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Role of Employee Commitment in the Nexus between Green Human Resource Management Practices and Environmental Performance

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ABSTRACT

The purpose of the current study is to look at how employee engagement affects the connection between environmental effectiveness and green HRM practices. Three hundred and sixty (360) workers of Ghanaian technical universities participated in the investigation, which was cross-sectional and explanatory and employed a quantitative research technique with survey questionnaires. The study's conclusions showed no meaningful correlation between environmental performance and green hiring practices. Environmental performance was, nevertheless, favorably predicted by staff green training and green appraisal. The findings also showed that the association between GHRM practices and environmental performance was not mediated by employee commitment. Human Resource Managers and Deputy Registrars overseeing human resource management should champion green HRM and create awareness of how HRM practices can increase the preservation of the natural environment in developing countries in Africa. The study offers employee perspectives on the relationship between green HRM practices and environmental performance. It also offers a paradigm for enhancing technical colleges' environmental performance via the adoption of green HRM practices.

Keywords: Employee commitment, Environmental performance, Green employee recruitment, Green HRM practices, Partial least squares structural equation modeling (PLS-SEM), Technical universities.

Introduction

The main focus of green human resource management (GHRM) is an organization's ability to recruit, train, and retain employees in an environmentally responsible manner (Saeed *et al*., 2019; Adriana *et al*., 2020). Based on Dumont, Shen and Deng (2017), the organization's green human resource policies are largely aimed at encouraging workers to adopt a green attitude and conduct in the workplace. Sarkis and Zhu (2018) and Dyakova (2017) both assert that the idea of a sustainable economy has gained importance.

Because of this, organizations must build a green sense among employees (Suleman *et al*., 2022). Organizations implement green human resource management (GHRM) techniques as one way to enhance their environmental performance (Dumont *et al*., 2017). Saeed *et al*. (2019), Chatterjee, Chaudhuri and Vrontis (2023), Davidescu, Apostu, Paul and Casuneanu (2020), and others have highlighted the importance of green HRM practices in enhancing firm environmental sustainability. In response to changes in social levels, the labour market, and employment relations, GHRM has been seen as a crucial component. GHRM includes the development and implementing HRM principles, guidelines, and practices to help firms achieve their environmental objectives as well as the encouragement of employee behavioral and attitude adjustments to enhance organizations' environmental performance (Ren *et al*., 2018; Chaudhary, 2020). The idea of GHRM practices is developing together with the larger body of literature on sustainable development (Bombiak & Marciniuk-Kluska, 2018; Ren *et al*., 2018), and it has just emerged as a distinct field of

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research (Bombiak, 2019). Recent research have linked GHRM to a number of environmental management and overall environmental performance characteristics (Bombiak & Marciniuk-Kluska, 2018; Ren *et al*., 2018; Amrutha & Geetha, 2020).

By participating in a range of pro-environmental activities, which are now commonly acknowledged, employees greatly aid an organization's greening (Saeed *et al*., 2019). According to Yusoff, Nejati, Kee, and Amran (2020), the growth of various pro-environmental initiatives performed at the corporate level depends on the dedication of employees. Employees' commitment affects the consumption of resources like energy use and lighting, ventilation, and air conditioning. The commitment level of employees towards greening also affects green policy formulation and implementation in these institutions. Research on how employee commitment affects GHRM effectiveness has not been thoroughly examined, despite the increased interest in investigating green HRM practices and their potential advantages for businesses and the industry as a whole. Literature suggests that HRM influences proximal outcomes, such as employee commitment and behaviors, which do contribute to distal organizational performance (Chaudhary, 2020; Ansari *et al*., 2021). But as Chaudhary (2020) points out, little is known about how employees' commitment affects organizations' motivation to participate in environmental initiatives through GHRM. Examining, the commitment level of employees on GHRM has, been identified by Ansari *et al*. (2021) and Dumont *et al*. (2017), as an important field of study for future scholars' attention.

Green HRM (GHRM) is gaining popularity, but little is known about its theoretical underpinnings, how it is measured, and how it affects business outcomes. This ambiguity is indicative of a larger trend in green management studies and is not specific to Ghana. Therefore, in-depth research on different GHRM practices and how they affect environmental efficiency is crucial. Although academics have emphasized the role of management in organizational greening (Bombiak & Marciniuk-Kluska, 2018; Al-Zawahreh *et al*., 2019; Amrutha & Geetha, 2020), there is little agreement on the ways in which particular practices—like green hiring, training, incentives, and evaluation—impact environmental performance. Furthermore, previous research frequently ignores environmental-specific results in favor of evaluating overall business performance. By investigating how employee commitment mediates the relationship between environmental performance and GHRM policies like green recruiting, this study fills these gaps.

Additionally, despite the fact that green human resource management (GHRM) methods have garnered a lot of attention lately, much of the earlier studies relate to awareness (Chaudhary, 2020), adoption (Yong *et al*., 2019), and implementation (Bombiak & Marciniuk-Kluska, 2018) of GHRM practices in organizations. The impact of adopting and implementing these GHRM practices in educational institutions has not been extensively, researched.

Literature Review

Green Human Resource Management Practices

The concept of "green human resource management" is becoming more significant in the corporate sector (Dubey & Gupta, 2018). The capacity of businesses to adopt environmentally friendly HR practices is the foundation of GHRM, a complex procedure that affects employees, companies, and the nation's eco-sustainable performance (Qureshi *et al*., 2020). According to Ren *et al*. (2018), green HRM practices develop a workforce that can support the green culture of the company. Organizations and society benefit from GHRM, which is defined as policies that encourage eco-friendly attitudes across HR functions, including recruiting, training, and appraisal (Suleman *et al*., 2022). In order to accomplish organizational environmental goals, HRM is essential for establishing and maintaining a green culture (Ullah, 2017). HRM procedures including employee involvement and performance monitoring are critical to organizational development and strategic success (Khurshid & Darzi, 2016).

In the global context, finding qualified and competent workers is the primary problem for HRM (Przytua *et al*., 2020). To draw in young people who are aware of green organizations and environmental challenges, several employers, particularly multinational corporations, advertise themselves as Green HRM practitioners (Amrutha & Geetha, 2020). Saeed *et al*. (2019) avers that the practice of recruiting and selecting employees for a post using environmentally friendly procedures is known as green employee recruitment. Some firms throughout the world have implemented green HRM procedures in an effort to improve their hiring procedures and create eco-friendly workplaces (Qureshi *et al*., 2020). Active job searchers often choose companies that can link people with businesses that fit them and vice versa, utilizing green online recruiting platforms.

Green training is defined as educational activities that help the attainment of environmental goals by increasing employees' awareness, knowledge, and skills connected to environmental challenges (Tang *et al*., 2018; Khalil & Muneenam, 2021). It acts as a continuous process to update workers' skills for sustainable development (Liu *et al*., 2021) and gives employees the authority to match organizational performance with environmental priorities. Environmentally responsible performance evaluation is a component of green employee appraisal (Shafagatova & Van Looy, 2021). This includes reducing waste and increasing efficiency by utilizing virtual systems rather than paper-based techniques. Since feedback is given through digital channels, it is essential for coordinating individual performance with the sustainability objectives of the company (Shafagatova & Van Looy, 2021).

Environmental Performance

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Employee Commitment

In the literature, academics have defined employee green behavior as a particular kind of pro-environmental conduct that occurs in the workplace (Chaudhary, 2020; Rubel *et al*., 2021). One of the many ways used by organizations and institutions to increase their environmental performance and hit sustainability goals is employee commitment toward going green. Furthermore, Rubel *et al*. (2021) have explained commitment toward green human resource management practices as employees' deliberate actions that lessen the harm caused by their acts. It might involve things like making efficient use of resources, green management activities by firms, waste reduction, saving energy, and recycling (Amrutha & Geetha, 2020). Employees' commitment towards an organization or institution's approval of green human resource management practices cannot be overlooked since it has an impact on its success.

Theoretical Framework

Social Exchange Theory (SET), on which this study is based, describes relationships as cost-benefit analyses in which people exchange something in the hopes of receiving something in return. According to Kim, Yoon and Zo (2015), SET evaluates commitment based on perceived reciprocity as well as emotions. People maintain relationships when positive returns are anticipated, according to Blau (1968), Cropanzano and Mitchell (2005), and Baldwin (1978), highlighting the reciprocity principle. This reciprocal relationship in the workplace encourages loyalty and accountability. Employees frequently respond by adhering to environmental standards when they see the benefits of organizational programs like GHRM. SET is used in this study to bolster the claim that employee commitment has a major impact on how well GHRM procedures work. Understanding the function of reciprocity aids in determining how long-term environmental objectives may be supported by consistent employee engagement (Kilroy *et al*., 2023).

Green Employee Recruitment and Environmental Performance

Since companies must first green their people resources in order to meet sustainability targets, green recruitment has a direct impact on environmental performance (Fernando *et al*., 2019). Businesses can recruit environmentally concerned individuals by selecting applicants who are eager to participate in environmental programs and highlighting green values in job advertising, according to Yusoff *et al*. (2020). To cut down on paper and increase productivity, businesses also employ digital platforms for hiring, like websites and social media (Suleman *et al*., 2022). According to Agyabeng-Mensah *et al*. (2020), virtual interviews and online applications are essential elements of green recruiting, which encourages staff participation in continuous green projects like cutting emissions and waste (Sharma, 2016).

***H*$_{1a}$**: *There is a positive relationship between green employee recruitment and environmental performance.*

Green Employee Training and Environmental Performance

Green recruitment prioritizes employing environmentally conscientious workers, which has a direct impact on environmental performance (Fernando *et al*., 2019). Job advertisements that emphasize green ideals draw applicants who are motivated to support environmental causes (Yusoff *et al*., 2020). Utilizing digital platforms such as social media and websites decreases the amount of paper used and increases productivity (Suleman *et al*., 2022). Interviews and virtual applications encourage continuous staff participation in sustainability initiatives like waste and emission reduction (Sharma, 2016; Agyabeng-Mensah *et al*., 2020).

***H_{1b}**: Green personnel training and institution effectiveness are positively correlated.*

Green Employee Appraisal and Environmental Performance

Businesses can use human capital to improve environmental performance through green human resource management (GHRM) (Roscoe *et al*., 2019). Research highlights the crucial role HR managers play in selecting, educating, and evaluating people who care about the environment (Arda *et al*., 2018; Roscoe *et al*., 2019). Additionally, they use assessments to match employee goals with environmental objectives (Renwick *et al*., 2016) and create and execute pro-environmental performance indicators across enterprises (Roscoe *et al*., 2019). There is little attention paid to the relationship between green employee assessment and environmental performance in poor nations like Ghana, despite research linking the two (Gilal *et al*., 2019; Davidescu *et al*., 2020). In the field of higher education, Camilleri and Camilleri (2020) discover a negative association, whereas Gilal *et al*. (2019) claim a positive one. Consequently, this study proposes that:

H_{1c}: Green employee evaluations and business effectiveness are positively correlated.

Mediating role of Employee Commitment on Green HRM Practices and Environmental Performance

Green hiring, training, and appraisal are examples of GHRM practices that have a beneficial impact on employee attitudes and behaviors, which improve environmental performance (Saeed *et al*., 2019; Ansari *et al*., 2021). Employee intrinsic motivation and alignment with the company's green values are frequently the foundations of this commitment (Pham *et al*., 2019). While GHRM influences environmental performance directly and indirectly through mediators like employee engagement (Boxall *et al*., 2016; Raineri & Paillé, 2016; Pham *et al*., 2019), role alignment with green strategies increases engagement (Abdelhamied *et al*., 2023).

Employee engagement and comprehension of the organization's green aims are improved by ongoing involvement in environmental projects (Pham *et al*., 2019). Devoted staff members assist attaining green goals and make creative contributions to sustainability initiatives (Babiak & Trendafilova, 2011; Nikolaou *et al*., 2015; Tariq *et al*., 2016). Green hiring and training promote eco-conscious behavior and culture by building skills and enduring commitment (Abdelhamied *et al*., 2023). The success of GHRM in enhancing environmental performance ultimately depends on employee commitment (Ansari *et al*., 2021).

H4a: The association between environmental performance and green hiring practices is mediated by employee commitment.

H4b: The association between employee green training and environmental performance is mediated by employee commitment.

H4c: The association between employee green evaluation and environmental performance is mediated by employee commitment.

Conceptual Framework

Wallis (2021) explained conceptual framework to be a network or “a plane” of interconnected concepts that jointly provides a thorough understanding of a phenomenon or phenomena.

Figure 1 displays the conceptual framework that directs this investigation. It demonstrates the direct and indirect relationships between environmental performance and green human resource management (GHRM) practices—more especially, green hiring, green training, and green appraisal—through employee commitment. The direct effects of the three GHRM practices on environmental performance are depicted in H1a–H1c, while the mediating role of employee commitment in these interactions is captured in H4a–H4c. Thus, the framework gives a systematic foundation for empirical validation as well as a schematic depiction of the study's assumptions.

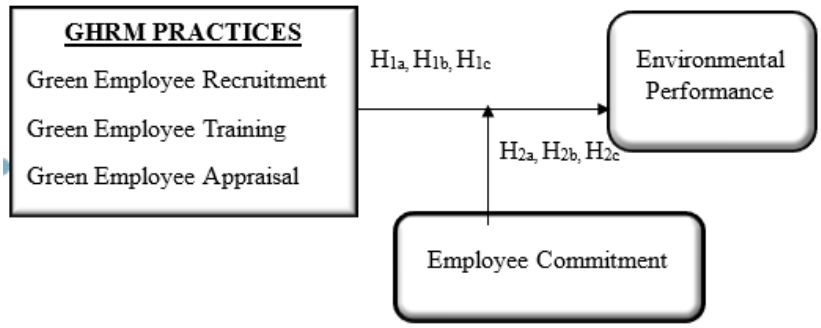

Figure 1. Conceptual Framework
Source: Authors' Conceptualization

Materials and Methods

The cause-and-effect link between employee commitment (a mediator), environmental performance (a dependent variable), and green human resource management (GHRM) practices (an independent variable) is investigated in this study using a positivist methodology. The study sampled staff members from Ghanaian technical universities who have adopted GHRM using a quantitative approach and an explanatory design. The method of purposive sampling was used. Krejcie and Morgan's (1970) table was used to calculate the sample size of 302, taking into account the 1,382 total population.

Nevertheless, the researcher added 20% of the minimum sample size to account for non-responsiveness and incorrectly completed questionnaires by study participants, as suggested by marketing scholars (Holtom *et al*., 2022). This increased the study's total sample size to 360 participants. The study's sample size of 360 is within the range of 300 and above, which is recommended for quantitative research (Hair *et al*., 2017). The Statistical Package for Social Sciences (SPSS) and Partial Least Square Structural Equation Modeling (PLS-SEM 4) were both used to evaluate the data gathered for this study. While PLS-SEM was utilized to test the suggested association between the study variables, SPSS was employed to do descriptive analysis. The average variance extractor (AVE) and standard deviation (SD) of the component variables, along with the respondents' demographic profile, were analyzed.

Results and Discussion

Demographic Characteristics of Respondents

The profile of the respondents is reported in this section. The profile consists of respondents' gender, age, education, their workplace (the university), and the number of years they have worked there. The results are presented in **Table 1**.

Table 1. Demographic Characteristics

Profile	Frequency	Percentage (%)
Gender		
Male	166	52.5
Female	150	47.5
Total	**316**	**100.0**
Age		
18-25	13	4.1
26-35	75	23.7
36-45	138	43.7
46-55	62	19.6

Above 55	28	8.9
Total	**316**	**100.0**
Education		
SHS	-	-
Technical/Vocational	12	3.8
Diploma	17	5.4
Undergraduate Degree	97	30.7
Graduate (Masters/PhD)	184	58.2
Others	6	1.9
Total	**316**	**100**
University		
Technical University 1	190	60.1
Technical University 2	126	39.9
Total	**316**	**100**
Years of Work		
2-5yrs	135	42.7
6-10yrs	40	12.7
11-20yrs	91	28.8
21-30yrs	45	14.2
41 and above	5	1.6
Total	**316**	**100**

Source: Field data, 2023

According to **Table 1**, 166 (52.5%) of the responders were men, while 150 (47.5%) were women. The age group with the highest percentage of responders was 36–45 (43.7%), followed by 26–35 (23.7%), 46–55 (19.6%), over 55 (8.9%), and the smallest group, 18–25 (4.1%). In terms of education, 30.7% were bachelor's degree holders, 5.4% had diplomas, 3.8% held technical or vocational certificates, 1.9% had other degrees, and 58.2% held graduate degrees (Master's or Ph.D.). Technical University 1 (TU1) accounted for 60.1% of the total responses, while Technical University 2 (TU2) accounted for 39.9%. In terms of tenure, 42.7% had been employed at their institution for two to five years, 28.8% for eleven to twenty years, 14.2% for twenty-one to thirty years, 12.7% for six to ten years, and 1.6% for forty-one years or more.

Descriptive Analysis of Constructs

This section reports the descriptive statistics for each of the measures. Scores for all variables were recorded on a Likert scale ranging from "1" (strongly disagree) to "5" (strongly agree). The statistics cover the mean, standard deviation, excess kurtosis, and skewness. The results are presented in **Table 2**.

Table 2. Descriptive Statistics

Constructs	Item	Mean	Std. Deviation	Excess Kurtosis	Skewness
Green Employee Recruitment					
The management gives high value to green recruitment	GER1	3.377	1.010	-0.159	-0.716
The institution includes environmental requirements of the institution in job descriptions and person (job) specifications	GER2	3.316	1.053	-0.409	-0.579
The institution does recruitment online	GER4	2.965	1.165	-0.995	-0.258

The institution conducts the recruitment process remotely via telephone and video conference	GER6	2.835	1.203	-0.949	0.210
My Institution asks environment-related questions when interviewing candidates or evaluating them for selection,	GER7	3.114	1.108	-0.788	-0.269
The Institution prefers to select candidates committed and sensitive to environmental issue	GER8	3.130	0.951	-0.392	-0.173
Overall Green Employee Recruitment		**3.123**	**1.082**		
Green Employee Training					
Employees get a chance to be trained on environmental issues	GET1	3.165	1.067	-0.781	-0.411
My institution organizes training sessions for employees via online.	GET2	2.883	1.132	-1.074	0.100
The Institution provides employees with green training to promote green values	GET3	3.275	1.051	-0.615	-0.586
My Institution develops training programs in environment management to increase environmental awareness	GET4	3.187	0.997	-0.787	-0.247
My institution trains employees on adopting environmentally-friendly practices	GET5	3.370	0.964	-0.231	-0.523
The Institution applies job rotation to train green managers of the future	GET6	3.231	0.914	-0.502	-0.349
My Institution provides adequate amount of training in environmental issues for employees	GET7	3.019	1.003	-0.795	-0.076
Employees receive environmental training frequently	GET8	2.946	1.108	-0.902	0.037
The institution implements a system of learning practices related to environmental issues.	GET9	3.241	0.958	-0.537	-0.411
There is adequate evaluation of employee's performance after environmental training	GET10	3.038	0.996	-0.463	0.117
Overall Green Employee Training		**3.135**	**1.019**		
Green Employee Appraisal					
The Institution considers employees' workplace green behavior in performance appraisals.	GEA1	3.139	1.031	-0.669	-0.491
Employees contributions to environmental management are assessed and recorded in performance appraisal system	GEA3	3.085	1.047	-0.653	-0.321
There are penalties or dis-benefits (fines) in the performance management system for not meeting green goals and responsibilities	GEA4	2.851	1.000	-0.626	-0.137
Top management sets green goals and assign responsibilities for every employee	GEA5	3.180	1.159	-0.765	-0.430
The human resource department establishes a clear and special objective of green practice for each employee	GEA6	3.152	1.123	-0.802	-0.383
Employees get regular feedback for improving their environmental performance	GEA7	3.038	1.040	-0.763	-0.076
Top management carry out environmental audits in the institution	GEA8	3.241	1.119	-0.497	-0.622
Overall Green Employee Appraisal		**3.096**	**1.074**		
Employee Commitment					
I really care about the environmental concern of the Institution	EMC1	4.168	0.747	1.986	-1.155
I would feel guilty about not supporting the environmental efforts of the Institution	EMC2	4.123	0.808	1.049	-1.025

The environmental concern and policies of the Institution means a lot to me.	EMC3	4.073	0.798	0.864	-0.920
I feel a sense of duty to support the environmental efforts of the Institution	EMC4	4.120	0.719	1.091	-0.799
I really feel as if the Institutions environmental policies are my own.	EMC5	3.892	0.890	0.639	-0.761
I feel personally attached to the environmental policies and goals of the Institution.	EMC6	3.921	0.840	0.782	-0.782
I strongly value the environmental efforts of the Institution	EMC7	4.016	0.777	1.795	-0.962
I fulfil all environmental responsibilities required by my job	EMC9	3.797	0.891	1.439	-1.046
I never neglect environmental aspects of the job which are obligated to perform	EMC10	3.940	0.707	4.533	-1.373
Overall Employee Commitment		**4.006**	**0.797**		
Environmental Performance					
In my university, initiatives are taken to implement long-term environmental policies.	EVP1	3.693	0.909	1.599	-1.105
In my university, initiatives are taken to implement environmental management systems	EVP2	3.718	0.907	0.911	-0.871
Energy conservation practices are promoted in my university	EVP3	3.696	1.060	0.502	-0.924
In my university, practices related to reducing paper consumption is implemented	EVP4	3.785	0.980	1.054	-1.078
In my university, initiatives are taken to reduce pollution from greenhouse gas emissions	EVP5	3.557	0.955	0.473	-0.854
In my university, non-compliance with environmental laws causes sanctions	EVP6	3.215	1.036	-0.494	-0.166
In my university, biodiversity is protected from degradation (such as maintaining Gardens)	EVP7	3.718	0.931	0.719	-0.876
In my university, activities to promote environmental awareness are arranged	EVP8	3.722	0.927	1.017	-0.928
In my university, research projects on environmental topics are conducted	EVP9	3.722	0.856	0.766	-0.678
Overall Environmental Performance		**3.647**	**0.951**		

Source: Field Data, 2023

NOTE: GER=Green Employee Recruitment; GET=Green Employee Training; GEA=Green Employee Appraisal; EMC=Employee Commitment; EVP=Environmental Performance

Table 2 demonstrates that respondents' understanding of environmental performance was generally good, with an overall mean of 3.647 (SD = 0.951) and mean values ranging from 3.215 to 3.785. Green employee recruiting (mean = 3.123, SD = 1.082), green employee training (mean = 3.135, SD = 1.019), green employee appraisal (mean = 3.096, SD = 1.074), and employee commitment (mean = 4.006, SD = 0.797) were among the other GHRM practices that respondents positively acknowledged. While lower standard deviations imply greater participant unanimity, higher ones show more diverse replies.

Common Method Bias (CMB)

A comprehensive analysis of complete collinearity was used to check for the problem of common method bias (CMB) (Kock, 2020). According to Kock (2020), if the partial least squares structural equation modeling (PLS-SEM) model's collinearity assessment at the factor level is more than 3.3, it suggests that the model has problems with common

method bias. According to an analysis of the model's factor-level collinearity test, all of the VIF fell between 1.363 and 3.221. Therefore, there is no common-method bias in the model. The results of the collinearity test are displayed in **Table 3**.

Model Estimation

The PLS-SEM approach was used to analyze and interpret the data that was gathered. The approach was selected due to its suitability for both explaining variance in endogenous variables and evaluating causal-predictive research models (Hair *et al*., 2017). SmartPLS version 4 was used to assess the data set and estimate the parameters of the measurement and the structural model (Ringle *et al*., 2022). To determine the correlation between the constructs in the conceptual framework, the measurement model's validity and reliability were examined, and then the structural model was evaluated (Hair *et al*., 2019; Shmueli *et al*., 2019).

Measurement Model

Measurement models evaluate the validity and reliability of constructs (Hair *et al*., 2019). With the exception of items GER4, GER6, EMC1, EMC9, EVP4, and EVP6, which were kept because of their strong construct validity and reliability, **Table 3** and **Figure 2** demonstrate that the majority of factor loadings surpass the 0.708 threshold.

Due to low loadings and validity concerns, items GER3, GER5, GEA2, and EMC8 were eliminated. Average variance extracted (AVE) values range from 0.530 to 0.695, indicating adequate reliability and convergent validity, while reliability measures Cronbach's alpha (0.819–0.933), rho_A (0.837–0.933), and composite reliability (0.869–0.944) all surpass the 0.7 threshold (Hair *et al*., 2019; Shmueli *et al*., 2019).

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Table 3. Reliability and Convergent Validity Results

Items	*Loadings*	*t-values*	*p-values*	*VIF*	*CA*	*rho_A*	*CR*	*AVE*
GER1	0.829	38.825	0.000	2.563	0.819	0.837	0.869	0.530
GER2	0.778	21.922	0.000	2.305				

GER4	0.581	12.259	0.000	1.363				
GER6	0.610	13.194	0.000	1.443				
GER7	0.750	20.581	0.000	2.188				
GER8	0.785	27.734	0.000	2.294				
GET1	0.734	25.443	0.000	2.045	0.933	0.935	0.944	0.627
GET2	0.735	24.935	0.000	1.877				
GET3	0.757	20.723	0.000	2.214				
GET4	0.867	57.077	0.000	3.148				
GET5	0.752	25.463	0.000	2.346				
GET6	0.787	33.027	0.000	2.425				
GET7	0.823	36.842	0.000	2.708				
GET8	0.829	42.446	0.000	2.990				
GET9	0.777	31.247	0.000	2.271				
GET10	0.844	46.712	0.000	3.201				
GEA1	0.810	27.583	0.000	2.424	0.927	0.933	0.941	0.695
GEA3	0.761	20.813	0.000	2.343				
GEA4	0.792	25.681	0.000	2.498				
GEA5	0.887	49.487	0.000	3.220				
GEA6	0.902	86.936	0.000	3.221				
GEA7	0.854	46.806	0.000	3.194				
GEA8	0.819	40.599	0.000	2.689				
EMC1	0.662	12.415	0.000	1.958	0.903	0.914	0.920	0.564
EMC2	0.705	17.615	0.000	2.441				
EMC3	0.774	23.779	0.000	2.584				
EMC4	0.807	28.958	0.000	3.068				
EMC5	0.794	42.116	0.000	2.767				
EMC6	0.811	31.263	0.000	3.214				
EMC7	0.775	23.908	0.000	2.418				
EMC9	0.646	13.628	0.000	1.835				
EMC10	0.762	24.835	0.000	2.127				
EVP1	0.780	24.729	0.000	3.158	0.903	0.910	0.921	0.565
EVP2	0.745	20.786	0.000	2.820				
EVP3	0.812	32.309	0.000	2.297				
EVP4	0.631	11.522	0.000	1.737				
EVP5	0.713	15.504	0.000	2.058				
EVP6	0.696	20.214	0.000	1.671				
EVP7	0.787	24.856	0.000	2.312				
EVP8	0.844	46.325	0.000	2.784				
EVP9	0.735	18.390	0.000	1.821				

Source: Smart-PLS 4 estimate

VIF = Variance inflation factor; CA = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted

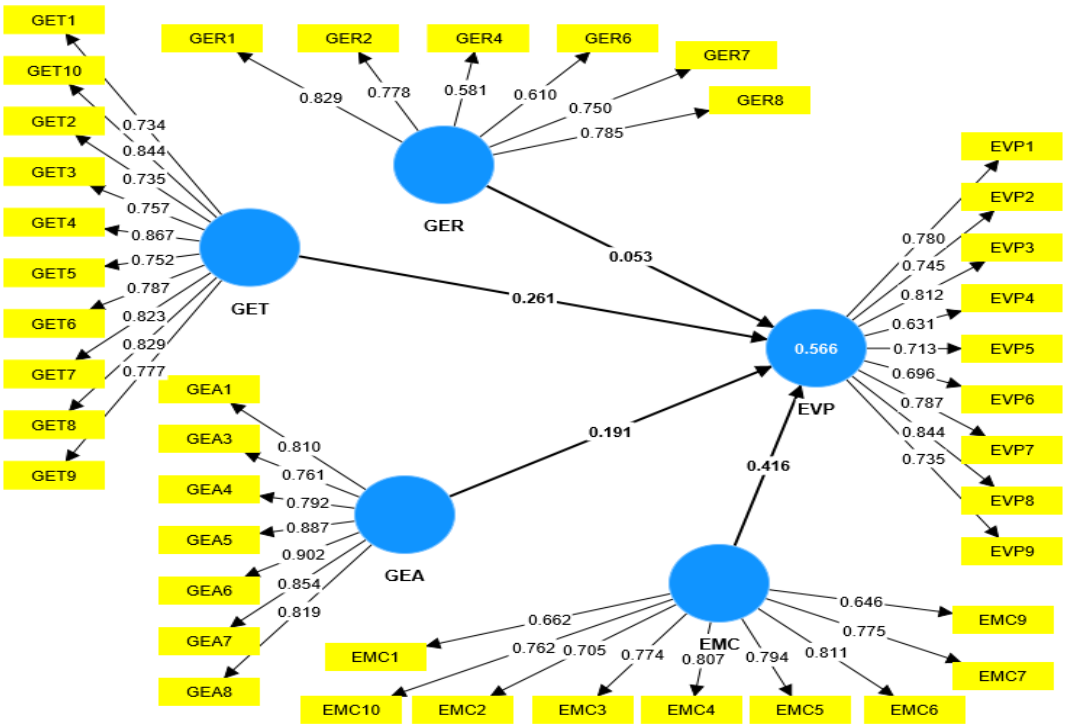

Figure 2. Measurement Model
Source: SmartPLS 4 estimate

Mediation Analysis

Mediations are typically used in research to either strengthen or weaken relationships. The research evaluated the role that employee commitment plays in mediating the link between the university's environmental performance and green HRM strategies, such as hiring, training, and evaluating green employees.

In evaluating the effect of green HRM practices—more especially, green hiring, training, and evaluation—on environmental performance, this study looked at the mediating function of employee commitment. According to hypothesis H1a, environmental performance and green hiring practices are positively correlated. Yet, the findings (β = 0.053; t = 0.796; p = 0.426) revealed no significant impact, suggesting that environmental performance in Technical Universities was not predicted by green hiring. This implies that environmentally friendly employment procedures—such as online interviews and job descriptions that include environmental requirements—are not given priority. According to earlier research, green hiring and environmental performance are positively correlated (Fernando *et al*., 2019; Yusoff *et al*., 2020; Nisar *et al*., 2021; Raza & Khan, 2022). These findings run counter to those conclusions. For instance, Nisar *et al*. (2021) and Raza and Khan (2022) linked green recruitment to increased green behaviors and efficiency, whereas Fernando *et al*. (2019) contended that green hiring directly affects environmental consequences.

H_{1b}: There is a positive relationship between green employee training and environmental performance.

The findings (β = 0.261; t = 3.469; p < 0.001) demonstrated a significant positive impact in support of the second hypothesis, which states that green employee training improves environmental performance. This shows that staff members at Technical University receive environmental training that improves their knowledge, abilities, and eco-friendly behaviors, such using less paper and conserving energy. Training programs with an environmental focus aid in promoting sustainability issues and green principles. According to earlier research (Rawashdeh, 2018; Fernando *et al*., 2019; Roscoe *et al*., 2019; Yusoff *et al*., 2020; Nisar *et al*., 2021; Suleman *et al*., 2022), green training has a major positive impact on both organizational success and environmental efficiency. These findings are consistent with those findings. For example, Suleman *et al*. (2022) underlined green training as crucial for reducing environmental degradation, whereas Rawashdeh (2018) stressed that green HRM activities like training improve environmental performance.

H_{1c}: There is a positive relationship between green employee appraisal and environmental performance.
The findings (β = 0.191; t = 2.353; p = 0.019) showed a substantial positive effect, supporting the third hypothesis that green employee appraisal improves environmental performance. Technical colleges use audits, eco-friendly behavior in performance assessments, and green goal-setting to evaluate their staff' environmental efforts. These procedures are consistent with earlier research showing a favorable relationship between green appraisal and environmental performance by Ardiza *et al*. (2021), Gilal *et al*. (2019), Roscoe *et al*. (2019), and Davidescu *et al*. (2020). In contrast, Yusoff *et al*. (2020) and Camilleri and Camilleri (2020) found a negative correlation.

H_{2a}: Employee commitment mediates the relationship between employee green recruitment and environmental performance.
According to hypothesis H2a, the relationship between green hiring and environmental performance is mediated by employee dedication. However, there was no discernible mediation effect in the results (β = -0.125; t = 1.630; p = 0.103). This suggests that the relationship between green hiring and environmental performance in technical universities was not strengthened by employee engagement. The results are in contrast to previous research by Ansari *et al*. (2021) and Anindita and Rapiah (2023), which highlighted the importance of employee engagement in improving environmental outcomes and GHRM efficacy.

H_{2b}: Employee commitment mediates the relationship between employee green training and environmental performance.
The findings (β = -0.048; t = 0.561; p = 0.575) demonstrated that employee commitment did not mediate the association between green training and environmental performance, in spite of the fifth hypothesis. This implies that staff members are not completely embracing the institutions' green training programs. The results run counter to those of Ansari *et al*. (2021), who found that green training improves employees' eco-friendly practices.

H_{2c}: Employee commitment mediates the relationship between green employee appraisal and environmental performance.
The results showed no significant mediation between green employee appraisal and environmental performance and employee commitment (β = -0.117; t = 1.158; p = 0.247). This implies that employees oppose imposing fines for not meeting green goals or including green responsibilities into evaluations. These results stand in contrast to those of Hossain *et al*. (2022), who discovered that employees commitment has a significant impact on green performance through appraisal practices, and Muisyo and Qin (2021), who observed that organizational culture and employee commitment mediate the relationship between green HRM and performance.

Conclusion

Although the field of green HRM seems to be in its infancy, institutions have been forced to adopt green HRM practices, with an emphasis on green hiring, green training, and green appraisal, as a result of growing awareness of the significance of environmental issues. Noticeably, most institutions have positive feelings about the environment and, as a result, show much commitment and excellent performance towards green institutions, but the challenge they face is the behaviors of their employees regarding green initiatives. In order to identify its possible effects on human resource management-related issues, the impact of green HRM is complex and needs regular monitoring and assessment. Green human resource management calls for certain HR procedures and guidelines that align with the environment, economics, and social culture—the three pillars of sustainability. The following conclusion was reached in light of the study's findings: Environmental efficiency was shown to be favorably and significantly impacted by two of the study's three components (green employee training and green employee assessment), while environmental performance was not positively predicted by green employee recruiting. Nevertheless, the association between GHRM practices and environmental performance was not mediated by employee commitment either. Given the low commitment of employees to environmental sustainability, management of Technical Universities should amplify GHRM practices through Human Resource Managers to create awareness. Technical Universities' Human Resource Management Practices should mirror environmental sustainability and everybody should be inclusive.

Implication to Theory and Practice

Implication to Management

The study calls on technical university HR managers to advance Green HRM by encouraging employee dedication and increasing environmental awareness.

Implication to Academia

By offering empirical proof of the connection between environmental performance and employee engagement in the context of green HRM practices, the study's findings have filled a knowledge vacuum.

Implication to Society

Organizational leaders have a better chance of achieving a healthy environmental performance in the community they serve if they give priority to efforts that raise awareness and use green HRM practices to increase employee involvement.

Recommendations

The study recommends the following:

1. Technical university human resource managers ought to educate the public about GHRM practices.
2. Inform staff members on the regulations that must be followed in order to implement green initiatives for environmental sustainability.
3. Determine the causes of the employees' lack of dedication, which minimizes the accomplishment of environmental sustainability.
4. Make reparations to win back employees' dedication to improving Technical Universities' green performance.
5. Green hiring and training programs should be put in place to increase staff members' awareness of environmental concerns and assist them in acquiring green attitudes and competencies that can lead to a long-term dedication to environmental performance.

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