Green HRM practices, green commitment, and green innovative work behavior in UAE higher education institutes

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A B S T R A C T

This study examines the relationships among green human resource management (GHRM), green commitment, green innovative work behavior (GIWB), and the moderating effect of environmentally specific servant leadership (ESSL) in UAE higher education institutes of the United Arab Emirates (UAE). Using a sample of employees, data were collected through a survey from 243 employees working in different universities across the UAE and analyzed using Structural Equation Modeling (SEM). The SEM analysis confirms robust relationships between GHRM, environmentally specific servant leadership, green commitment, and green innovative workplace behavior. GHRM has a positive impact on GHRM. ESSL fosters the relationship between GHRM and green commitment, while green commitment positively impacts green innovative workplace behavior. Females were found to be more environmentally aware of the needed adjustments compared to male workers at the UAE campuses. The study suggests that higher education institutes in the UAE should adopt ESSL to support eco-conscious behaviors and green practices on their campuses and contribute to the achievement of national sustainability goals.

1. Introduction

Over the last decade, organizations have been increasingly pressured to play a significant role in global environmentalism (Jabbour & De Sousa Jabbour, 2016; Pham et al., 2020) as they are one of the biggest contributors to environmental degradation (Wright & Nyberg, 2014). As a result, they are forced to rethink their business operations, systems, and procedures to achieve their sustainability agendas and strategies in response to societal, market, and legal pressures and demands within human resource management (HRM) (Pham et al., 2020). Green human resource management (GHRM), defined as the HRM-related aspects of environmental management that focus on the role of HRM in pollution prevention through an organization's operational processes (Renwick et al., 2013), has been argued to play a crucial role in organizations' sustainable development strategies (Amrutha & Geetha, 2020; Pham et al., 2020). The growing literature on green HRM indicates its criticality in this regard (Mishra, 2017; Paulet *et al.*, 2021). However, previous works have focused primarily on the awareness, adoption, and implementation of green HRM in organizations (Amrutha & Geetha, 2020), and scant attention has been paid to investigating its influence on green outcomes, such as green work attitudes and behavior (AlEssa & Durugbo, 2022; Amrutha & Geetha, 2020; Pham et al., 2020). While green HRM has been shown to help organizations achieve their sustainability agenda and green performance at the organizational level of analysis (Yong et al., 2020), little is known about its influence on employees' green innovative work behavior. Promoting such behavior among employees is crucial for the success of the sustainability initiative of an organization because green employees are the key source of green innovation (Singh et al., 2020). We contend that employees can be encouraged to engage in green innovative work behavior if they receive the necessary support from the

higher education institutes in the UAE. Previous studies (Saeed et al., 2019; Suharti & Sugiarto, 2020; Tanova & Bayighomog, 2022) have mainly concentrated on the implementation and adoption of green HRM in non-educational organizations (Aboramadan et al., 2021). While research on the relationship between GHRM and GIWB exists, there remains a significant research gap in exploring this relationship within the education sector, particularly in relation to its impact on green campuses, curriculum modification, the dynamic nature of green learning (with the agility or adaptability needed to innovate in sustainable practices), the psychology of change (due to ingrained habits or comfort with traditional practices), readiness to embrace sustainability within the workplace environment, and managerial strategies aimed at facilitating smooth transitions while minimizing resistance of those who struggle to see the relevance or necessity of implementing green practices.

While green HRM can provide a conducive environment to shape the desired employees' attitudes and behaviors, such as green work innovative behavior, we also propose that the influence occurs because the green HRM implemented in the organization enhances their green commitment, defined as the employees' willingness and dedication to engage in environmentally sustainable behaviors and activities in the workplace (Appelbaum et al., 2000; Bos-Nehles et al., 2013). For instance, when employees receive training on sustainable management and are rewarded for demonstrating green behavior, they are more likely to be committed to be innovative in delivering green performance. By investigating the mediating role of green commitment, we offer a better understanding of how and why green HRM drives employees to engage in green work innovative behavior and respond to Amrutha and Geetha's (2020) call to investigate the specific mechanisms and processes through which green HRM drive employees' environmentally responsible behavior (Amrutha & Geetha, 2020). Past studies have alleged a correlational relationship between GHRM and pro-environmental behavior, mediated by green entrepreneurship and moderated by green self-efficacy (Iftikar et al., 2022). We enrich the literature on the effect of green HRM on GIWB further by examining a potential mediator of green commitment because green HRM practices can shape employees' attitudes, values, and willingness to engage in green initiatives, in the UAE campuses.

Since we anticipate that green commitment can drive employees' GIWB, it is crucial that such attitude be further enhanced, as favorable attitudes can lead to favorable behaviors, implying the need to examine the relevant boundary conditions to facilitate and reinforce this process. We propose the role of servant leaders who demonstrate environmentally specific behavior. Environmentally specific servant leaders (ESSL) are leaders who prioritize the well-being of the environment and pro-environmental values while exhibiting the core tenets of servant leadership. They go beyond traditional leadership approaches by focusing on environmental sustainability and cultivating pro-environmental behaviors among their organizational stakeholders, including employees and customers (Luu, 2019). Various types of leadership approaches have been considered in promoting employees' green innovative work behavior, including transformational leadership (Aboramadan et al., 2021). It is suggested that green culture within an organization helps employees take responsibility for their environmentally oriented decisions (C. Sharma et al., 2022; S. Sharma et al., 2021; Vanapalli et al., 2021). We depart from previous studies by assessing whether environmentally specific servant leadership can enhance the effectiveness of sustainability initiatives within the UAE Higher Education Institutes. By extension, this can lead to improved environmental performance, increased employee engagement and commitment, and better outcomes for all organizations in the UAE.

Furthermore, gender differences concerning innovative behaviors remain inadequately investigated. It was reported that working women in the UAE exhibited quite higher innovative potentials, and even exceeded their male counterparts by constituting the majority of innovators in the UAE (Abukhait et al., 2019). Therefore, there is a compelling need to research and comprehend these behaviors and their underlying factors within various gender-groups (Cropley & Cropley, 2017). This is even more noticeable when examining various countries, such as the UAE. The country which is often characterized as a traditional 'patriarchal society' (Moghadam, 2004), 2004). Finally, our study is consistent with the UAE national agenda on innovation and sustainability, emphasizing innovation as a critical driver for sustainable economic growth. By studying innovative green practices such as green HRM practices, green commitment, and servant leadership, new ways of stimulating sustainable behavior in the workplace can be promoted, which can lead to new business models and economic opportunities for the UAE. Furthermore, green HRM practices can be implemented in the workplace, reducing the campus's carbon footprint, and contributing to the UAE's sustainability goals.

Our study sets out to achieve the following specific objectives: (a) investigate the effect of green HRM on green innovative work behavior, (b) examine whether green commitment can explain the link between green HRM and green innovative work behavior, (c) assess whether the effect of green HRM on green commitment and, subsequently, green work behavior is strengthened when leaders display environmentally specific servant behavior, and (d) investigate whether GIWB is moderated by the gender of the employees within GHRM practices.

2. Literature Review and Hypotheses Development

2.1 Green HRM, and GIWB

Green HRM aligns with the concept of a "bundle of practices" in HRM that involves implementing interconnected initiatives that integrate environmental sustainability into various HR domains (Rurkkhum, 2023). These initiatives include incorporating green criteria in recruitment and selection, providing eco-friendly training programs, setting performance objectives related to sustainability, recognizing and rewarding green contributions, promoting employee engagement in

environmental decision-making, and communicating the organization's sustainability goals (Ojo et al., 2022). By implementing this bundle of green HRM practices, organizations can effectively integrate environmental considerations into their HR policies and activities, fostering a culture of environmental responsibility and contributing to overall sustainability objectives (Yong et al., 2022).

By adopting green HRM practices, organizations can create a work environment that supports and encourages employees to engage in pro-environmental behavior, leading to improved environmental and business performance. The Ability-Motivation-Opportunity (AMO) model proposes that employees' behavior is influenced by their ability to perform the task, their motivation to do so, and the opportunity or environmental support to perform it effectively (Appelbaum et al., 2000). Also, "Green teams" encourage eco-friendly practices among their members, promote the reduce, reuse, and recycle mantra, and may be formed voluntarily or as a requirement of organizational policies. Previous studies (Saeed et al., 2019; Suharti & Sugiarto, 2020; Tanova & Bayighomog, 2022) have mainly concentrated on the implementation and adoption of green HRM in organizations, with limited research on its impact on green outcomes such as employees' green work attitudes and behavior. However, how green HRM influences employees' engagement in GIWB is key to driving green innovation and organizational performance.

GIWB is defined as the degree to which employees take personal initiative in adopting eco-friendly practices in an organization. Reusing discarded papers, segregating and recycling waste, consuming less water, and avoiding excessive printing are some examples of green work behaviors employees can exhibit (Amrutha & Geetha, 2020). GIWB is thus a form of work behavior urging new ideas, products, processes, or services that have positive environmental impacts. GIWB's outcomes include improved environmental performance, reduced environmental harm, increased employee engagement, and improved organizational reputation (Hamann et al., 2021). While these eco-friendly work behaviors are relevant for contributing to an organization's sustainability and green agenda, we argue that employees should be encouraged to think differently and innovatively in delivering green work behavior. Hence, following Scott and Bruce (1994), we conceptualize GIWB as individual behaviors that involve generating and implementing new and useful ideas in the workplace. GIWB consists of four dimensions: idea exploration, idea generation, idea championing, and idea implementation (Scott & Bruce, 1994).

In GIWB, GHRM practices can enhance employees' environmental knowledge and skills through relevant training, enabling them to innovate in environmentally responsible ways (Adjei-Bamfo et al., 2020). The GHRM practices also set a conducive work environment and context that offers employees the opportunity to engage in GIWB (Hamann et al., 2021). The positive work environment is likely to motivate and drive employees to exhibit GIWB. Therefore, we propose the following:

H₁: *GHRM has a positive impact on GIWB.*

2.2 Green Commitment Mediation

Green commitment refers to the willingness and dedication of employees to engage in environmentally sustainable behaviors and activities in the workplace(Appelbaum et al., 2000; Bos-Nehles et al., 2013). It involves an individual's beliefs, attitudes, and values towards environmental issues, which drive their actions and behaviors related to sustainability (Khan *et al.*, 2022). GHRM influences green commitment by shaping the organizational context and employee behaviors (Iftikar et al., 2022). It aligns HR practices with sustainability objectives, integrates green values into the workplace culture, and empowers employees to contribute actively to environmental goals (Muisyo et al., 2022). The impact of these GHRM practices fosters a stronger sense of green commitment among employees, leading to more sustainable and environmentally responsible organizations (Ali et al., 2022). In GHRM, employees' green innovative workplace behavior (GIWB) is influenced by their ability to access the necessary resources and skills to carry out environmentally friendly tasks, their motivation to engage in pro-environmental behavior, and the opportunity or support from the organization to perform green tasks effectively (Wu et al., 2019). AMO model could interpret the positive attitude on performance (Hooi, Liu, & Lin, 2022; Mehrajunnisa, Jabeen, Faisal, & Mehmood, 2022) that is by implementing green HRM practices that enhance employees' abilities (e.g., providing training and development opportunities on sustainable management), increase their motivation (e.g., through recognition and rewards for demonstrating green behavior), and create opportunities for green innovation (e.g., by fostering a supportive work environment), employees are more likely to be committed toward engaging in GIWB (Anwar et al., 2020; Khatoon et al., 2021) and being innovative in delivering green performance (Khan et al., 2022). Based on the above arguments, we propose the following:

H₂: *Green commitment mediates the link between GHRM and green innovative work behavior.*

2.3 Environmentally specific servant leadership moderation

Servant leadership is a leadership approach that emphasizes the leader's focus on serving the needs of their followers, empowering them, and helping them reach their full potential. It involves traits such as empathy, humility, listening skills, and a commitment to the growth and well-being of others (Zafar, Tian, Ho, & Zhang, 2022). Servant leaders prioritize the needs of their followers and aim to create a supportive and nurturing environment (Mughal, Cai, Faraz, & Ahmed, 2022).

Environmental-specific servant leadership extends this approach to focus specifically on supporting employees in their efforts to engage in pro-environmental behavior (Mughal, Cai, Faraz, & Ahmed, 2022). Environmentally specific servant leadership (ESSL) refers to a leadership style in which leaders prioritize environmental sustainability and serve as role models for green behavior within an organization (Mughal et al., 2022). This leadership style emphasizes empowering employees and providing them with the necessary resources and support to contribute to the organization's green agenda. Organizations foster a culture of innovation by providing resources and recognition, crucial for encouraging GIWB (Tu et al., 2022). ESSL is crucial, emphasizing leaders serving employees and encouraging environmental responsibility (Mughal et al., 2022).. However, how embedding ESSL is operationalized into the organization's culture and its impact on employee's green commitment remains unclear and requires further clarification.

We propose that the effect of green HRM on green commitment, which encompasses employees' dedication to environmental sustainability, is heightened when leaders demonstrate environmental-specific servant leadership. When leaders exhibit environmentally specific servant leadership behaviors, employees may feel more motivated, empowered, and connected to the organization's sustainability goals (Bantha & Sahni, 2021; Setiawan et al., 2020) They may perceive their leaders as credible and authentic advocates for environmental responsibility, especially in conducting regular "green talks" to share sustainable living tips and utilizing energy-efficient technologies, which can increase their commitment to green initiatives and foster a stronger alignment between their values and the organization's sustainability agenda (Zafar et al., 2022). Research has shown that servant leadership is associated with positive outcomes, such as increased employee engagement, commitment, and job satisfaction (Kaya & Karatepe, 2020). Based on these arguments, we propose the following:

H₃. *The effect of GHRM on GIWB mediated via Green Commitment is heightened when the leader demonstrates environmental-specific servant leadership.*

2.4 Gender Moderation

Gender, a significant factor alongside GHRM, influences the development of personality traits and values that drive eco-friendly behavior in the workplace (Cosenza et al., 2023). Given that women's involvement in and access to work that is equal to men's in quality and reward have been recognized, for decades, as feminist concern (Abukhait et al., 2019). In the fields of innovation, technology, and entrepreneurship, it is surprising that research has been mostly particularized by either gender blindness or notable male dominance. This indicates that empirical research on the gender dynamics affecting innovation processes is nascent (Ranga & Etzkowitz, 2010). Women tend to exhibit more environmentally conscious behavior compared to men, viewing it as both a social responsibility and a moral obligation to promote sustainability (Abukhait et al., 2019).

Companies with a higher proportion of female employees are more into environmental initiatives and societal welfare (Fernandez-Feijoo et al., 2014). The literature on the environment highlights distinct gender-based disparities (Al-Lamky, 2007; Chaudhary, 2020; Cosenza et al., 2023; Karam & Afiouni, 2014), emphasizing the crucial role that gender plays in the connection between GHRM practices and sustainability. Recently, the moderating role of gender on GHRM was investigated. The findings generated the gender being a moderator within the GHRM practices (Abbas et al., 2022). Given this controversy, the following hypothesis is tested.

H₄: *Gender has a moderating effect on green innovative work behavior.*

3. Method

3.1 Participants and Procedure

Universities are significant institutions with considerable human resource management structures, policies, and practices. Universities have substantial environmental footprints due to their size, operations, and influence. They employ a considerable workforce that includes faculty, administrative staff, and support personnel. Implementing Green HRM practices within universities can result in significant environmental improvements, making this context highly relevant and impactful.

Data were collected from employees in various job positions working at five universities in the UAE using a quota sampling technique to select participants from the target population because it is a purposive and systematic approach that allows researchers to create a sample that represents the diversity of the target population. After compiling an accurate and current list of email addresses for potential staff participants from the websites of the five targeted UAE universities, a pre-notification email was sent a few days before sending out the actual survey invitation. The email included a direct link to the SurveyMonkey survey, emphasizing the advantages of participating and providing reassurance to participants regarding the confidentiality of their responses. Upon following the link, they were presented with an e-consent form that explained the purpose of the study, the procedures involved, and their rights as participants. The e-consent also indicated that their IP addresses would be used for verification purposes. Responding to the survey indicated consent. We distributed 310 online questionnaires and obtained 243 responses. Approximately 21.6% either did not return their responses or provided incomplete responses. The invitations were sent to an extensive list of staff, spanning from demonstrators who contribute to practical learning, all the way up to esteemed professors who shape academic discourse.

3.2   Measures

Established instruments were used to measure the key constructs. A five-point Likert scale, ranging from '1' "strongly disagree" to '5' "strongly agree", was employed on all items where participants were required to indicate their level of agreement or disagreement on the statements provided. The following describes each instrument utilized to measure the construct.

GHRM was assessed using four dimensions, namely green recruitment, and selection (four items), green training and development (five items), green performance management and appraisal (three items), and green compensation and rewards (three items). These items were adapted from Jabbour's study (Jabbour, 2011). Sample items included "Applicants for positions in this organization, undergo well-designed interviews, which include questions about their environmental attitude, knowledge, and concerns." and "Employees are recognized for taking the initiative for environmental management through company environmental awards to individuals or teams". The items were reported to have good psychometric properties in previous studies (Yong, Yusliza, Jabbour, et al., 2020; Yusliza et al., 2019).

Green commitment towards the environment was measured by using three items to investigate how individual beliefs, organizational values, managerial support, and employee commitment may shape environmentally responsible behaviors in the workplace. The control variables were demographics, Organizational tenure and size, and industry (Raineri & Paillé, 2016). Sample items included "I feel as if my organization's environmental problems are my own'.

Green innovative work behavior was measured by 6 items developed by Scott and Bruce (1994). The survey was adopted in recent studies that linked this scale to GHRM (Aboramadan et al., 2021). Sample items included "I Investigate and secure the funds needed to implement new green ideas". The survey linked this measurement scale to establish a foundation for investigating organizational practices, employee behaviors, and environmental consciousness.

Environmentally-specific servant behavior was measured by 12 items developed by Luu (2019). Sample items included "My leader gives me the freedom to handle pro-environmental concerns in the way that I feel is best."

The assessment of common method variance (CMV) was considered due to the utilization of a singular data source in the study. CMV is a crucial consideration to ensure the reliability and validity of the findings, especially when information is obtained from a single respondent or source.

Specifically, our moderated mediation model, shown in Figure 1, shows how the drivers of GIWB, which is crucial for the higher education institutes in the UAE, articulate to govern axioms of HRM and ESSL. As universities rely on their human resources to deliver green performance, investigating the drivers facilitates effective intervention in promoting employee engagement in green innovative work behavior.
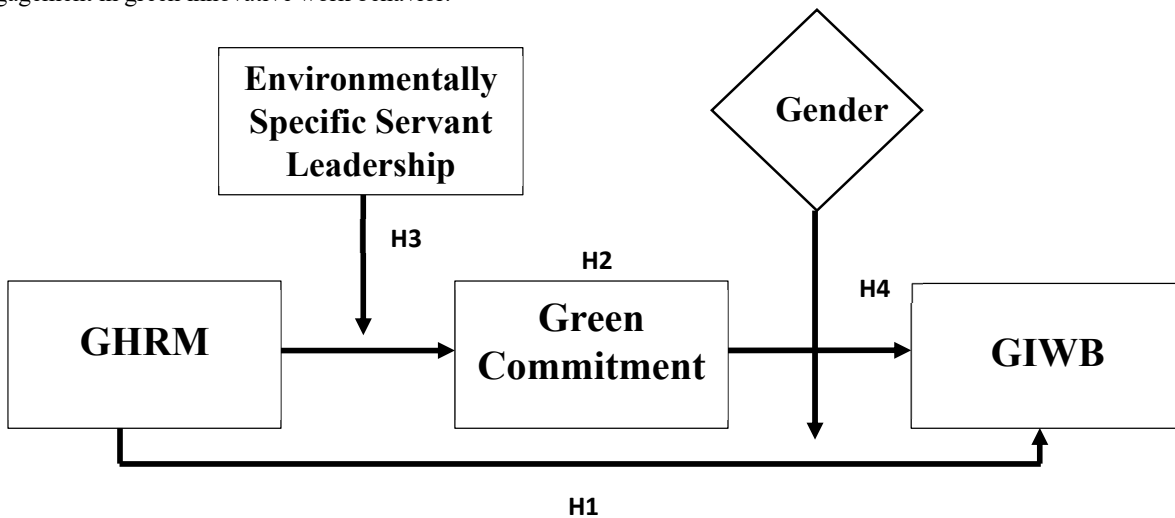

Fig. 1. The proposed model

4. Results

The validity of the questionnaire was evaluated through content validation and construct validation (Straub et al., 2004). Content validation provides evidence regarding the extent to which elements of an assessment tool are pertinent to and illustrative of the targeted construct for a certain assessment purpose (Almanasreh et al., 2019).

Twenty employees tested content validity to determine the degree to which each item fit the operational definition of the GHRM construct. Table 1 shows the demographic characteristics of the participants. Exploratory factor analysis was used to assess construct validation by measuring the reliability between items and factors when information on dimensionality is

limited (Hair et al., 2017). A cut-off point of 0.4 for factor loadings was used as the threshold to ensure that items with significant loadings appeared in the results. Confirmatory factor analysis then measured construct reliability using Cronbach's alpha, rho alpha, and composite rho (Hair et al., 2020). All items and constructs were found to have sufficient reliability.

Table 1

Participants' démographiques (N = 243)

Characteristic	Incidence	Percentage
Age, yr		
17–23	74	30.5%
24–30	104	42.8%
31–37	37	15.2%
38–42	19	7.8%
43–49	9	3.7%
Education		
University/High school	35	41.6%
Bachelor's degree	96	39.5%
Master's degree	35	14.4%
Doctorate degree	11	4.5%
Gender		
Female	113	46.5%
Male	130	53.5%

Discriminant validity was measured using Fornell's matrix of correlations (Hair et al., 2012). Structural equation modelling using SmartPLS version 4.0.9.8 was then applied to test the postulated hypothesis. The structural model was assessed using the bootstrapping procedure based on the statistical significance of each hypothesized path between the latent variables. The explanatory power of the constructs, path coefficient, and predictive relevance were estimated using R^2 value and Q^2, respectively. An R^2 value as low as 0.10 was considered acceptable. Additionally, the Root Mean Square Theta (RMS Theta) was utilized as a criterion to assess the model acceptance.

We applied SEM to study the cause-effect relationships between the defined constructs. Table 2 and Table 3 display the reliability and validity measures, while Table 4 demonstrates the outer loadings and VIF values.

Table 2

Reliability measures

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Environmentally specific servant leadership	0.908	0.92	0.928	0.653
Green Commitment	0.817	0.827	0.891	0.732
Green Human Resource Management	0.942	0.948	0.949	0.854
Green Innovative Workplace Behavior	0.925	0.928	0.941	0.728

The first construct was GHRM. H1 stated that GHRM positively affects GIWB. The construct of GHRM encompasses green recruitment and selection, green training and development, green performance management and appraisal, and green compensation and rewards. Of these, green recruitment, and selection as well as green compensation and rewards scored the highest. The path analysis between GHRM and GIWB was 0.292 (t-value=2.108; p = 0.035). Therefore, the first hypothesis was supported.

Table 3

Fornell's matrix (Validity)

	1	2	3	4
Environmentally specific servant leadership	**0.866**			
Green Commitment	0.844	**0.856**		
Green Human Resource Management	0.745	0.808	**0.938**	
Green Innovative Workplace Behavior	0.829	0.77	0.848	**0.853**

The second hypothesis (H2) posits that green commitment acts as a mediator in the relationship between green HRM and GIWB. This implies that green HRM influences green commitment, which in turn affects the occurrence of green innovative work behavior. All indicators scored similarly. The mediation effect between GHRM and GIWB through green commitment was supported (β= 0.329; *t*-value= 0.983; *P* < .000). Therefore, H2 was supported. The third hypothesis postulates that ESSL positively influences the relationship between GHRM and Green commitment. All indicators scored similarly. The path analysis between ESSL and GIWB was 0.033 (*t*-value= 1. 517; *P* = 0.048). Therefore, H3 was supported. The fourth hypothesis stated that gender has a moderator effect on GIWB. All indicators scored similarly. The path analysis between gender and GIWB was 0.151 (*t*-value= 1.014; *P* < .000). Therefore, H4 was supported. Table 5 shows the hypotheses validation. The SRMR value was 0.073, Chi-square measured 233.55, NFI was 0.691 and RMS Theta was 0.128. Therefore, the measurement model is accepted. Figure 2 shows the structure model.

Table 4
Outer loading and VIF

	Outer loading	VIF
ESSL1	0.62	1.396
ESSL2	0.897	3.94
ESSL3	0.888	4.103
ESSL4	0.872	3.529
ESSL5	0.844	2.986
ESSL6	0.78	2.286
ESSL7	0.713	1.978
GHRM1	0.787	3.293
GHRM2	0.834	5.782
GHRM3	0.804	3.528
GHRM4	0.724	2.289
GHRM5	0.747	3.083
GHRM6	0.716	3.924
GHRM7	0.757	3.89
GHRM8	0.638	4.293
GHRM9	0.651	4.817
GHRM10	0.764	4.98
GHRM11	0.675	4.633
GHRM12	0.594	1.881
GHRM13	0.806	3.844
GHRM14	0.811	2.958
GHRM15	0.81	3.935
GIWB1	0.895	4.333
GIWB2	0.861	3.679
GIWB3	0.834	2.408
GIWB4	0.843	3.034
GIWB5	0.822	2.918
GIWB6	0.852	2.429
GrCm1	0.897	2.116
GrCm2	0.836	1.82
GrCm3	0.832	1.684
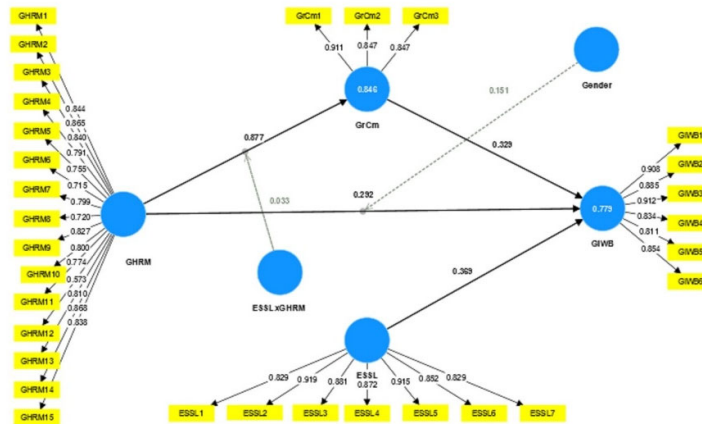
Fig. 2. Measurement model

Table 5
Hypothesis validation

Hypothesis	B-value	Mean	SD	T value	P	Validation
H1. Green Human Resource Management → Green Innovative Workplace Behavior	0.292	0.480	0.224	2.108	.035	Supported
H2. Green Human Resource Management → Green Commitment→ GIWB	0.329	0.124	0.119	0.983	.000	Supported
H3. *ESSL × GHRM → Green Commitment*	0.033	0.131	0.087	1.517	.048	Supported
H4. Gender × GHRM → Green Innovative Workplace Behavior	0.151	0.135	0.138	1.014	.000	Supported

5. Discussion

Globally, universities are intensifying their efforts to educate society about environmental sustainability. Consequently, HR departments are often considered pivotal in spearheading these initiatives within organizations, aiming to attract, retain, and develop a skilled workforce capable of meeting the demands of environmentally friendly practices and sustainability (Abbas et al., 2022). Relevantly, the choice to study at five universities in the UAE was made, including public and private institutions, different sizes, and varying geographical locations within the UAE. This diversity facilitates a more comprehensive understanding of the applicability of Green HRM practices across the higher education sector in the UAE.

The urgency of adopting environmentally conscious practices has never been more critical. As societies grapple with escalating ecological concerns, higher education institutes in the UAE must shift their paradigms to align with sustainability imperatives. A pivotal component of this transformation is the impetus towards GIWB. Previous studies (Saeed et al., 2019; Suharti & Sugiarto, 2020; Tanova & Bayighomog, 2022) have mainly concentrated on the implementation and adoption of green HRM in non-educational organizations (Aboramadan et al., 2021). GIWB consists of four dimensions: idea exploration, idea generation, idea championing, and idea implementation (Scott & Bruce, 1994). The Ability-Motivation-Opportunity (AMO) model, which proposes that employees' behavior is influenced by their ability to perform the task, their motivation to do so, and the opportunity or environmental support to perform it effectively. Other theories, including perceived organizational support (POS), that have been used to explain the relationship between green HRM and innovative work behavior include social exchange theory, which posits that employees who perceive that their organization cares about the environment and takes action to reduce its environmental impact are more likely to reciprocate by engaging in pro-environmental behavior (Paillé et al., 2016); and self-determination theory, which suggests that employees who feel a sense of autonomy, competence, and relatedness in their work environment are more likely to engage in green innovative behavior (Renwick et al., 2013).

Incorporating environmental values into recruitment demonstrates universities dedication to environmental sustainability. This connection encourages a positive emotional bond and commitment. Employees who resonate with the organization's eco-friendly values are more inclined to participate in GIWB, supported by their recognized and endorsed values. Offering training programs in environmental sustainability showcases an investment in employee growth, in harmony with AMO. This practice enriches the work experience, augmenting employees' feelings of competence and autonomy. Empowered employees are more prone to display GIWB. Engaged employees are more likely to contribute innovative ideas and perspectives to GIWB.

GHRM helps enhance employees' abilities by providing them with the necessary knowledge, skills, and capabilities to engage in environmentally responsible behaviors and practices. ESSL and GrCm foster motivation by instilling a sense of purpose, responsibility, and commitment towards environmentally sustainable actions in the workplace. GrCm plays a crucial role in mediating the relationship between GHRM and GIWB. This mediation effect can be a conduit, providing employees with the opportunity to translate their abilities and motivation into actual GIWB.

Realizing that cultivating green commitment is instrumental in propelling GIWB, organizations are increasingly embracing GHRM practices as a beacon of change. Green commitment, defined as employees' willingness and dedication to engage in environmentally sustainable behaviors and activities in the workplace (Appelbaum et al., 2000), plays a pivotal role in bridging the relationship between green HRM and GIWB.

By weaving eco-conscious values into organization management, leaders beckon employees to introspect and align their personal and professional convictions. GHRM practices help universities prioritize environmental sustainability and perceive that their values are acknowledged and supported. Bridging the chasm between theory and practice, ESSL goes beyond conventional leadership models and calls for environmental stewardship. Such leaders transcend transactional leadership norms, as they spearhead a culture where sustainability is directive and collective. By embodying green values, leaders encourage their teams to partake in GIWB.

Environmental education programs should be designed to engage both females and males effectively. It may be beneficial to tailor instructional methods and content to address the varying levels of interest and commitment to environmental issues. Educators and organizations can promote and support female leadership in environmental initiatives and sustainability projects.

In previous studies, controversial results were reported regarding the impact of gender diversity in the boards of directors on environmental practices (Anggadwita et al., 2017; Cronqvist & Yu, 2017; Francoeur et al., 2008). Including females in boards with low female representation and male-dominated management predicted environmental misconduct. The author argued for a more-gender inclusive strategy of appointing CEOs who significantly contribute to a company's environmental policies (Liu, 2018). Unlike Liu (2018), Glass et al. (2016) did not find an influence of gender diversity on the environmental practices of the studied American corporations. Moreover, larger female representation in the management sectors was not proved to be linked to better environmental practices (Glass et al., 2016). However, it was proposed earlier that women pretend to think in a green way but consume without thinking (Dobscha & Ozanne, 2001). Elmagrhi et al. (2019) studied the influence of female directors in 383 Chinese companies on the environmental practices of these companies. They found that the proportion of female directors positively affected the company's environmental performance. Moreover, the age of female directors positively influenced the adoption, implementation and disclosure of the company's environmental policies (Elmagrhi et al.,

2019). Pertinently, the board gender diversity (BGD) of a company's board of directors was reported to be associated with the company's commitment to environmental sustainability through innovation. Nadeem et al. argued that having a more diverse board of directors with more women in top leadership positions may lead to different perspectives and experiences being brought to the table. These different perspectives and experiences may lead to more creative and innovative ideas for environmental sustainability. Gender diversity may be associated with a more robust corporate social responsibility orientation, which can lead to greater ecological innovation. With the relationship being more pronounced in less profitable firms and in environmentally sensitive industries, further research is needed to fully understand the complex relationship between BGD and environmental sustainability (Nadeem et al., 2020).

6. Implications and conclusion

6.1 Theoretical Implications

First, we extend the HRM literature on its effect on employee work behavior and attitudes and speculate that green HRM is likely to drive employees to demonstrate green innovative work behavior because favorable green HRM sets a suitable work environment and work conditions (Darvishmotevali & Altinay, 2022). On this note, we also extend the green innovative work behavior literature by providing empirical evidence that employees are likely to exhibit such behavior when the work environment is conducive for them to do so (Javed et al., 2019). ESSL's influence dovetails with workflow, and the three-pronged approach to green commitment succinctly captures the essence of dedication to sustainability. Intrinsic motivation, which originates from personal values and genuine passion, emerges as a pivotal force that empowers individuals to wholeheartedly embrace sustainable practices. This empowerment is rooted in the sense of ownership and purpose it imparts, acting as a catalyst that magnifies the innate drive to contribute to sustainability initiatives.

Additionally, social identity plays a crucial role in fortifying commitment by fostering a sense of belonging within a community that shares common sustainable values. The phenomenon of advocacy further intensifies this sense of belonging, as individuals assume the role of vocal advocates for sustainability. Through their advocacy efforts, they not only solidify their own commitment but also inspire and mobilize others to align themselves with the cause. At the heart of this multifaceted commitment lies the theory of multi-dimensional commitment. This theory sheds light on the intricate nature of dedication to sustainability, emphasizing that commitment extends beyond single dimensions. It is a convergence of factors that includes alignment with the organization's eco-friendly objectives, personal convictions, and active involvement in green initiatives. The result is a holistic commitment that transcends traditional notions of dedication.

6.2 Practical Implications

Recognizing the UAE's proactive stance on sustainability and innovation, the integration of ESSL and green commitment takes center stage. By showcasing how ESSL, rooted in empathy, empowerment, and support, does not impede operations but enhances them, this study presents a pioneering perspective on leadership's interplay with work processes. This insight enriches servant leadership theories and provides a compelling narrative for organizations incorporating sustainable leadership practices (Garwe & Thondhlana, 2022).

Universities can cultivate a culture of environmental responsibility by integrating green criteria across various HR domains like recruitment, training, performance management, and rewards. Educators can encourage female students to aspire to leadership positions in sustainability and environmental advocacy. Demonstrating authentic support for employees' involvement in environmental initiatives reinforces their commitment to sustainability goals. ESSL empowers employees and nurtures a shared sense of purpose in pursuing pro-environmental actions. By investing in leadership development programs that foster ESSL, universities can magnify the positive effects of GHRM on Green Commitment. Commitment to sustainability encompasses dimensions beyond quantifiable metrics, managers that can refine HR and leadership strategies. This includes acknowledging the influence of intrinsic motivation, social identity, multi-dimensional alignment, and advocacy on employees' commitment to eco-friendly practices. Encouraging vocal support for sustainability and advocacy amplifies a sense of shared identity and inspires others to partake in similar behaviors. To reinforce the alignment of personal and organizational values, organizations should incorporate sustainability goals into performance objectives and acknowledge employees' contributions to eco-friendly initiatives. Managers can deepen commitment by understanding the multi-dimensional nature of employees' dedication to sustainability, acknowledging that it extends beyond work-related factors. Encouraging alignment with personal beliefs and broader environmental objectives further fosters a comprehensive commitment to sustainable practices.

7. Research Limitations and Future Directions

This study focused on the United Arab Emirates, but cultural norms can significantly impact employees' perceptions and behaviors. Conducting comparative studies across various cultural backgrounds could shed light on the cultural factors that influence the effectiveness of these mechanisms in promoting sustainable behaviors. For instance, how might the impact of ESSL on Green Commitment differ between collectivist and individualist cultures? Does the effectiveness of GHRM practices vary based on cultural preferences for environmental responsibility? Exploring these variations could offer insights into tailoring HR and leadership approaches for sustainability on a global scale.

While the current study provides valuable cross-sectional insights, longitudinal research could offer a deeper understanding of how these constructs evolve and interact over time. This would enable researchers to establish the temporal order of the relationships and better assess the effectiveness of ESSL and Green HRM practices in fostering lasting commitment and sustainable behaviors. For instance, does an increase in ESSL behaviors lead to a subsequent increase in Green Commitment and, consequently, more frequent engagement in GIWB over time?

Stakeholder considerations introduce a broader perspective, recognizing the interconnectedness of individuals, communities, and the environment. Empowerment empowers individuals to consider these intricate relationships and make conscientious choices that prioritize sustainability.

8. Conclusion

The study validated a notable and positive impact of GHRM on GIWB, indicating that practices such as green recruitment, selection, training, performance management, and rewarding systems significantly prompt employees' innovative green behavior at the UAE higher education institutes. Furthermore, it sheds light on the intricate interplay among GHRM, Green Commitment, ESSL, and GIWB, providing crucial insights for higher education institutions in the UAE to embrace environmentally conscious leadership practices and GHRM strategies.

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