Nexus of green human resource management and sustainable corporate performance: the mediating roles of green behavior and green commitment

Thanh Tiep Le and Duc Hieu Tham

Ho Chi Minh City University of Economics and Finance, Ho Chi Minh, Vietnam

Abstract

Purpose – The driving force behind this study is the need to learn more about the ways in which green human resource management (GHRM) can impact sustainable corporate performance (SCP), especially in the context of Ho Chi Minh City's manufacturing sector. The primary objective is to analyze the roles of GHRM, green behavior (GBH) and green commitment (GCM) in relation to SCP, as well as identify the mediating roles of green behavior and green commitment in the relationship between GHRM and SCP.

Design/methodology/approach – The research design employs a quantitative approach to investigate the nexus of GHRM and SCP, with a focus on the manufacturing sector in Ho Chi Minh City. Methodologically, the study integrates the ability-motivation-opportunity (AMO) and resource-based view (RBV) frameworks to construct a comprehensive theoretical model. Data are gathered from a sample comprising 322 senior managers and directors representing various enterprises. Analysis is conducted utilizing Smart PLS software version 3.3.7, employing partial least squares structural equation modeling (PLS-SEM) to assess both first-level and second-level variables in a two-step process.

Findings – The empirical findings underscore significant relationships between GHRM, green behavior, green commitment and SCP. Specifically, the study reveals that GHRM positively influences green behavior, green commitment and SCP. Additionally, both green behavior and green commitment exhibit positive effects on SCP. Furthermore, the research confirms the pivotal mediating roles of green behavior and green commitment in the relationship between GHRM and SCP.

Originality/value – In terms of originality and value, this study makes notable contributions to both theoretical understanding and practical implications in the field of sustainable business management. By delving into the intricate interplay between GHRM, green behavior, green commitment and SCP, this research extends existing knowledge and offers novel insights. Moreover, the identification of the mediating roles of green behavior and green commitment enriches the theoretical frameworks in this domain. The findings provide practical implications for businesses, particularly in Ho Chi Minh City's manufacturing sector, by emphasizing the significance of optimizing human resource practices for achieving sustainable development goals. This research thus contributes to enhancing competitiveness and sustainability in similar industries, offering valuable guidance for strategic decision-making and policy formulation.

Keywords Green human resource management, Sustainable corporate performance, Green commitment, Green behavior

Paper type Research paper

1. Introduction

Manufacturing enterprises are increasingly facing global pressures related to resource scarcity, climate change and stability requirements which present various challenges, including reducing the adverse effects on society and the environment while ensuring the sustainability of business operations (Khan *et al.*, 2020). In this context, GHRM has become an integral part of management strategies, aiding businesses in achieving long-term objectives by helping to develop the green values of employees and support a company's policies for dealing with market competitors (Ogiemwonyi *et al.*, 2023), as well as creating a significant difference in operational efficiency for the enterprise (Hendarjanti and Nawangsari, 2022).

GHRM and SCP are two crucial facets of environmental management and business sustainability (Mousa and Othman, 2020) and GHRM facilitates human resource management (HRM) goals and ecological considerations that ensure operations align with sustainability principles. Conversely, SCP measures the success and efficiency of a business in maintaining and developing social and natural environments (Awwad Al-Shammari *et al.*, 2022). However, in terms of environmental management and ensuring sustainability, GHRM and SCP cannot exist independently. Not only do employees' behavior and their commitments to the environment connect GHRM to SCP, they also significantly contribute to promoting the ability to sustain and develop business operations over the long term without causing harm to the environment and society, while maintaining effectiveness and competitiveness (Malik *et al.*, 2021; Ngo and Ngo, 2023; Setyaningrum and Muafi, 2023).

Across the globe, GHRM has garnered significant attention from researchers but has yet to receive adequate consideration in Vietnam, where research is often limited to the establishment of models and measurement criteria and lacking in-depth exploration of the impacts of GHRM (Ngo *et al.*, 2023; Dang, 2023). The majority of current studies rely on the AMO theory (Pham *et al.*, 2022; Ngo *et al.*, 2023), yet there is a lack of comprehensive integration with the RBV framework. Moreover, research efforts have predominantly focused on sectors such as hospitality (Pham *et al.*, 2022; Luu, 2022) and food services (Phan *et al.*, 2023), with limited attention to the manufacturing sector, particularly in Ho Chi Minh City (HCMC).

Studies examining the relationship between GHRM and sustainable operational effectiveness often concentrate solely on environmental efficiency aspects (Phan *et al.*, 2023; Nguyen *et al.*, 2024), with scant literature addressing economic, environmental and social perspectives. Additionally, the impact of GHRM primarily revolves around promoting green behavior (Ngo *et al.*, 2023; Luu, 2022) or green commitment (Ngo and Ngo, 2023) among employees, andthe intermediary role of green behavior and commitment in the relationship between GHRM and sustainable operational effectiveness remains largely unexplored in extant literature. This underscores the imperative need for research on the nexus between GHRM, green behavior, green commitment and sustainable operational effectiveness, aiming for a comprehensive understanding of GHRM's role in shaping and fostering the sustainable development of enterprises. From the previous points, it is evident that there is a significant gap in this field, emphasizing the necessity of filling this void.

To address this gap, this research is guided by several key concepts that delve into the complex relationships within this context. First, this study investigates how GHRM influences green commitment and green behavior in the dynamic environment of the manufacturing industry in HCMC. Second, it evaluates the extent to which GHRM, green behavior and green commitment play pivotal roles as determinants of sustainable performance for enterprises operating in this locality. Third, the study thoroughly examines the mediating role of green behavior and green commitment to elucidate their influence on shaping the link between GHRM and SCP.

This research contributes significantly to both theoretical understanding and practical implications in the field of business management. By integrating RBV theory and the AMO framework, it establishes a robust theoretical foundation for exploring the interrelationships among GHRM, green behavior, green commitment and SCP. Through a systematic investigation of the research inquiries, it seeks to comprehensively understand the dynamics of interaction and influence among the examined factors. The resulting insights offer valuable guidance for business managers, particularly those operating within the manufacturing sector and related domains. This clarity facilitates the formulation and implementation of GHRM strategies, thereby enhancing green commitment and green behavior, ultimately improving the sustainability and effectiveness of organizational endeavors. Furthermore, this research sheds light on the confirmed relationship between GHRM and the structures of green behavior, green commitment and SCP, enriching the theoretical discourse surrounding GHRM. This deeper understanding provides profound insights into the mechanisms through which these factors interact and impact organizational performance and sustainability. Such insights are particularly crucial in today's business landscape, characterized by increasing demands for resource optimization and future-proof strategies. Moreover, the invaluable insights gleaned from this research offer practical guidance for business managers operating in the manufacturing sector and related fields in HCMC. By fostering green commitment and green behavior, businesses can enhance sustainability and operational efficiency while promoting sustainable development at the local and national levels. This concerted effort represents a significant step towards promoting green economic models and socially responsible development, both locally and globally.

2. Theoretical underpinning and hypotheses development

2.1 Theoretical underpinning

The conceptual framework of this study is based on the resource-based view (RBV) proposed by Barney (1991) and the ability-motivation-opportunity (AMO) theory presented by Appelbaum et al. (2000). The AMO theory is well known for its importance in examining the relationship between HRM practices and organizational effectiveness (Boselie et al., 2005; Khan et al., 2020). It emphasizes that in order to maximize organizational efficiency, three key factors – ability (A), motivation (M) and opportunity (O) – must be aligned and integrated (Chowdhury et al., 2022). The AMO framework comprises intermediary variables concerning employees' abilities, motivations and opportunities for engagement (Boselie et al., 2005). The GHRM practices of providing employees with capabilities (selective recruitment, training, education and development of talented personnel), motivation (policies and procedures) and opportunities (employee attraction) positively influence behavior and ultimately lead to higher performance (Khan et al., 2020). The RBV theory asserts that organizations can gain a competitive advantage by accumulating diverse and efficient resources, such as knowledge, skills and expertise. It also emphasizes careful utilization of resources to ensure organizational sustainability (Ngo and Ngo, 2023). RBV theory highlights the examination of unique resources and capabilities owned by an organization to create competitive value. In this context, GHRM is considered a special resource, so RBV can explain how GHRM enhances competitive advantage through promoting green behaviors and commitment among employees. RBV theory serves as a theoretical lens to understand the relationship between GHRM and sustainable effectiveness (Bon et al., 2018). Based on these perspectives, this study selects AMO and RBV as the theoretical foundations for elucidating how GHRM fosters the green resources of organizations, thereby enhancing the sustainable effectiveness of businesses. This alignment is also echoed in the findings of Khan et al. (2020).

2.2 Hypotheses development

2.2.1 Green human resource management. GHRM aims to support the implementation of ecological principles and foster environmentally-friendly attitudes among employees (Bombiak, 2019). It is the process of harnessing human resources in the workplace to attain organizational objectives, with deliberate efforts to ensure that this process contributes to environmental conservation (Mwita, 2019). The primary aim of GHRM is to enhance employees' understanding of environmental management intricacies, encompassing requisite actions, operational mechanisms and the resultant environmental benefits (Ahmad, 2015).

In the realm of GHRM, the approach through key constituents such as green assessment and rewards, green training and development, and green selection and recruitment has garnered significant scholarly attention. These are the primary domains of GHRM, pivotal aspects of human capital that contribute to enhancing employees' adherence to green management principles (Cherian and Jacob, 2012). By focusing on these three dimensions, organizations can ensure that they are implementing green practices in everything from recruitment processes to employee development to performance evaluation and rewards. Furthermore, the adoption of the GHRM approach through these three perspectives is also supported in the research conducted by Khan *et al.* (2020, 2021).

Green selection and recruitment involves an environmental focus, where proactive candidates with environmental expertise for present and future job opportunities are sought (Khan *et al.*, 2019). This process includes strategically hiring based on a candidate's alignment with a company's environmental values, knowledge and actions (Malik *et al.*, 2021) and aims to attract potential employees through the company's environmental practices by integrating ecological considerations throughout the recruitment process (Khan *et al.*, 2020).

Green training and development, as interpreted by Mwita (2019), involves equipping employees with the requisite competencies to mitigate environmental pollution and foster workplace eco-conservation by integrating eco-friendly methodologies and technologies into training programs. Khan *et al.* (2021) underscore the significance of companies' concerted endeavors towards consistently educating their workforce about environmental practices, with a pronounced emphasis on such training, vis-à-vis other modalities. This strategic prioritization reflects a discerning resource allocation strategy, acknowledging environmental training as a pivotal investment. Additionally, Veerasamy *et al.* (2023) accentuate the advocacy for comprehensive environmental policy compliance inherent in providing environmental training to all staff members, thereby reinforcing organizational commitment to environmental stewardship.

Lastly, green assessment and rewards encompass evaluating and rewarding issues aligned with a company's environmental goals, responsibilities and policies (Khan *et al.*, 2019). This process involves assigning individual environmental objectives to employees and conducting assessments based on their contributions to environmental management (Malik *et al.*, 2021). Subsequently, these evaluations document the outcomes of individual performance, with monetary rewards allocated for exemplary environmental performance and public recognition given to outstanding environmental achievements (Khan *et al.*, 2021).

Attitude, knowledge and environmental responsibility awareness have long been regarded relevant to environmentally responsible behavior (Hines *et al.*, 1987). Recent literature suggests that knowledge sharing about green practices influences how recruitment, development and training activities impact green behaviors and green commitment (Khan *et al.*, 2022). Additionally, the AMO and RBV theories demonstrate that green commitment and green behavior are outcomes of GHRM's care and conditions for personal development, transforming employees into unique resources capable of engaging in green activities. GHRM's training and development provides employees with the ability to participate in environmentally-focused activities by creating opportunities for them to do so.

Simultaneously, GHRM can also motivate employees by promoting green commitment and green behavior values within the organization, including providing rewards or incentives for green initiatives. Earlier research demonstrated that GHRM positively affects green behavior (Shahzad *et al.*, 2023; Sabokro *et al.*, 2021), and implementing GHRM correctly enhances green commitment (Ali *et al.*, 2022).

Based on the foregoing, the study proposes the following hypotheses:

H1. GHRM positively influences GBH.

H2. GHRM positively influences GCM.

2.2.2 Sustainable corporate performance. SCP can be achieved if companies consider reducing environmental impact and adjust social, environmental, economic and financial factors for success in the corporate sector (Nawangsari *et al.*, 2021). This study approaches SCP from the perspective of the triple bottom line (TBL) framework introduced by Elkington (2007), considering the central role of sustainability in a business (Carroll, 2021). Specifically, SCP is measured through three critical factors, namely social, environmental and financial, as proposed by Fauzi *et al.* (2010) with their fundamental and effective foundation for evaluating SCP. Measuring SCP from this TBL perspective offers a comprehensive view of how businesses influence financial, social and environmental aspects, determining their role in promoting sustainability. Furthermore, this perspective is demonstrated and applied by Awwad Al-Shammari *et al.* (2022).

Based on the RBV theory, GHRM can be considered a strategic and valuable resource for an organization that promotes SCP, thereby optimizing the competitive advantages, differentiation and strategic value of the organization. Current literature reports that implementing GHRM activities brings significant benefits to manufacturing companies, including social, financial and environmental aspects (Ogiemwonyi *et al.*, 2023) and that proper implementation of GHRM has a beneficial effect on SCP (Mousa and Othman, 2020; Awwad Al-Shammari *et al.*, 2022).

Based on the above rationale, the study proposes the subsequent hypothesis:

H3. GHRM positively influences SCP.

2.2.3 Green behavior and green commitment. The commitment of employees serves as work performance indicator as employees committed to an organization strive to enhance their work performance and contribute to its business sustainability (Hendarjanti and Nawangsari, 2022). Green commitment is defined as employee intention to showcase their value to an organization by achieving sustainable behavioral characteristics (Ngo and Ngo, 2023) and serves as a cognitive framework, embodying both a feeling of connection and duty toward ecological considerations in the workplace (Nawangsari *et al.*, 2023). Moreover, green commitment also reflects employee concern for a company's environmental issues, extending beyond mere job responsibilities to demonstrate a profound personal responsibility (Raineri and Paillé, 2015). These ordinary employees are dedicated individuals who actively support all efforts to protect the environment, considering it an integral part of their daily thinking and actions (Afsar and Umrani, 2020).

Green behavior is defined as "scalable actions and behaviors that employees engage in that are linked with and contribute to or detract from environmental sustainability" (Ones and Dilchert, 2012) and involves employees actively participating in activities that improve environmental quality (Ogiemwonyi *et al.*, 2023). In the context of GHRM, green behavior is not only a theoretical expression but also a practical action that employees take toward the environment. Tasks include waste sorting, sharing information about sustainability, nature protection, awareness of the environment's role and genuine concern about resources for future generations (Veerasamy *et al.*, 2023).

Based on the AMO theory, employees possessing skills and knowledge about reducing or avoiding environmental pollution and conserving the environment at the workplace are more likely to generate better efficiency than those without such skills (Mwita, 2019).

Evidence suggests that implementing green behavior enhances business sustainability (Nawangsari *et al.*, 2023) and green behavior has the same positive impact as SCP (Shahzad *et al.*, 2023). Furthermore, green commitment is also a motivating factor for improving SCP (Nawangsari *et al.*, 2021).

Therefore, the following hypotheses are proposed in the study:

H4. GBH positively influences SCP.

H5. GCM positively influences SCP.

2.2.4 Relationships involved in the Co-mediation of green behavior and green commitment in the relationship between GHRM and SCP. If a company's primary focus is on attaining sustainability managers should incorporate GHRM organizational culture initiatives for employees. These initiatives would cultivate an understanding among employees about the significance of adopting environmentally-friendly practices and motivate them to actively contribute to fulfilling company environmental and social missions, along with individual efforts, toward sustainability goals (Hendarjanti and Nawangsari, 2022).

Not only does GHRM influence the long-term improvement of environmental sustainability, it also encourages the formation of an environmentally-friendly culture (Roscoe *et al.*, 2019). By establishing this culture, employees become attuned to the significance of adopting green attitudes and behaviors, as well as committing to company sustainability goals. This aligns with the AMO and RBV theories, where GHRM, as its core function, has created the ability for the organization to implement green measures in the workplace, provide opportunities and motivate individuals to embody the values of green behavior and green commitment.

In the context of GHRM, green behavior and green commitment stand out as 'scarce resources' for an organization, not only due to cultural differences but also because of their ability to create unique and difficult-to-replicate value compared to competitors. Green behavior and green commitment play a prominent role in highlighting the importance of GHRM (Shahzad *et al.*, 2023; Sabokro *et al.*, 2021; Ali *et al.*, 2022) and significantly impact the sustainability performance of a business (Shahzad *et al.*, 2023; Nawangsari *et al.*, 2021). Practically, through the environmentally-friendly behavior of employees within an organization, GHRM has promoted an increase in SCP (Malik *et al.*, 2021) and green commitment significantly mediates the relationship between GHRM and sustainable development (Ngo and Ngo, 2023).

With the above rationale, the study proposes the following hypotheses:

H6. GBH plays a positive mediating role between GHRM and SCP.

*H7.* GCM plays a positive mediating role between GHRM and SCP.

Drawing on the synthesized hypotheses and building upon the arguments articulated earlier, this study introduces the subsequent research model as in Figure 1 below:

3. Research design and methodology
3.1 Sampling method and data collection
According to Tabachnick and Fidell (2007), conducting a study using the SEM framework requires a sufficiently large sample size, with 300 or more samples considered optimal. This study incorporated a random sample from a reliable email list of manufacturing businesses in HCMC, distributing 389 emails to directors and senior managers. The sample was chosen for

Figure 1.
Proposed
research model
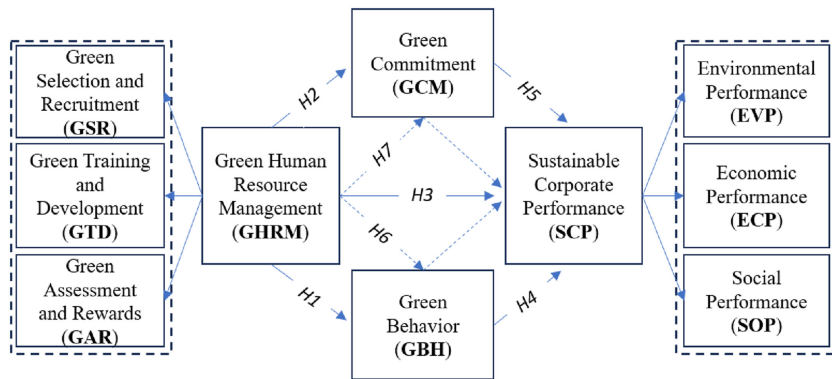
Source(s): Authors' own work

its knowledge of HRM and ability to provide detailed insights into GHRM's significance for business sustainability. The survey included 39 questions reflecting the main study variables and basic respondent information (gender, age, workforce scale, business sector) and reminder emails were sent to encourage a high response rate and data quality, while respondent anonymity and personal information protection were ensured for honest and accurate responses and there were no incentives to avoid data bias. Feedback was obtained from 341 respondents via Google Forms attached to the email, spanning from July to October 2023.

3.2 Data processing method

Following the exclusion of samples that did not meet the specified criteria, 322 final data samples were collected. The primary reason for choosing PLS-SEM in this study is its suitability for multidimensional research models where there are multiple dependent and independent variables, as well as non-linear relationships between variables. Additionally, PLS-SEM offers the advantage of being able to handle small sample sizes and data that do not adhere to normal distribution assumptions (Hair *et al.*, 2016). This sample was processed using SmartPLS 3 software to assess both measurement and structural models, and bootstrap tests were conducted to check the appropriateness of the relationships in the research model.

3.3 Variable measurement

The study employed a quantitative approach. After synthesizing and evaluating the existing literature to construct reference scales from prior studies, discussions were initiated with five managers representing manufacturing businesses in HCMC. This dialogue played a crucial role in adjusting the survey questionnaire structure to reflect the nuances of the local business environment more accurately. Subsequently, a preliminary study was conducted with 30 samples to gain insights that informed necessary adjustments to the initial scales. Ultimately, this iterative process led to the refinement and detailed presentation of the scales (Table 1). Throughout these stages, careful consideration was given to identifying and selecting appropriate scales to ensure precision and reliability in measuring crucial factors such as GHRM, green behavior, green commitment and SCP.

The scales in the questionnaire were written in Vietnamese to facilitate comprehension for respondents and referenced and adjusted based on prior research: the green selection and recruitment (GSR) scale drew insights from the studies by Khan *et al.* (2021) and Malik *et al.* (2021) the green training and development (GTD) scale was informed by the

Item		Reference source
	Green selection and recruitment (GSR)	Khan *et al.* (2021)
GSR1	The environmental performance of company practice draws employees	Malik *et al.* (2021)
GSR2	A company gives preference to hiring individuals with a background in environmental knowledge	
GSR3	The selection of employees considers the influence of environmental motivation	
GSR4	Environmental issues are taken into account at every stage of the hiring process	

	Green training and development (GTD)	
GTD1	A company continuously provides training on environmental practices	Khan *et al.* (2021)
GTD2	A company prioritizes green training over other types of training	Veerasamy *et al.* (2023)
GTD3	Allocating resources to environmental training is a crucial investment	
GTD4	Providing environmental training to every employee aims to advocate for environmental policy	

	Green assessment and rewards (GARs)	
GAR1	Each employee is assigned individual environmental objectives	Khan *et al.* (2021)
GAR2	Assessment is conducted for contributions to environmental management	Malik *et al.* (2021)
GAR3	The outcomes of individual performance evaluations are documented	
GAR4	Cash rewards for acknowledging environmental performance	
GAR5	Public recognition is given for environmental performance	

	Green behavior (GBH)	
GBH1	I separate biodegradable and nonbiodegradable waste when it is dropped	Veerasamy *et al.* (2023)
GBH2	I educate my colleagues about eco-friendly practices	George and Jayakumar
GBH3	I believe that preserving nature is always better than destroying and then repairing it	(2019)
GBH4	I understand that the environment is very important for life on earth	
GBH5	I worry about the possibility of depleting natural resources for future generations	

	Green commitment (GCM)	
GCM1	I really care about environmental issues in my organization	Afsar and Umrani
GCM2	I feel it would be a mistake not to support my company's environmental efforts	(2020)
GCM3	The environmental well-being of my company holds significant value for me	Raineri and Paillé (2015)
GCM4	I feel a sense of duty to support the environmental efforts of my company	
GCM5	I truly believe that my company's environmental issues are my own	
GCM6	I personally feel connected to my company's environmental concerns	
GCM7	I feel obligated to support my company's environmental initiatives	
GCM8	I appreciate my company's environmental efforts	

	Economic performance (ECP)	
ECP1	Return on investment (ROI) has risen above the industry average in recent years	Khan *et al.* (2021)
ECP2	Revenue growth has exceeded the industry average in recent years	Maletič *et al.* (2014)
ECP3	Profit growth has outpaced the industry average in recent years	
ECP4	Market share has increased in recent years	

(*continued*)

Table 1.
Variables and items

Item		Reference source
	Environmental performance (EVP)	Khan *et al.* (2021)
EVP1	Raw material consumption efficiency has improved in recent years	Maletič *et al.* (2014)
EVP2	Resource use, including thermal energy, electricity and water, has decreased in recent years (in terms of per unit of income or per unit of production)	
EVP3	The proportion of recycled materials has increased in recent years	
EVP4	Waste rates (e.g. kilogram per unit of product, kilogram per employee per year) have declined in recent years	
	Social performance (SOP)	Khan *et al.* (2021)
SOP1	The turnover rate has decreased in recent years	Maletič *et al.* (2014)
SOP2	Employee satisfaction has increased in recent years	
SOP3	Employee motivation has increased in recent years	
SOP4	Health and safety performance has improved in recent years	
SOP5	Personnel training and coaching (average number of training days per employee per year) has increased in recent years	

Table 1. **Source(s):** Authors' own work

research of Khan *et al.* (2021) and Veerasamy *et al.* (2023) the green assessment and rewards (GAR) scale was derived from the work by Khan *et al.* (2021) and Malik *et al.* (2021) green behavior; insights were derived from Veerasamy *et al.* (2023) and George and Jayakumar (2019) and the green commitment scale was informed by the research of Afsar and Umrani (2020) and Raineri and Paillé (2015). Scales related to economic performance, including economic corporate performance (ECP), were referenced from the studies of Khan *et al.* (2021) and Maletič *et al.* (2014). Environmental performance (EVP) was drawn from the research of Khan *et al.* (2021) and Maletič *et al.* (2014) while social performance (SOP) was informed by the articles of Khan *et al.* (2021) and Maletič *et al.* (2014).

A Likert scale with five levels ranging from 1 to 5 was utilized and Table 1 presents the eight components of the proposed model, specifically GHRM and SCP measured based on second-order variables. For GHRM, the components included GSR (green selection and recruitment), GTD (green training and development) and GAR (green assessment and rewards). As for SCP, the components consisted of ECP (economic performance), EVP (environmental performance) and SOP (social performance).

The research method involved a quantitative approach. A total of 39 observations were conducted to establish the questionnaire presented above and supplementary variables such as gender, age, workforce scale and industry were also taken into account.

4. Results

4.1 Sample characteristics

The dataset comprising 322 survey participants (Table 2) provided a diverse representation crucial for analyzing the impact of GHRM, green behavior and green commitment on SCP. The gender distribution, skewed towards males, mirrored the industry's gender dynamics, where men dominate and reflect the reality within the local manufacturing industry. Age diversity was evident, with a significant portion falling within the 35–50-year age range, indicating seasoned expertise and active involvement. The sample predominantly represented the processing and manufacturing sector (94.7%), emphasizing its importance within the study context and underscoring pertinent questions regarding GHRM in this domain. The focus on businesses with fewer than 249 employees, which constituted the majority, highlighted their significance in the economic landscape. Despite variations, these

		No.	%
Gender	Male	220	68.3
	Female	102	31.7
Age	35–40 years old	99	30.7
	41–45 years old	104	32.3
	46–50 years old	68	21.1
	51 years old and above	51	15.8
Workforce scale	Less than 10 employees	85	26.4
	10 to 49 employees	119	37.0
	50 to 249 employees	82	25.5
	250 employees and above	36	11.2
Business sector	Mining industry	4	1.2
	Processing and manufacturing industry	305	94.7
	Electricity and gas production and distribution	6	1.9
	Water supply, management and waste treatment	7	2.2

Source(s): Authors' own work

Table 2.
Demographic profile of
the respondents

findings aligned with existing literature, contributing to tailored HRM and business
strategies for the manufacturing industry in HCMC, Vietnam.

4.2 Measurement model analysis
The GHRM and SCP factors in the model do not have observational variables but are second-
order variables measured through the second-order component variables (Figure 2).

The results of analyzing the first-order variable measurement model (Table 3) revealed
that the variables GSR, GTD, GAR, ECP, EVP and SOP have loading coefficients greater than
0.7, Cronbach's alpha value from 0.836 to 0.904, CR value from 0.889 to 0.933, and AVE
value > 0.5. These results show that these variables can be applied to measure quadratic
scales for GHRM and SCP in the research model. Through this, the official model has been
simplified to include the variables GHRM, GBH, GCM and SCP (Figure 2).

The results of the second-order latent variable measurement model analysis demonstrated
that the scales were reliable, with Cronbach's alpha and CR values > 0.7 and correlation
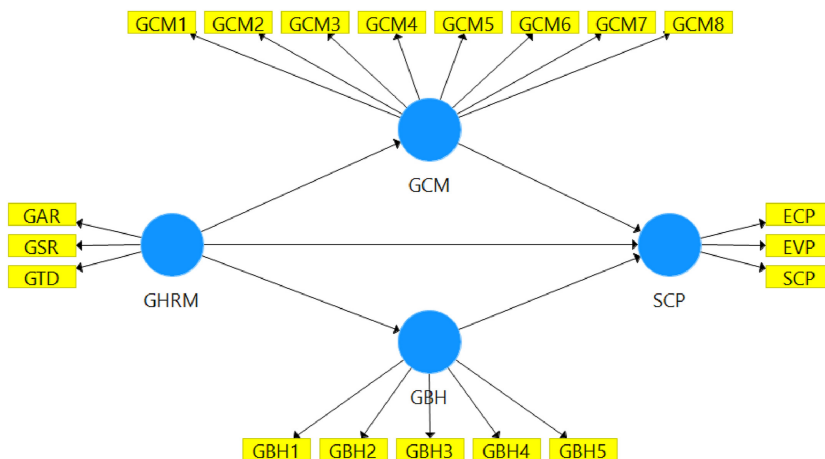
Source(s): Authors' work

Figure 2.
Diagram of SEM
analysis result with
bootstrapping

Variables	Factor loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)	VIF
ECP	0.835–0.884	0.877	0.916	0.731	2.487–3.204
EVP	0.800–0.940	0.903	0.932	0.776	2.107–4.580
GAR	0.824–0.860	0.902	0.927	0.718	2.665–4.000
GBH	0.739–0.884	0.896	0.924	0.708	2.218–4.681
GCM	0.710–0.816	0.899	0.919	0.587	2.054–4.581
GSR	0.748–0.855	0.836	0.889	0.668	2.152–2.524
GTD	0.824–0.927	0.904	0.933	0.779	2.199–4.553
SOP	0.807–0.871	0.901	0.927	0.716	3.560–4.352
Source(s): Authors' own work					

Table 3.
Construct reliability and validity

coefficients exceeding 0.3. Furthermore, the factor loadings of GHRM and SCP variables exceed 0.6, with factor loadings of GBH and GCM both surpassing 0.7. Moreover, the average variance extracted (AVE) values were greater than 0.5. Furthermore, the Fornell–Larcker criteria (Fornell and Larcker, 1981) and heterotrait-monotrait ratio (HTMT) (Table 4) were employed to assess discriminant validity. The results indicate that the square root of AVE is higher than the correlation between latent variables and the HTMT values are below 0.85 (Kline, 2015), thus supporting discriminant validity.

4.3 Structural model analysis
The analysis results indicate that the model does not violate multicollinearity, with the highest variance inflation factor (VIF) value being 4.681 (Table 3), which is less than 5 (Hair *et al.*, 2016). Following this step, the structural model and research hypotheses were examined by evaluating the analysis results through bootstrapping. The direct and indirect impacts are displayed in Table 5.

	ECP	EVP	GAR	GBH	GCM	GSR	GTD	SOP
ECP								
EVP	0.330							
GAR	0.453	0.209						
GBH	0.489	0.192	0.342					
GCM	0.484	0.272	0.467	0.483				
GSR	0.419	0.200	0.206	0.319	0.289			
GTD	0.351	0.136	0.421	0.301	0.385	0.145		
SOP	0.454	0.122	0.240	0.326	0.314	0.297	0.084	
Source(s): Authors' own work								

Table 4.
Heterotrait-monotrait ratio (HTMT) results

Casual path	Hypotheses	Path coefficient	*t*-statistics	P Values	Results
GHRM → GBH	H1	0.408	8.645	0.000	Accepted
GHRM → GCM	H2	0.496	11.034	0.000	Accepted
GHRM → SCP	H3	0.321	5.473	0.000	Accepted
GBH → SCP	H4	0.218	3.464	0.001	Accepted
GCM → SCP	H5	0.210	3.619	0.000	Accepted
GHRM → GBH → SCP	H6	0.089	3.105	0.002	Accepted
GHRM → GCM → SCP	H7	0.104	3.357	0.001	Accepted
Source(s): Authors' own work					

Table 5.
Direct and indirect effects

The analysis results in Table 5 confirmed the statistical significance of all examined direct relationships, meeting the established significance threshold (*p*-value <0.05). Consequently, hypotheses H1, H2, H3, H4 and H5 were affirmed.

Additionally, Table 5 displays the results of the intermediate impact analysis of green behavior and green commitment between GHRM and SCP based on relevant parameters, including path coefficients, *p*-values and VAF (Hair *et al.*, 2014, 2016). The outcomes indicated positive path coefficients and *p*-values less than 0.05, indicating that the corresponding relationships were positive and statistically significant. Moreover, VAF provided information about the intermediate influence of green behavior and green commitment between GHRM and SCP. The VAF values were 22% and 24% for the relationships GHRM - > green behavior - > SCP and GHRM - > green commitment - > SCP, respectively. Since these VAF values were greater than 20%, green behavior and green commitment play intermediate roles in transmitting the impact of GHRM to SCP. Thus, hypotheses H7 and H6 are accepted.

5. Discussion and implications

5.1 Discussions

The empirical evidence presented in this study reaffirmed the significant positive impact of green human resource management (GHRM) in fostering green behavior, green commitment and sustainable corporate performance (SCP). These findings resonated with existing literature, as supported by studies conducted by Shahzad *et al.* (2023), Ali *et al.* (2022) and Mousa and Othman (2020). GHRM demonstrated a statistically significant influence on promoting green behavior, as indicated by a β coefficient of 0.408, and on fostering green commitment, as evidenced by a β coefficient of 0.496. These results underscored the capacity of GHRM to stimulate employees' adoption of environmentally-friendly practices and to cultivate their dedication to environmental initiatives. Consequently, this leads to a reduction in resource wastage and operational costs through the promotion of sustainable behaviors and allegiance.

Furthermore, the study highlighted the significant impact of GHRM on SCP (β = 0.321), emphasizing the necessity of eco-centric strategies across various organizational functions such as recruitment, selection, training and rewards. Managers can leverage these empirical insights to strategically integrate GHRM initiatives, thereby fostering green behavior and commitment within their organizations. This strategic alignment enhances organizational performance and sustainability by promoting eco-friendly practices, optimizing resource allocation and mitigating operational expenditures.

The findings also supported the positive correlation between green behavior, green commitment and SCP, consistent with previous research by Shahzad *et al.* (2023) and Nawangsari *et al.* (2021). Green behavior significantly contributed to SCP (β = 0.218), indicating that adopting sustainable practices among employees, such as waste management and environmental education, not only benefits the environment and society but also holds economic significance. Similarly, green commitment positively influences SCP (β = 0.210), emphasizing the importance of employees' dedication and support for a company's environmental initiatives.

Moreover, the study confirmed the mediating role of green behavior and green commitment in the relationship between GHRM and SCP, aligning with the findings of Malik *et al.* (2021), Ngo and Ngo (2023), and Setyaningrum and Muafi (2023). This suggested that GHRM's focus on promoting SCP through green behavior and green commitment empowers employees to contribute to resource conservation, cost containment and sustainable value creation for an organization. By intertwining individual ecological conscientiousness with corporate environmental commitment, GHRM emerges as a pivotal

driver of sustainable performance within an organizational framework. Green behavior and green commitment, therefore, serve as essential managerial tools in bolstering the organization's sustainability paradigm.

5.1.1 Theoretical implications. This research advanced theoretical frameworks by integrating RBV and AMO theories into the context of green human resource management (GHRM) and sustainable corporate performance (SCP). This integration deepens understanding of how organizational capabilities, employee motivations and environmental resources interact to shape sustainable outcomes. By elucidating these mechanisms, the study offered a comprehensive theoretical framework that enriches the discourse on the relationship between human resource practices, employee behavior and organizational sustainability.

Additionally, the research highlighted the crucial roles of GHRM, green behavior and green commitment in advancing corporate sustainability theories. By emphasizing the integration of human factors with conventional management and ecological perspectives, it underscored the importance of considering organizational practices holistically. The confirmation of hypotheses regarding GHRM's positive impact on green behavior, commitment and SCP reinforces prior research findings and strengthens the theoretical foundations in this domain, providing empirical support for the examined constructs.

Furthermore, the study expanded existing knowledge by investigating intermediary mechanisms between GHRM and SCP. By identifying green behavior and commitment as intermediaries, it offered insights into the pathways through which GHRM influences sustainable organizational activities. This nuanced understanding of intermediary processes enriches the theoretical landscape by providing valuable insights into the complex dynamics underlying sustainable outcomes.

Overall, these theoretical implications underscored the significance of considering human resource practices and employee behaviors in shaping organizational sustainability. By advancing theoretical understanding and informing future research directions, this study contributes to the ongoing discourse in the field of business management.

5.1.2 Managerial implications. Integrating RBV theory and the AMO framework offered a coherent approach to bolstering organizational sustainability. This integration enabled effective utilization of internal resources and empowers employees to contribute to environmental sustainability. Strategic alignment of organizational values, employee motivation and environmental initiatives optimizes sustainable outcomes and reinforces long-term viability.

Research indicates that implementing GHRM practices, like eco-conscious recruitment and green training, positively impacts enterprise sustainability and presents an opportunity for manufacturing businesses in HCMC to enact GHRM effectively. Establishing an environment-focused culture alongside green recruitment and prioritizing hiring environmentally-knowledgeable staff is crucial. Integrating environmental training into organizational development programs enhances employees' understanding of their roles in environmental management and linking individual performance to environmental goals solidifies employee commitment to environmental stewardship. Incentivizing green behavior through reward systems fosters innovation and effective environmental management by facilitating knowledge sharing among employees.

In addition, promoting a green organizational culture fosters employees' intrinsic green behaviors and commitments, benefiting the environment, society and economy. GHRM practices positively correlate with green behaviors, commitments and sustainable business performance. Encouraging activities such as waste segregation and knowledge exchange on environmental matters among colleagues fosters favorable conditions for implementing green practices. Integrating environmental considerations into employees' personal and

professional lives encourages active participation in environmental protection efforts, enhancing the organization's sustainability.

Recognizing green behaviors and commitments acts as a link between GHRM and sustainable business performance, emphasizing their crucial role in connecting environmental management with business outcomes and integrating these into organizational strategy, setting environmental goals and establishing effective performance evaluation systems are essential steps. Forming a leadership team with environmental expertise and promoting knowledge sharing among employees enhances collaboration on environmental issues while cultivating an organizational culture centered on environmental values ensures alignment of actions with sustainability principles.

6. Conclusion, limitations and future research scope

The study reliably validated each initial hypotheses, with all seven being accepted at a significance level below $p < 0.05$. This underscores the accuracy of the research evaluation process, reinforcing the theoretical model's scientific foundation. These results offer valuable insights into management and business strategies, enhancing stakeholders' understanding of interaction mechanisms among model factors and paving the way for future research and practical applications.

The study focused on clarifying the relationship between GHRM, green behavior, green commitment and SCP. However, like all studies, this research also has certain limitations. First, it concentrated on specific factors and does not encompass the entire scope of GHRM and SCP which could diminish its overall validity and impede the application of the results in different contexts. Secondly, the complexity of GHRM and SCP might not be fully captured in the measurement data, leading to potential inaccuracies in representing their influence. Thirdly, focusing solely on the manufacturing industry may limit the generalizability of results to other sectors such as services or finance. Lastly, the findings may be influenced by the specific cultural and legal nuances of HCMC, restricting their applicability beyond this context. All of these constraints provide insights for future research directions.

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Corresponding author
Thanh Tiep Le can be contacted at: tieplt@uef.edu.vn