

# The Impact of Technological Advancement and Green HRM Practices on the Sustainable Business Development in Vietnam

Ka Yin Chau<sup>1</sup>, Jinliang Wang<sup>1,2</sup>, Massoud Moslehpour<sup>3,4,\*</sup>

<sup>1</sup>*Faculty of Business, City University of Macau  
Room 418, Luso Chinese Building, Avenida Padre Tomas Pereira, Taipa, Macau  
E-mail: gavinchau@cityu.mo*

<sup>2</sup>*School of Management, Guangdong University of Science and Technology  
No.99, Xihu Road, Nancheng District, Dongguan City, Guangdong Province, China  
E-mail: B21092100207@cityu.mo*

<sup>3</sup>*Department of Business Administration Asia University  
500, Lioufeng Rd., Wufeng, Taichung 41354, Taiwan*

<sup>4</sup>*Department of Management, California State University, San Bernardino  
5500 University Parkway, San Bernardino, CA 92407, USA  
E-mail: writetodrm@gmail.com; (\*corresponding author)*

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The growing need of sustainability in businesses, especially the ecological aspect demands the its eligibility and effectiveness in human resource area which is normally referred green human resource management. Moreover, the rising concerns for natural environment also fixate the idea to rejuvenate the conventional business model and shift towards green management. Thereby, the study intends to scrutinize the role of green HRM practices in sustainable business development in Vietnamese context. Along with it, the study also intends to explore the mediating role of technology advancement on proposed relationship. For this purpose, primary data was collected, and PLS-SEM methodology was employed to assess measurement and structural model. Results echo that green HRM practices are positively correlated with sustainable business development in case of Vietnam. Moreover, technological advancement significantly mediates the relationship of green HRM and SBD. Results are helpful in policy making structures by enhancing the effectiveness of existing HRM practices.

**Keywords:** *Green HRM Practices; Green Job Design; Green Recruitment Selection; Green Training Development; Technology Advancement; Sustainable Business Development.*

## Introduction

In this internet and technology-based age, people's social and environmental awareness is getting deep and rich. Now it's empirical for firms to have sustainable development for they can successfully compete with the distinctive rank in community and national as well as international markets (Bombiak & Marciniuk-Kluska, 2018; Van hoa *et al.*, 2022; Yodchai *et al.*, 2022). A firm can have SBD if it has social and environmental consciousness and puts focus on some things more than profits. It pays close attention to how its actions affect society and the quality of the environment. Such a business can be seen as having sustainable development since it helps to ensure the social and environmental security of the neighborhood in which it works, assisting in creating a setting in which the business can flourish (Yusoff *et al.*, 2020). The idea of SBD gained much recognition from renowned academics and practitioners. The importance of sustainable company performance in the contemporary highlighted by the past studies (Alzgoool, 2019; Bai *et al.*, 2022; Hanif *et al.*, 2022), fiercely competitive marketplace, where suppliers and sellers must also ensure the environmental safety and social

security of their customers along with the products being sold (Alzgoool, 2019; Zhao *et al.*, 2021). Organizations that show a special concern for the environment around them and the well-being of the people who are somehow connected are preferred for dealings among consumers. SBD is based on the "triple bottom line concept", which supports society, the environment, and profits side by side. SBD can be achieved only if the organizations show social concern while safeguarding environmental resources (Khalid *et al.*, 2023).

The persons in HR departments who manage the organization's workforce and develop suitable work culture plays an essential role in building and implementing sustainability strategies to protect the earth's planet. Green human resource management is a set of policies, procedures and systems that promotes green behavior among employees with the intention to transform the organization that is not only environmentally conscious but also resource-efficient, and show social responsibility. The execution of green HR practices such as green job design, GRS, and GTD develops the ability of the organization to implement sustainability strategies as an answer to the catastrophes and challenges brought by climate change

(Chien *et al.*, 2021a). In green job designing, the HRM includes eco-logical friendly precautions and initiatives into the job description and makes it part of employees' duties. When the employees take certain eco-friendly precautions and initiatives while performing the function in certain departments, they reduce the waste and pollution from that department (Amrutha & Geetha, 2020; Thitinan *et al.*, 2022). In GRS, selection and recruitment of individuals is based on green knowledge, aptitude, skills, and some relevant certificate. These employees may have environmental awareness, knowledge essential to mitigate environmental issues, and a positive attitude for green performance. They can implement sustainability strategies assisting to have SBD. GTD are to train the employees and develop their knowledge, aptitude, and skills in such a way as they adopt green behavior. They can move the firms to attain SBD (Sriyakul *et al.*, 2022).

The study focus is on SBD for the manufacturing sector of Vietnam. In Vietnam, the manufacturing sector provided employment to 10.2 % of the workforce and contributed 20.3 % to the GDP in 2004. During the period 1994–2004, the GDP related to manufacturing sector grew at an annual rate of 11.2 percent. The manufacturing industries with the fastest growth rates included those food processing, producing electronics, textiles, tobacco and cigarette products, chemicals, and footwear (Shahzad *et al.*, 2022; Tuan, 2022). Vietnam is growing as a new manufacturing hub in Asia, especially for businesses in Korea and Japan, as a result of its proximity to China and reduced labor costs. For suppose, Samsung manufactures more than 40 % of its smartphones in Vietnam. Since last decade, the large transport industry has grown high. According to 2019 statistics, Samsung employs about 0.2 million people in the Vietnam city of Hanoi to produce smartphones. In order to remain competitive, LG Electronics moved the manufacturing of its smartphones from South Korea to Vietnam, obtaining certain components from China and making the majority of its devices in India. LG cited the availability of a large labor force in Vietnam as justification for the migration (Le Ha & Uyen, 2021; Shafi *et al.*, 2022).

Manufacturing companies, which make up a sizable portion of Vietnam's GDP and are socially and environmentally sensitive, need to pay extra attention if they want to boost productivity and promote sustainability in their operations (Cera *et al.*, 2022; Chien *et al.*, 2021; Pham *et al.*, 2019). This study has been conducted in an effort to address this demand and to provide strategies for improving corporate performance through sustainability. Thereby, it aims to explore the green HRM practices like green job design, GRS, and GTD and its effectiveness on SBD. The study's objective was also to determine the mediating effect of technological advancement on the relationship between green HRM practices like green job design, GRS, GTD, and SBD.

This way, the study makes significant contribution in numerous ways: Some preceding studies have conferred the relationship between green job design, GRS, and GTD with SBD. But most of these studies have addressed the links between green job design, GRS, and GTD in SBD but through separate research surveys. It is an addition to the literature for the simultaneous analysis of these factors' relationship. Second, in previous literature, simply the link of technological advancement with SBD has been studied.

Whereas, in this study, technological advancement has been taken as a mediator between green job design, GRS, and GTD in SBD. Third, studies are scarce when there is talk about said relationship in Vietnamese context. Hence, the present study is distinctive because it addresses the need for SBD for manufacturing firms in Vietnam and evaluates the role of green HRM practices in this regard.

The study is composed of five parts: The next part is the review of previous literature to propose hypotheses for the relation between selected green HRM practices and SBD. The third part is the process description for data collection and testing of hypotheses. The study findings are confirmed by the other scholars' similar findings, and the study implication is given. The study implications are also followed by a conclusion and limitations.

## Literature Review

### Green Job Design

A firm can attain SBD when its functions and operation are being carried on way to that there would be no harm to the environment and living beings' health while also developing healthy social interactions with the stakeholders (Phuoc *et al.*, 2022; Sadiq *et al.*, 2022; Trinh, 2021). Green HRM appears to be effective for attaining SBD. The objective of the green HRM practice is to foster employees' green behavior in order to ensure an organization that is characterized as environmentally aware, socially responsible, and resource-efficient. The current paper examines green HRM practices like green job design, GRS, and GTD along with technological advancement in SBD. Various studies have analyzed the relationship of green HRM practices like green job design, GRS, and GTD with technological advancement and SBD. In the further paragraphs, the hypotheses for the relationship among green HRM practices like green job design, GRS, and GTD, technological advancement, and SBD are built in light of the literature reviewed.

GJD is one of the green HRM practices, according to which green HRM incorporates environmental sustainability-related precautions, tasks, and responsibilities in the professional duties of the employees. The implementation of this process ensures the undertaking of each job or task without creating any environmental issues and harming the stakeholders' interests. The increasing social and eco-logical friendly performance of the firm creates sustainability in business development (Niaz *et al.*, 2021; Usman & Mat, 2021). Arulrajah *et al.* (2015), examines the relationship between green job design, GTD, and GRS with SBD. The study reveals that when the HRM prepares green job designs, the employees at the production unit not only focus on the goods and services production but also take care of the environmental aspects of the production and make changes to protect environment and secures the social rights of the customers and general public. Thus, SBD is possible. Dat *et al.* (2022) and Tuan Trong Luu (2021), also states that in green job design, the employees at the marketing unit apply green advertisement material and renewable energy for the transportation system. With improved environmental performance, SBD can be attained. Therefore, the following hypothesis can be placed:

**H1:** green job design positively affects sustainable business development.

### ***Green Recruitment & Selection***

GRS is a green HR policy under which the HR managers evaluate the candidate's eco-logical knowledge, aptitude, and skills. And the candidates selected and recruited by this process can perform their job functions in a better way to have better outcomes with the least environmental pollution. This secures the environment and people's well-being around; so the firms have SBD (Moslehpour *et al.*, 2022a, 2022b). Paille (2019), investigates the impacts of GRS on environmental sustainability and SBD. For the analysis of the relationships among these factors, information was drawn through systematic analysis covering the period from 2008-2017. The study states that when HRM practices GRS, it assures the performance of business operations efficiently without emitting harmful gases and creating toxic wastes. The protection of the environment, security of resources, and, therefore, social welfare determines SBD. Malik *et al.* (2020), posits that usually, the candidates employed under GRS have prior eco-logical-friendly knowledge, skills, and experience. These candidates can be efficient employees to answer the environmental challenges and, thereby, can attain the goal of SBD. So,

**H2:** green recruitment & selection positively affect sustainable business development.

### ***Green Training & Development***

Green HRM practices like GTD put emphasis on developing employees' knowledge, information, skills, and attitudes with the motive to develop their green behavior while operating business functions. The organizations where employees' behavior is (Braslauskas, 2023). ecologically friendly and there are efficient in functioning, SBD can be achieved (Mashala, 2018). Ghouri *et al.* (2020), claim that GTD play a critical role in making employees aware of the eco-logical problems and challenges that the whole world has to face and the causes of these environmental issues. This awareness helps the employees to make effective decisions while choosing resources, technologies, and processes in order to sustain business development, which requires environmental well-being. Marin-Garcia *et al.* (2022), posits that the execution of GTD educates employees about business methods like recycling, energy transition, and shutting down electronic appliances, etc. Applying these methods gives good quality products and maintains the marketing for the goods along with the reduction in wastes and saving resources. This helps to respond to customers and other stakeholders' requirements from the firms and the firms can have SBD. Based on above literature, we posit that:

**H3:** green training & development positively affect sustainable business development.

### ***Technological Advancement as a Mediator***

When the firms apply green job design, the employees at different organizational sites use innovative technologies to find the environmental issues caused by their jobs and overcome them without disturbing productivity. These

firms, because of technological advancement, have SBD. Hence, technological advancement mediates between GJD and SBD (Mamani *et al.*, 2022; Trong Tuan Luu, 2019). Al Tamimi & Al Anssari (2022) and Yong *et al.* (2020), scrutinized green HRM practices like green job design, technological advancement, and its influence on SBD. The study implies that when green HRM employ a GJD for the employees, they are not only restricted to their traditional job duties but employ novel technologies that reduce environmental pollution. This develops sustainability in business performance. Ababneh (2021), explains that under green job designing, the leaders have creative thinking and try to employ technological advancements to collect quality information, have quality interaction with the stakeholders, and support the subordinates in their work. Based on the above discussion, it can be said.

**H4:** Technological advancement significantly mediates between like green job design and SBD.

With GRS, the recruited employees have sufficient knowledge about ecologically friendly technologies and abilities to run these technologies effectively. So, this assists in employing advanced technologies within the firms. And the adoption of advanced technologies enables firms to implement sustainable business strategies. Thus, firms with GRS and technological advancement can have SBD (Chakraborty & Biswas, 2020; Liu *et al.*, 2022; Lubis & Pratama, 2022). Labella-Fernández & Martínez-del-Río (2019), identified green HRM practices effectiveness like GRS, technological advancement on SBD. The study proclaims that when GHRM practices such as GRS are effectively implemented, educated, informed, talented, and skilled employees who are able to carry out green technological procedures can be searched from the entire world employees. In the presence of such talented and skilled employees, the adoption of technologies is easy. The resource-efficient and pollution-free technologies enable the firms to have SBD. Hence, technological advancement is a strengthening link between GHRM and SBD. Kurniawan *et al.* (2022) and Mwita & Kinemo (2018), also posits that the execution of GHRM promotes technological advancement as the use of innovative, better working technologies supports SBD. Therefore,

**H5:** Technological advancement significantly mediates between green recruitment & selection and sustainable business development.

The business firms where, according to the policies of green HRM, periodical sessions for training and the development of the employees are held. These sessions turn the employees knowledgeable and talented and have cognitive and physical skills to run the different types of green technologies. The adoption of these technologies helps meet environmental and social responsibilities and, thereby, maintains the product's marketing. So, sustainability can be created in business development (Hussain *et al.*, 2022; Podolchak *et al.*, 2023). Alvarez-Risco *et al.* (2021), examines the influences of technological advancement, green HRM practices like GTD, and SBD. The study states that when HRM works to provide GTD, it may get workers ready to comprehend and engage with

cutting-edge technologies successfully and apply them to deliver green improvements to business operations and support business growth. Therefore, technological advancement serves as a link between GHRM like GTD, and SBD. Funko et al. (2023) integrate the relationship between technological advancement, green HRM practices like GTD, and SBD. GTD prepare the employees for employing sustainable energy technologies, and the adoption of sustainable energy technologies helps in the achievement of SBD. Hence, it can be said:

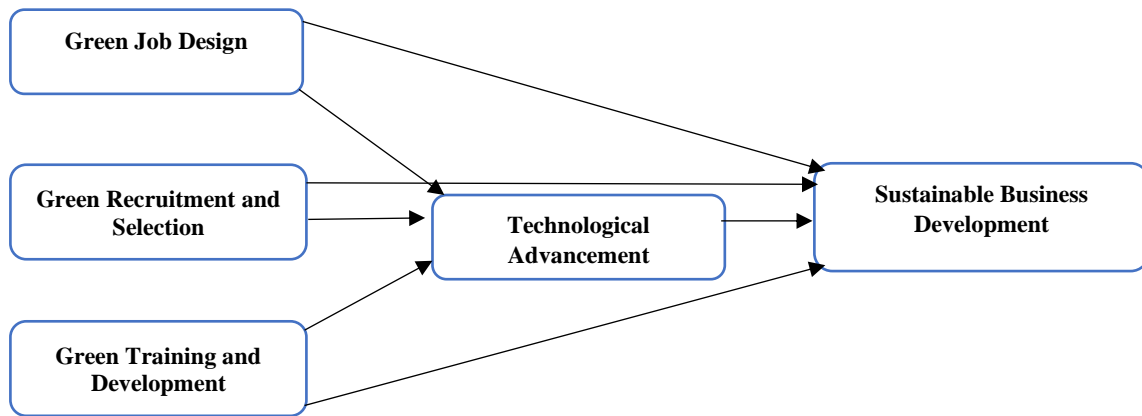
**H6:** Technological advancement significantly mediates between GTD and sustainable business development.

**Research Methods**

The article examines the role of GJD, GRS, and GTD on the SBD of the manufacturing industry in Vietnam and also investigates the mediating impact of technology advancement among green HRM practices and the SBD of the manufacturing industry in Vietnam. The variables are measured with the help of the items extracted from past

studies. For example, GJD is measured with seven items extracted from Shah (2019), GRS is measured with nine items while GTD is measured with twelve items taken from Saeed et al. (2019), technology advancement (TA) is measured with five items taken from Jean, Sinkovics, and Kim (2010) and SBD is measured with the Najib et al. (2021).

The study has selected the employees of the human resource department of the manufacturing industry as the study respondents. The employees are selected based on purposive sampling. The surveys were distributed to the respondents with the help of mail. The researchers have distributed around 610 questionnaires and received only 375 surveys, which representing around 61.48 percent response rate. The article also used the smart-PLS to investigate the association among variables. It is an effective primary data analysis tool and deals with complex models effectively. The article has used three predictors such as GJD, GRS, and GTD, one mediating variable named technology advancement, and one predictive variable named SBD. These constructs are presented in Figure 1.



**Figure 1.** Research Model

**Research Findings**

The article scrutinized convergent validity using Alpha, average variance extracted, composite reliability (CR), and factor loadings. The findings showcase that AVE and factor loading values are greater than 0.5, and the Alpha and CR

values are higher than 0.7. Thus, the figures confirm valid convergent validity. Table 2 provides the clear picture of measurement model.

Table 1

Constructs	Convergent Validity				
	Items	Loadings	Alpha	CR	AVE
Green Job Design	GJD1	0.756	0.885	0.910	0.591
	GJD2	0.795			
	GJD3	0.727			
	GJD4	0.825			
	GJD5	0.721			
	GJD6	0.767			
	GJD7	0.786			
Green Recruitment and Selection	GRS1	0.640	0.913	0.928	0.593
	GRS2	0.657			

Constructs	Items	Loadings	Alpha	CR	AVE
Green Training and Development	GRS3	0.725			
	GRS4	0.822			
	GRS5	0.872			
	GRS6	0.771			
	GRS7	0.769			
	GRS8	0.793			
	GRS9	0.849			
	GTD1	0.788	0.927	0.937	0.556
	GTD10	0.692			
	GTD11	0.691			
	GTD12	0.683			
	GTD2	0.766			
	GTD3	0.737			
	GTD4	0.825			
Sustainable Business Development	GTD5	0.827			
	GTD6	0.762			
	GTD7	0.733			
	GTD8	0.710			
	GTD9	0.712			
	SBD1	0.791	0.853	0.891	0.576
Technology Advancement	SBD2	0.777			
	SBD3	0.763			
	SBD4	0.766			
	SBD5	0.732			
	SBD6	0.723			
Technology Advancement	TA1	0.879	0.868	0.905	0.658
	TA2	0.865			
	TA3	0.668			
	TA4	0.819			
	TA5	0.808			

In order to assess discriminant validity, Fornell Larcker and cross loadings were considered. As per findings from table 2 and 3, it is exposed that values of each construct itself

are higher in comparison to other variables. This confirms discriminant validity.

Table 2

Fornell Larcker					
	GJD	GRS	GTD	SBD	TA
GJD	0.769				
GRS	0.478	0.770			
GTD	0.660	0.599	0.745		
SBD	0.649	0.652	0.748	0.759	
TA	0.515	0.445	0.484	0.652	0.811

Table 3

## Cross-Loadings

	<b>GJD</b>	<b>GRS</b>	<b>GTD</b>	<b>SBD</b>	<b>TA</b>
GJD1	<b>0.756</b>	0.429	0.586	0.548	0.374
GJD2	<b>0.795</b>	0.337	0.429	0.405	0.419
GJD3	<b>0.727</b>	0.385	0.429	0.447	0.396
GJD4	<b>0.825</b>	0.412	0.584	0.602	0.462
GJD5	<b>0.721</b>	0.337	0.554	0.535	0.336
GJD6	<b>0.767</b>	0.291	0.396	0.370	0.384
GJD7	<b>0.786</b>	0.360	0.531	0.533	0.394
GRS1	0.295	<b>0.640</b>	0.325	0.390	0.247
GRS2	0.374	<b>0.657</b>	0.390	0.427	0.207
GRS3	0.302	<b>0.725</b>	0.405	0.434	0.209
GRS4	0.438	<b>0.822</b>	0.513	0.593	0.397
GRS5	0.375	<b>0.872</b>	0.512	0.563	0.418
GRS6	0.370	<b>0.771</b>	0.466	0.512	0.385
GRS7	0.415	<b>0.769</b>	0.516	0.479	0.338
GRS8	0.362	<b>0.793</b>	0.486	0.527	0.369
GRS9	0.374	<b>0.849</b>	0.497	0.545	0.430
GTD1	0.374	0.456	<b>0.788</b>	0.507	0.298
GTD10	0.716	0.412	<b>0.692</b>	0.596	0.403
GTD11	0.715	0.424	<b>0.691</b>	0.616	0.426
GTD12	0.641	0.386	<b>0.683</b>	0.534	0.372
GTD2	0.345	0.400	<b>0.766</b>	0.481	0.316
GTD3	0.320	0.449	<b>0.737</b>	0.472	0.294
GTD4	0.412	0.472	<b>0.825</b>	0.561	0.377
GTD5	0.447	0.532	<b>0.827</b>	0.638	0.426
GTD6	0.404	0.531	<b>0.762</b>	0.622	0.373
GTD7	0.341	0.359	<b>0.733</b>	0.427	0.244
GTD8	0.357	0.446	<b>0.710</b>	0.549	0.314
GTD9	0.677	0.436	<b>0.712</b>	0.582	0.399
SBD1	0.489	0.473	0.683	<b>0.791</b>	0.374
SBD2	0.493	0.514	0.677	<b>0.777</b>	0.472
SBD3	0.497	0.442	0.545	<b>0.763</b>	0.571
SBD4	0.393	0.461	0.473	<b>0.766</b>	0.686
SBD5	0.547	0.572	0.519	<b>0.732</b>	0.446
SBD6	0.541	0.510	0.500	<b>0.723</b>	0.421
TA1	0.490	0.385	0.444	0.605	<b>0.879</b>
TA2	0.377	0.366	0.365	0.512	<b>0.865</b>
TA3	0.417	0.429	0.442	0.544	<b>0.668</b>
TA4	0.432	0.302	0.368	0.506	<b>0.819</b>
TA5	0.342	0.297	0.311	0.440	<b>0.808</b>

Moreover, the article also assessed the discriminant validity by conducting Heterotrait Monotrait (HTMT) ratio. The findings show that values are lower than 0.85. Hence,

exposing valid discriminant validity. Table 4 depicts the full detail.

Table 4

Heterotrait Monotrait Ratio					
	GJD	GRS	GTD	SBD	TA
GJD					
GRS	.527				
GTD	.701	.640			
SBD	.737	.734	.825		
TA	.579	.481	.522	.749	

Table 5 exposed that green HRM practices share positive linkage with sustainable business development as the beta coefficient is positive and p-values are less than 0.05. Moreover, it also shows that GHRM practices also share positive linkage with technological advancement and

technological advancement further shares positive linkage with SBD. Finally, it is also confirmed that technological advancement mediates the relationship between GHRM practices and SBD.

Table 5

A Path Analysis					
Relationships	Beta	S.D.	T Statistics	P Values	
GJD -> SBD	0.138	0.045	3.086	0.002	
GJD -> TA	0.317	0.066	4.802	0.000	
GRS -> SBD	0.228	0.037	6.123	0.000	
GRS -> TA	0.201	0.059	3.440	0.001	
GTD -> SBD	0.377	0.045	8.303	0.000	
GTD -> TA	0.154	0.068	2.266	0.024	
TA -> SBD	0.298	0.042	7.167	0.000	
GTD -> TA -> SBD	0.046	0.023	2.001	0.046	
GJD -> TA -> SBD	0.094	0.023	4.033	0.000	
GRS -> TA -> SBD	0.060	0.018	3.254	0.001	

**Discussions**

The article scrutinizes green HRM practices effectiveness such as GJD, GRS, and GTD on SBD in Vietnam. The article also investigates the mediating impact of technology advancement among green HRM practices and SBD in Vietnam. The results showed that GHRM like GJD positively affect the SBD. These results are supported by the previous study of Trong Tuan Luu (2018), which highlights that if the GHRM applies a GJD, all the employees take care of the environmental impacts of the activities they are currently performing within the organization. The pollution-free activities enable the organization to achieve sustainable business performance. These results are also in line with the study of (Nisar *et al.*, 2021). According to this previous study, under an effective green HR, a GJD is formulated. The employees are assigned duties in those administrative areas where they can control adverse environmental impacts. When the different organizational areas are working effectively without creating problems for the environment, resources, and humans, this helps sustain the business development.

The results showed that green HRM practices like GRS positively affect the SBD. The previous study by Islam, Hunt, Jantan, Hashim, and Chong (2020) supports these results. The previous study explains that when HRM recruits and selects candidates for a vacant position with the thinking that the new employees must have knowledge of the environmental aspects of the job and how they can overcome

environmental problems. These employees would be an asset to SBD because these employees can reduce environmental issues. These results also align with the study of Aftab, Abid, Cucari, and Savastano (2022), which states that these are the employees who perform most of the business practices. If HRM recruits and selects candidate whose prior environmental knowledge and skills to fight against the environmental issues that are likely to arise while performing their duties. The improved environmental performance as a result of GRS adds to SBD.

The results showed that green HRM practices like GTD positively relate to SBD. These results are supported by the previous study of Rawashdeh (2018) and Sabary *et al.* (2023), which highlights that when HRM integrates green aspects into the training and development of employees, they can teach employees environmentally friendly knowledge and green business capabilities. It doesn't allow environmental issues in the organization and leads it towards sustainable business performance. These results are also in line with the study of Ojo, Tan, and Alias (2020), which shows that if the employees are given green training periodically, they are able to address and take action against environmental issues and, thereby, contribute to SBD.

The results showed that technological advancement significantly mediates between green HRM practices like GJD and SBD. These results are supported by the previous study of Jermisittiparsert, Siriattakul, and Wattanapongphasuk (2019), which highlights that the effective implementation of HRM practices like GJD prepares the employees to adopt

the technological advancement specific to their job position. The adoption of technological advancements helps improve SBD. These results are also in line with the study of Ari, Karatepe, Rezapouraghdam, and Avci (2020). According to a past study, green HRM practices with GJD allow the adoption of technological advancement, which is helpful in attaining SBD.

The results showed that technological advancement significantly mediates between green HRM practices like GRS and SBD. The previous study of Irani, Kiliç, and Adeshola (2022) supports these results. It was previously stated that the effective implementation of HRM practices like GRS assures the presence of employees who can adopt technological advancement. The adoption of technological advancements leads firms to attain SBD. These results are also in line with the study of Al-Romeedy (2019) and Zhou (2023), which proclaims that the adoption of innovative green technologies is possible if HRM selects and recruits candidates with green knowledge, skills, and abilities. The adoption of technological advancement helps to achieve the goal of sustainable business performance.

The results showed that technological advancement significantly mediates between green HRM practices like GTD and SBD. These results are supported by the previous study of Raut, Gardas, Luthra, Narkhede, and Mangla (2020), which proclaims that when HRM struggles for GTD, it can prepare the employees to understand and interact with the advanced technologies effectively and use them for bringing green improvement in business function and sustains business development. These results are also in line with the study of Dubey and Gupta (2018), who say that GTD assists in employing advanced technologies that ensure SBD. Hence, technological advancements are a link between green HRM practice, green training, and development and SBD.

### **Implications of the Study**

Researchers may have guidelines for their future work from the current research. The current study makes a great contribution to the literature. The present study with the dimensions of green HRM for analyzing SBD contributes to the literature. The present study also contributes to the literature because it examines technological advancement as a mediator in the context of Vietnam, hence, extends the literature.

The present literature is empirically significant for emerging economies. It addresses the new business concept of a circular economy that is the need of the hour to sustain economic growth without affecting the environmental quality and supply of resources. It throws light on the ways how to develop a sustainable business. It has guidance for the business firms that they must form policies to implement HRM practices like developing GJD so that SBD can be

achieved. The study also suggests that business policies should be designed to execute the green HRM practice, like GRS, in order to develop a sustainable business. The study provides help to the policymakers in developing policies regarding SBD using effective HRM practices. The study guides the firms' management that green HR practices like GTD must be implemented effectively because, in this way, a sustainable business can be developed. In addition, the current study provides a guideline that the business policies should be formed carefully to implement green HRM practices like GJD, GRS, and GTD so that technological advancements are possible to adopt and sustainable business can be developed.

### **Conclusion**

The objective of the study was to explore the impacts of green HRM practices like GJD, GRS, and GTD on SBD in the presence of technological advancement as a mediator. According to the study results, green HRM practices like GJD, GRS, and GTD have a positive relation to SBD. The results showed that when the HRM forms the GJD for the employees and under this job design, the green tasks along with the job duties are assigned to employees, the firms can meet economic goals without damaging the environmental quality and affecting social welfare. So, firms with GJDs can have SBD. The results also showed that if green HRM activity like GRS is performed effectively, the services of an environmentally aware, talented, skilled, and experienced person can be attained. This reduces environmental and social issues caused by the firms, and SBD can be achieved. Moreover, under green HRM like GTD, green professional abilities can be developed and maintained in existing employees. This brings environmentally friendly improvement in employees' efficiency, and therefore, SBD can be achieved. The present study also concluded that the execution of green HRM practices like GJD, GRS, and GTD helps in technological advancement and, thereby, in SBD.

### **Limitations**

Several limitations are associated with the current research, and scholars with literary expertise are able to overcome these limitations. The present study examines specific green HRM practices, the many other significant factors like green finance, energy transition, sharing, and cooperate governance have been left ignored. Consequently, the study is limited, and it is recommended to future authors that they must increase the number of factors under research for SBD. Moreover, technological advancement is a mediator between green HRM practices like GJD, GRS, and GTD on SBD. The future authors are recommended to introduce at least a moderator between green HRM practices like GJD, GRS, and GTD on SBD.



**Appendix**

Items	Statements	Sources
<b>Green Job Design</b>		
GJD1	“My firm has integrated several environmental protection responsibilities in each position.”	(Shah, 2019)
GJD2	“My firm has included the green and social needs of the company in the job description and specification.”	
GJD3	“My firm utilizes team collaboration as a job design method for effectively achieving green targets.”	
GJD4	“My firm has incorporated the environmental aspect as a task in the job description.”	
GJD5	“My firm has incorporated green capabilities as a distinctive element in the job specifications.”	
GJD6	“My firm has designed and executed innovative positions emphasizing environmental protection.”	
GJD7	“Our firm has incorporated environmental consciousness as a core competency in the competency model for talent.”	
<b>Green Recruitment and Selection</b>		
GRS1	“In my firm, the job description specification includes environmental concerns.”	(Saeed <i>et al.</i> , 2019)
GRS2	“My firm selects applicants who are sufficiently aware of greening to fill job vacancies.”	
GRS3	“Recruitment messages include environmental behavior or commitment criteria.”	
GRS4	“In this firm, job positions are designed that focus exclusively on environmental management aspects of the organizations.”	
GRS5	“My firm indicates or makes transparent its environmental performance (past and current) in recruitment messages.”	
GRS6	“My firm includes environmental criteria in the recruitment messages.”	
GRS7	“My firm prefers to recruit candidates with competency in corporate environmental management initiatives.”	
GRS8	“This firm considers candidates' environmental concerns and interests as selection criteria.”	
GRS9	“My firm asks environment-related questions when interviewing candidates or evaluating them for selection.”	
<b>Green Training and Development</b>		
GTD1	“They are providing environmental training to the firm members to increase environmental awareness.”	(Saeed <i>et al.</i> , 2019)
GTD2	“Takes into account the needs of environmental issues when training requirements is analyzed.”	
GTD3	“All training materials are available online for the employee to reduce paper costs.”	
GTD4	“Environmental training is a priority when compared to other types of company training.”	
GTD5	“They are providing environmental training to the firm member to develop required skills and knowledge.”	
GTD6	“They are providing training to learn or adapt environmentally-friendly best practices.”	
GTD7	“They are providing environmental awareness training to create environmental awareness among the workforce.”	
GTD8	“They are providing environmental education to the workforce.”	
GTD9	“They are providing training to the staff to produce a green analysis of workspace.”	
GTD10	“We are applying job rotation to train green managers of the future.”	
GTD11	“Conducting training needs analyses to identify the green training needs of employees.”	
GTD12	“They are providing opportunities for everybody to be trained on environmental management aspects.”	
<b>Technological Advancement</b>		
TA1	“Our firm uses the most advanced IT for the supply chain management.”	(Jean <i>et al.</i> , 2010)
TA2	“Our IT for supply chain management is always state-of-the-art technology.”	
TA3	“Relative to our competitors, our IT for supply chain management is more advanced.”	
TA4	“My firm is always the first to use new IT for supply chain management in our industry.”	
TA5	“In our industry, my firm is regarded as an IT leader in the supply chain management.”	
<b>Sustainable Business Development</b>		
SBD1	“The sales volumes of my business increase.”	(Najib <i>et al.</i> , 2021)
SBD2	“Our customer satisfaction is high.”	
SBD3	“Our business profits increase.”	
SBD4	“Our business operations empower the surrounding community.”	
SBD5	“Our business operations influence social wellbeing.”	
SBD6	“Our business operations avoid environmental damage.”	

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### Authors' Biographies

**Ka Yin Chau**, Dr., is currently the Director of Asia Pacific Business Research Center, Faculty of Business, City University of Macau. He is a Chartered Engineer (CEng), and a Six Sigma Master Black Belt (MBB) together with his Bachelor, Master, and Doctoral degrees awarded from the UK and Australia respectively. Dr. CHAU has more than 15 years of industry experience in Mainland China, Hong Kong, and USA. His research interests are services Quality Management, Consumer Behaviour, Logistic Management, and Strategic Management. Sustainability, Innovation and Operations Management. He has published a few articles in major international academic journals. ORCID: 0000-0002-0381-8404.

**Jinliang Wang**, an esteemed Associate Professor and Associate Dean at Guangdong University of Science and Technology, specializes in supply chain management, innovations, and sustainability. With affiliations to both the Guangdong University of Science and Technology and the City University of Macau, where he is part of the School of Management and the Faculty of Business respectively, Mr. Wang's research significantly impacts the realm of management education. His publications cover a broad spectrum of topics, from online teaching and blended learning to the influence of education on entrepreneurial spirit, highlighting his dedication to improving educational methods and outcomes. Residing in Dongguan City, Guangdong Province, China, Wang's work is pivotal in advancing both theoretical and practical aspects of management and sustainability within the global education and business sectors. ORCID: 0000-0002-2109-6529.

**Massoud Moslehpour**, Dr., serves as an Associate Professor in Business Administration at Asia University, Taiwan, and Management at California State University, San Bernardino, USA. With an uninterrupted 27-year teaching career, he has been a full-time faculty member, visiting scholar, and guest speaker globally. He is an accomplished author with more than 100 internationally peer-reviewed publications, textbooks, and conference papers. His research and consulting focus on cross-cultural marketing and management, consumer behavior, Green HRM, and sustainability. ORCID: 0000-0001-8808-2407.

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