campus operational measure
GHRM practice	Training and development	Explicit environmental learning for UPR lecturers/staff or formal capability mechanism connected to their role
GHRM practice	Employee involvement	Lecturer/staff participation in environmental programme, research, outreach, decision or partnership
GHRM practice	Job design/infrastructure	Dedicated role-enabling unit, facility, field site, platform or programme architecture
GHRM practice	Rewards	Recognition/compensation explicitly contingent on environmental contribution
GHRM practice	Performance appraisal	Environmental criterion explicitly embedded in employee performance assessment
GHRM practice	Recruitment/selection	Environmental competence or commitment explicitly used in hiring/selection/onboarding
System strength	Distinctiveness	1 = rhetorical/adjacent; 2 = specific programme/event; 3 = formal, structurally visible or highly salient
System strength	Consistency	1 = isolated/ambiguous; 2 = specific and internally coherent; 3 = repeated, formalised or cross-temporally reinforced
System strength	Consensus	1 = single/unclear actor; 2 = recognised institutional actors; 3 = cross-level or multi-stakeholder endorsement

3.5 Data analysis

Phase 1 descriptive counts and percentages were generated from the coded corpus using a reproducible script. Phase 2 used PLS-SEM to estimate the proposed mediation model involving multidimensional constructs and to examine the structural relationships among Green HRM system strength, green psychological climate, and OCBE. Measurement quality was evaluated through outer loadings, Cronbach's alpha, rho_A, composite reliability, AVE, and indicator Variance Inflation Factor (VIF). Structural inference used bootstrapped coefficients, standard errors, t statistics, and p values; p = .000 in software output is reported as p < .001. R² and adjusted R² were used to assess explained variance, while f² was used to assess the magnitude of structural effects. Mediation was evaluated from the bootstrapped specific indirect effect and interpreted in relation to the remaining direct effect (Hair et al., 2019, 2020; Nitzi et al., 2016).

4. Result and Discussion

4.1 Results

4.1.1 Portfolio of public digital evidence

The final corpus contains 29 documents from 11 identifiable units. The largest primary clusters are institutional architecture and capability building (seven documents each; 24.1% each), followed by community and stakeholder engagement (six; 20.7%) and research and innovation (five; 17.2%). Recognition and reinforcement accounts for three documents (10.3%), while only one document (3.4%) is primarily operational eco-practice. The portfolio therefore presents UPR mainly as a knowledge, infrastructure and partnership actor rather than as a campus-operations or people-management system.

Table 4. Distribution of primary evidence clusters

Primary cluster	n	%	Dominant manifestation
Institutional architecture	7	24.1%	Dedicated units, facilities, formal platforms and strategic identity
Capability building	7	24.1%	Environmental teaching, training, lectures and programme positioning
Community and stakeholder engagement	6	20.7%	Multi-actor outreach, consultation, KKN and formal cooperation
Research and innovation	5	17.2%	Peatland/climate research, demonstrations and research partnerships
Recognition and reinforcement	3	10.3%	General staff recognition and external support for environmental knowledge
Operational eco-practice	1	3.4%	Campus greening/tree planting as the primary focus

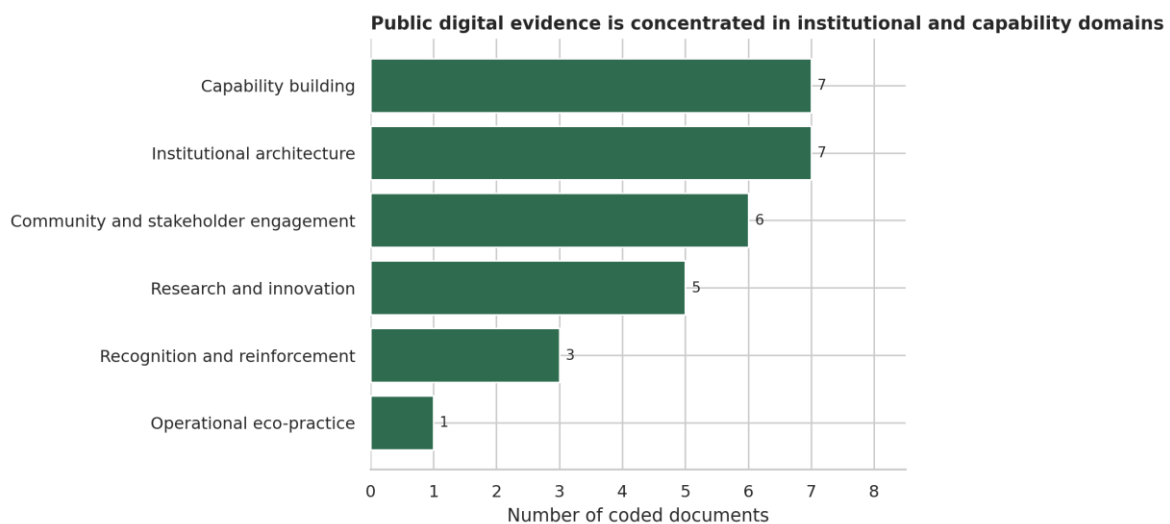


Figure 2. Public digital evidence by primary cluster

Source: Author's coding of 29 official UPR web documents. Primary clusters are mutually exclusive.

The consultation and KKN figures are drawn directly from the corresponding official institutional reports (PPIIG Universitas Palangka Raya, 2025; Universitas Palangka Raya,

2025). Several high-information cases demonstrate the depth of the environmental portfolio. CIMTROP represents durable peatland research, education and community-service infrastructure dating to 1996. The Green Campus page documents the 2014 declaration and early operational initiatives. PPIIG provides a dedicated institutional platform for peatland knowledge and multi-stakeholder collaboration. In 2025, a public consultation on Ex-Mega Rice Project restoration involved 129 participants, while UPR's KKN programme involved 2,325 students and 155 field supervisors across 155 villages under a sustainable-future theme. These are distinctive and consensual signals because they connect leadership, academics, public agencies, communities and external partners.

Table 5. Selected high-information digital evidence

Year	Unit	Evidence	Green HRM / signal implication
1996	CIMTROP	Dedicated peatland research, education and community-service unit	Durable green job infrastructure; long-term identity
2014	UPR	Green Campus declaration: tree planting, landscaping, bicycle lane and volunteers	Visible environmental identity and participation
2023	PPIIG	Tropical Peat Information Center inaugurated with conservation partners	Knowledge infrastructure and cross-actor legitimacy
2024	PPIIG	Climate resilience and forest-fire governance research dissemination	Lecturer involvement and stakeholder consensus
2025	UPR-IFP	Formal cooperation spanning education, research, service, conservation and a training-research centre	Capability, opportunity and formal reinforcement
2025	PPIIG	Ex-MRP restoration consultation with 129 participants	Broad external consensus and public accountability
2025	UPR/LPP M	KKN: 2,325 students, 155 supervisors and 155 villages	Large-scale lecturer-enabled sustainability engagement
2025	PPIIG	Repeated recognition for support staff	Recognition infrastructure exists, but criteria are not explicitly green

4.1.2 HRM system-strength signals

At document level, distinctiveness, consistency and consensus each average 2.31 on the three-point audit scale (median = 2.0). The identical descriptive means should not be interpreted as psychometric equivalence; they result from the coding profile of this small evidence corpus. Qualitative inspection is more informative. Distinctiveness is strongest where UPR's peatland mandate is embodied in named units, facilities and formal collaborations. Consensus is strongest in public consultations, institutional partnerships and large-scale service programmes. Consistency is visible in repeated peatland research and engagement across years, but is weaker when the lens is narrowed to formal employment practices.

Table 6. Interpretive HRM system-strength profile

Dimension	Mean	Median	Strongest visible manifestation	Principal limitation
Distinctiveness	2.31	2.0	Green Campus identity; CIMTROP/PPIIG; peatland facilities and named programmes	Environmental expectations for employees are not consistently specified in HR documents
Consistency	2.31	2.0	Repeated peatland research, education, outreach and partner activity	Few explicit links to recruitment, appraisal or reward create incomplete HR reinforcement
Consensus	2.31	2.0	Leadership, faculties, communities, government, industry and international partners	Public stakeholder agreement cannot establish shared lecturer perceptions

The system-strength audit thus reveals a content–process asymmetry. UPR communicates environmental priorities through salient structures and collaborative action, but the public people-management content that would make those priorities consequential for all employees is incomplete. The university’s signals may be credible to external partners and environmentally active academics while remaining less instrumental for lecturers whose roles are not directly connected to peatland units or sustainability programmes.

4.1.3 Strict Green HRM practice visibility

Multi-label coding produces a sharply uneven GHRM profile. Employee involvement appears in 23 of 29 documents (79.3%), usually through research, teaching, outreach, workshops, partnerships or supervisory roles. Green job design/infrastructure appears in 10 documents (34.5%), reflecting dedicated centres, facilities, research sites and sustainability-oriented programme architecture. Explicit green training and development appears in five documents (17.2%). No document provides explicit evidence of environmental criteria in recruitment and selection, employee performance appraisal, or rewards and compensation.

Table 7. Strict Green HRM practice visibility

Practice domain	n	% of corpus	Interpretation
Green employee involvement	23	79.3%	Academic, research, service and partnership participation
Green job design/infrastructure	10	34.5%	Dedicated units/facilities enable green work; individual role expectations are less visible
Green training and development	5	17.2%	Selected collaborative capacity building; not a recurring university-wide employee system
Green rewards	0	0.0%	None explicit; three recognition-adjacent items used general criteria
Green performance appraisal	0	0.0%	No green KPI or appraisal criterion located

Practice domain	n	% of corpus	Interpretation
Green recruitment and selection	0	0.0%	No environmental competency or commitment criterion located

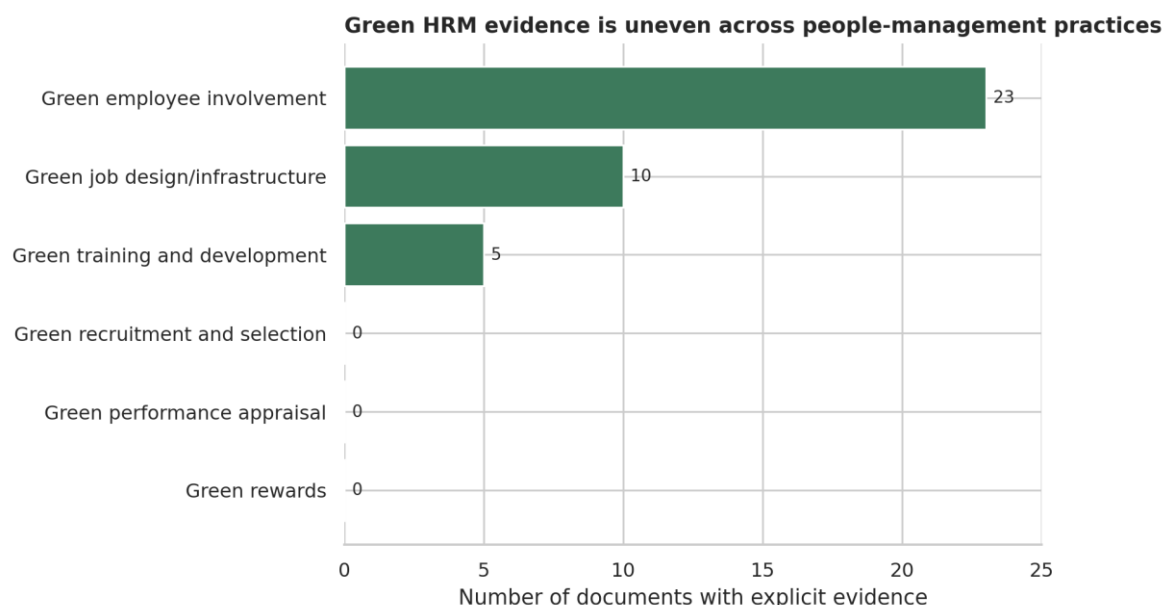


Figure 3. Uneven visibility of strict Green HRM practices

Source: Author's multi-label coding. Counts do not sum to 29. Zero means no explicit public evidence was located; it does not prove that a practice is absent internally.

The zero counts require careful interpretation. UPR's LP3MP page describes formal lecturer/staff development and performance-monitoring functions, but the public page does not specify environmental criteria. Similarly, PPIIG recognised security, cleaning and support staff in 2024 and 2025, demonstrating that recognition mechanisms exist, but the reported criteria emphasised dedication and workplace support rather than environmental contribution. Conservative coding therefore classifies these items as HR infrastructure or recognition-adjacent evidence, not as green appraisal or green rewards.

4.1.4 Temporal visibility

The event-year profile includes long-standing institutional foundations but is dominated by recent pages. Fifteen documents concern 2025 and two concern 2026, compared with earlier anchor events in 1996, 2014 and 2015. The rise after 2023 indicates intensified visible communication in the accessible archive, particularly through PPIIG; it cannot be read as a longitudinal improvement in environmental performance because website archiving, publication practices and unit activity changed over time.

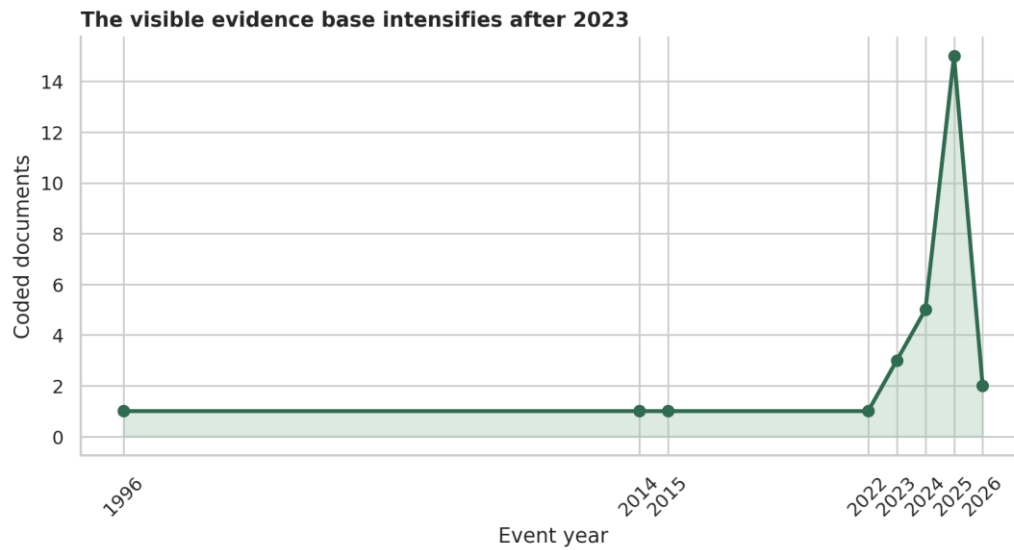


Figure 4. Event-year distribution of accessible public evidence

Source: Author's coding. This figure represents archive visibility and communication intensity, not environmental performance or causal change.

4.1.5 Measurement model

The employee-level model used 250 usable cases and 29 indicators. Outer loadings ranged from 0.640 to 0.768 for Green HRM system strength, 0.686 to 0.833 for OCBE and 0.799 to 0.855 for green psychological climate. Eight indicators were slightly below the conventional 0.708 reference point, but they were retained because the corresponding composites-maintained AVE above 0.50, reliability above 0.70 and theoretically meaningful domain coverage (Hair et al., 2019, 2020).

Table 8. Indicator loadings and collinearity diagnostics

Indicator	Domain / construct	Outer loading	VIF
CNS1	Consensus / HRM system strength	0.768	2.734
CNS2	Consensus / HRM system strength	0.724	2.335
CNS3	Consensus / HRM system strength	0.640	1.968
CNS4	Consensus / HRM system strength	0.724	2.191
CNS5	Consensus / HRM system strength	0.681	1.983
CON1	Consistency / HRM system strength	0.699	2.031
CON2	Consistency / HRM system strength	0.720	2.256
CON3	Consistency / HRM system strength	0.719	2.264
CON4	Consistency / HRM system strength	0.729	2.150
CON5	Consistency / HRM system strength	0.748	2.401
DIS1	Distinctiveness / HRM system strength	0.718	2.018
DIS2	Distinctiveness / HRM system strength	0.727	2.242
DIS3	Distinctiveness / HRM system strength	0.723	2.245
DIS4	Distinctiveness / HRM system strength	0.681	2.089

Indicator	Domain / construct	Outer loading	VIF
DIS5	Distinctiveness / HRM system strength	0.726	2.162
ECE1	Eco-civic engagement / OCBE	0.737	2.174
ECE2	Eco-civic engagement / OCBE	0.686	1.869
ECE3	Eco-civic engagement / OCBE	0.752	2.099
EH1	Eco-helping / OCBE	0.698	1.877
EH2	Eco-helping / OCBE	0.696	1.785
EH3	Eco-helping / OCBE	0.705	1.943
EI1	Eco-initiatives / OCBE	0.833	2.660
EI2	Eco-initiatives / OCBE	0.786	2.221
EI3	Eco-initiatives / OCBE	0.783	2.184
GPC1	Green psychological climate	0.826	2.154
GPC2	Green psychological climate	0.819	1.996
GPC3	Green psychological climate	0.855	2.392
GPC4	Green psychological climate	0.837	2.179
GPC5	Green psychological climate	0.799	1.909

Source: PLS-SEM output. All VIF values are below 3.0; loadings below 0.708 are retained on reliability, AVE and content-coverage grounds.

Table 9. Construct reliability and convergent validity

Construct	Cronbach's α	rho_A	rho_C	AVE	Assessment
Green HRM system strength (DIS)	0.932	0.933	0.940	0.512	Adequate
OCBE / employee green behaviour (E)	0.898	0.903	0.917	0.553	Adequate
Green psychological climate (GPC)	0.885	0.886	0.916	0.685	Adequate

Note: Reliability coefficients exceed 0.70 and AVE exceeds 0.50 for every construct.

Internal consistency and convergent validity were supported, with reliability coefficients exceeding 0.70 and AVE exceeding 0.50 for all constructs. Indicator VIF values ranged from 1.785 to 2.734, indicating no problematic item collinearity.

Discriminant validity beyond the criteria reported above was not further verified using HTMT, and predictive relevance was not assessed via $Q^2/PLSpredict$; these checks were considered outside the scope of the present analysis, and no claims of discriminant validity via HTMT or out-of-sample predictive relevance are made in this study.

4.1.6 Structural model and mediation

The endogenous constructs show moderate explanatory power for an employee-behaviour model. Green HRM system strength explains 31.0% of the variance in green psychological climate. Together, system strength and green psychological climate explain 34.9% of the variance in OCBE. The structural equations are:

$$GPC = 0.556(DIS) + \zeta; R^2 = 0.310$$

$$E = 0.220(DIS) + 0.439(GPC) + \zeta; R^2 = 0.349$$

Table 10. Explained variance of endogenous constructs

Endogenous construct	R ²	Adjusted R ²	Variance explained
Green psychological climate (GPC)	0.310	0.307	31.0%
OCBE / employee green behaviour (E)	0.349	0.344	34.9%

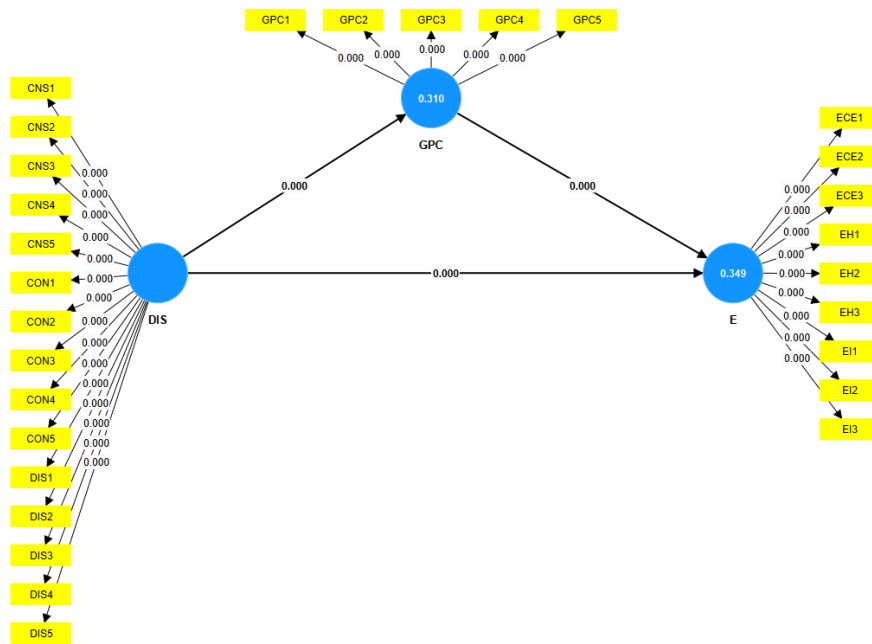


Figure 5. Estimated PLS-SEM structural model

Source: Author-supplied PLS-SEM output. All displayed structural effects are significant at $p < .001$.

Table 11. Direct effects and hypothesis tests

Hyp.	Path	O	M	STDEV	t	p	Decision
H1	DIS → E	0.220	0.223	0.059	3.701	<0.001	Supported
H2	DIS → GPC	0.556	0.560	0.040	13.909	<0.001	Supported
H3	GPC → E	0.439	0.439	0.060	7.354	<0.001	Supported

Table 12. Specific indirect and total effects

Effect	Relationship	O	M	STDEV	t	p
Specific indirect	DIS → GPC → E	0.244	0.246	0.039	6.305	<0.001
Total	DIS → E	0.465	0.469	0.049	9.575	<0.001
Total	DIS → GPC	0.556	0.560	0.040	13.909	<0.001
Total	GPC → E	0.439	0.439	0.060	7.354	<0.001

Table 13. Path Model

Path	β	t	p	f ²
HRM system strength → OCBE	0.220	3.701	<0.001	0.051
HRM system strength → GPC	0.556	13.909	<0.001	0.447
GPC → OCBE	0.439	7.354	<0.001	0.204

In addition to path significance, effect sizes were assessed using f^2 . The effect of Green HRM system strength on green psychological climate was $f^2 = 0.447$, while its direct effect on OCBE was $f^2 = 0.051$. Green psychological climate had an effect size of $f^2 = 0.204$ on OCBE.

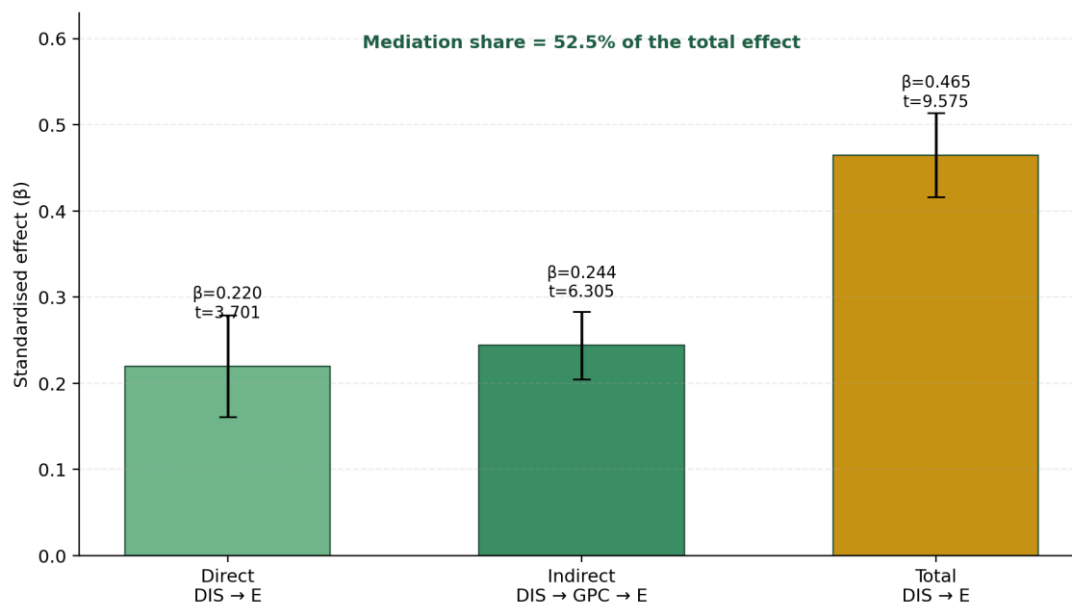


Figure 6. Decomposition of the effect of Green HRM system strength on OCBE

Source: Author-supplied PLS-SEM output. Error bars represent the reported bootstrap standard deviations.

All three direct paths are positive and significant, supporting H1–H3. The specific indirect effect of Green HRM system strength on OCBE through green psychological climate is also positive and significant ($\beta = 0.244$, $t = 6.305$, $p < .001$), supporting H4. Because the direct effect remains significant and has the same sign, the result indicates complementary partial mediation. The indirect effect represents approximately 52.5% of the reported total effect ($0.244/0.465$). The minor difference between the component sum ($0.220 + 0.244 = 0.464$) and the reported total effect (0.465) is attributable to three-decimal rounding.

4.2 Discussion

4.2.1 A knowledge-rich but HRM-thin configuration

The combined evidence shows a consequential tension. Publicly, UPR is knowledge-rich and collaboration-intensive but HRM-thin: environmental identity is visible through peatland centres, partnerships and lecturer participation, whereas explicit recruitment, appraisal and reward criteria are difficult to locate. At employee level, however, perceived Green HRM system strength is meaningfully associated with both green psychological climate and OCBE. The survey therefore suggests that employees respond not only to the existence of green activities but to whether organisational messages are distinctive, consistent and consensual.

The structural results clarify the mechanism. System strength has a direct association with OCBE ($\beta = 0.220$) and a larger indirect route through green psychological climate ($\beta = 0.244$). This complementary partial mediation means that clear and coherent Green HRM messages can encourage discretionary action directly, while a shared perception that environmental sustainability is genuinely valued supplies an additional interpretive pathway. Green psychological climate is therefore not a substitute for formalisation; it is one way formalisation acquires behavioural meaning.

This pattern is consistent with evidence that green psychological climate transmits the effects of Green HRM practices into employee green behaviour (Jnaneswar, 2023; Zafar & Suseno, 2024). It also aligns with the positive relationship between Green HRM practices and OCBE reported by Dwumah et al. (2025). The present result differs in analytical emphasis: it tests the communication strength of the Green HRM system, rather than only the presence of individual practices, within a public university.

This interpretation extends higher-education sustainability signalling research by linking communication content to employee perception and behaviour. The digital audit prevents the survey from being interpreted in an institutional vacuum, while the PLS-SEM results prevent website visibility from being mistaken for employee experience. Together, the phases indicate that visible environmental identity and employee-perceived system strength are related but analytically distinct layers of institutionalisation.

4.2.2 Theoretical implications

First, the study separates environmental identity from Green HRM architecture. Sustainability research often treats dedicated centres, rankings, projects or disclosures as evidence of institutional commitment. GHRM theory asks a harder question: how does that commitment enter the employment relationship? The UPR case shows that environmental identity can be distinctive and consensual even when recruitment, performance and reward content is not visible.

Second, the study applies HRM system-strength theory across institution-level communication and employee-level perception without collapsing their levels of analysis. Public documents reveal the intended and communicated context; the survey shows that perceived distinctiveness, consistency and consensus are positively associated with green psychological climate. This empirical connection advances Bowen and Ostroff's (2004) strong-situation logic in a higher-education sustainability setting.

Third, the findings illuminate why missing performance and reward content matters. Guo et al.'s (2025) meta-analysis identifies green performance management, involvement and rewards among the practices most relevant to in-role and extra-role green behaviour. UPR's profile is strongest in involvement but weakest precisely in the practices that communicate instrumentality and valued consequences. This imbalance offers a mechanism-level explanation for how an institution may depend on environmentally committed volunteers and specialists without yet creating a system-wide strong situation.

Fourth, the study supplies direct evidence for the bridge to OCBE research. The nine OCBE indicators capture eco-civic engagement, eco-helping and eco-initiatives, while the significant direct and indirect paths show that both system strength and green psychological climate matter. The result extends earlier OCBE work (Boiral & Paillé, 2012; Boiral et al., 2015) by

identifying an HR communication process and a climate mechanism within a public university.

4.2.3 Practical implications

UPR does not need to build its environmental identity from zero. The strategic task is to convert existing scientific legitimacy and partnership capacity into a coherent people-management architecture. The most efficient approach is a staged institutionalisation roadmap that uses existing governance channels and avoids creating a parallel bureaucracy.

Table 13. Green HRM institutionalisation roadmap for UPR

Horizon	Workstream	Priority actions	Auditable output
0–6 months	Governance and baseline	Designate a cross-unit Green HRM steering group; validate this evidence audit; map existing BKD/SKP, induction, training, award and recruitment processes	Approved baseline and named process owners
6–12 months	Competency and development	Define context-specific green competencies; add sustainability orientation to onboarding; create recurring lecturer/staff modules using CIMTROP/PPIIG expertise	Competency framework; participation/completion data
6–18 months	Opportunity and work design	Formalise faculty green teams, seed grants, workload recognition and access to field/laboratory/community platforms	Projects, cross-faculty participation and documented workload support
12–24 months	Performance and recognition	Pilot lawful, role-relevant green indicators in performance conversations; establish transparent awards and small grants tied to verifiable contributions	Pilot coverage, criteria, award decisions and evidence of fairness
12–24 months	Recruitment and leadership	Use environmental competencies in relevant job profiles, selection questions and leadership expectations without imposing irrelevant criteria on every role	Revised role profiles and documented selection/onboarding use
Annual	Measurement and disclosure	Publish a sustainability–GHRM dashboard and run an anonymous lecturer/staff survey of system strength, green psychological climate and OCBE	Public dashboard plus employee-level trend data

Implementation should preserve role relevance. A peatland researcher, administrative officer, laboratory technician and lecturer in a non-environmental discipline will not require identical green indicators. System strength is not achieved by uniform metrics alone; it depends on clear strategic meaning, fair procedures, managerial agreement and credible links between roles and environmental objectives. Consultation with faculties and support units is therefore necessary before any appraisal or reward pilot.

Digital governance should accompany HR formalisation. The current evidence is dispersed across UPR and unit websites. A central dashboard could link policies, development opportunities, research and service outputs, campus operations, participation data and recognised contributions. Such a platform would improve visibility and auditability while

reducing the risk that high communication volume is mistaken for system-wide implementation.

5. Conclusion and Suggestion

This study set out to examine whether the sustainability identity projected through the institution's digital communication is matched by an embedded human resource management architecture, or whether it remains confined to visible messaging. The evidence points to a "knowledge-rich but HRM-thin" pattern: employee perception of the institution's environmental commitments meaningfully shapes environmental awareness and pro-environmental behavior, yet the structural HRM mechanisms needed to institutionalize these commitments are not yet fully in place. All three hypothesized paths in the sequential model received empirical support, reinforcing the argument that survey-based perception functions as evidentiary confirmation rather than the study's central theoretical contribution. The core theoretical contribution instead lies in the content-process distinction itself: a visible sustainability identity and an institutionalized one are not the same thing, and treating them interchangeably risks overstating organizational commitment based on communication alone. Practically, this suggests that closing the gap between perception and institutionalization requires deliberate investment in the HRM system itself, not further reinforcement of the existing communication strategy.

6. Limitations and Future Research

The study has several limitations. First, public websites are curated communications and may overrepresent successful or recent activity. Second, the 29-document corpus is saturation-oriented rather than exhaustive. Third, digital counts represent visibility rather than resource intensity, quality or effectiveness. Fourth, one analyst coded the corpus. Fifth, the survey is cross-sectional and cannot establish temporal causality. Sixth, all survey constructs were reported by employees, so common-method and social-desirability risks remain. Seventh, the single-university setting limits statistical generalization. This study also did not assess discriminant validity via HTMT or predictive relevance via $Q^2/PLSpredict$; conclusions regarding measurement and structural validity should be interpreted within the scope of the reliability, convergent validity, and effect-size (f^2) checks reported.

Most importantly, a zero digital-evidence code means that explicit public evidence was not located; it does not prove that an internal practice is absent. Conversely, significant employee perceptions do not prove that every Green HRM practice is formally codified. The two phases should therefore be read as complementary evidence about communicated architecture and employee interpretation, not as interchangeable measures.

The cross-sectional survey establishes association and mediation but not temporal causality. A stronger next stage would separate predictor, mediator and outcome measurement in time, compare lecturers with professional staff, and test whether faculties or units differ in perceived system strength. If green psychological climate is aggregated to a unit level, within-unit agreement and between-unit reliability must be demonstrated before multilevel inference.

Future work should triangulate the survey with internal recruitment criteria, BKD/SKP or performance instruments, staff-development records, award decisions and environmental performance indicators. Longitudinal or quasi-experimental evaluation of new Green HRM practices would show whether stronger signals precede changes in climate and OCBE. Cross-

university replication would also test whether the UPR pattern generalises to other Indonesian universities with different environmental missions.

Declaration of AI and AI-assisted technologies in the writing process

During the preparation of this work, the author used OpenAI ChatGPT to assist with language editing, and structural alignment. The author reviewed and edited the output as needed and takes full responsibility for the content of the publication.

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