-RESEARCH ARTICLE-

SUSTAINABLE DEVELOPMENT IN VIETNAMESE EXPORTERS: ASSESSING THE INFLUENCE OF GREEN INNOVATION, CORPORATE SOCIAL RESPONSIBILITY, AND GREEN HRM: THE ROLE OF GREEN COMMITMENT AND GREEN KNOWLEDGE SHARING

Oanh Thi Lan Ngo
The University of Economics Ho Chi Minh City (UEH),
Ho Chi Minh City 72407, Vietnam
Email: oanhngo.33221025400@st.ueh.edu.vn
https://orcid.org/0009-0008-3239-0994

Thanh Quang Ngo*
School of Government, College of Economics, Law and
Government, the University of Economics Ho Chi Minh
City (UEH), Ho Chi Minh City 72407, Vietnam
Email: thanhnq@ueh.edu.vn
https://orcid.org/0000-0001-8357-1957

*Corresponding Author

─**Abstract**─

Green management and practices have become essential in organizational management, with organizations attempting to employ new growth strategies that promote environmentally friendly methods. This study focused on the export industry in Vietnam and identified three critical factors that can influence SD: green human resource management (GHR), corporate social responsibility (CSR), and green innovation (GI). The study also investigated the role of green commitment (GC) as a mediator in the relationship between these factors and sustainable development (SD), as well as the role of green knowledge sharing (GKS) as a moderator in the relationship between the independent variables and GC. A survey questionnaire was administered to personnel of export organizations to collect data. CFA was used to establish the model's validity, and SEM was used to test hypotheses. The findings revealed that green human resource management and green innovation positively impacted sustainable development, whereas CSR had no significant impact. The results also indicated that sharing green

knowledge substantially moderated the relationship between corporate social responsibility and green commitment. In addition, the green commitment mediated the relationships between green human resource management and sustainable development and between green innovation, corporate social responsibility, and sustainable development at 1% and 5%, respectively. This study provides insightful information regarding implementing eco-friendly behaviors and practices in organizational administration to promote sustainable development.

Keywords: Green human resource management, corporate social responsibility, green innovation, green knowledge sharing, green commitment, sustainable development

1. INTRODUCTION

Vietnam, a member of ASEAN, has recently experienced rapid economic development due primarily to its exports to the European Union, the United States, and China. Most of this growth has been concentrated in the SMBs that manufacture the least expensive products. However, this rapid economic growth has affected the environment, prompting academics to express concern regarding green innovation (Huang et al., 2021). This paper evaluates the impact of green innovation, corporate social responsibility, and green human resource management on the sustainable development of Vietnamese exporters. In addition, it examines the role of green commitment as a mediator and the role of green knowledge sharing as a moderator in this relationship. These academicians have investigated the relationship between cultural entrepreneurship and the demand for sustainable practices by considering social and behavioral factors (Cecere et al., 2022). The organizational context does not affect the relationship between green knowledge collection and successful green development. Furthermore, the results indicate that organizations with a robust environmental culture experience a greater impact from green information acquisition on green knowledge management and competent green development.
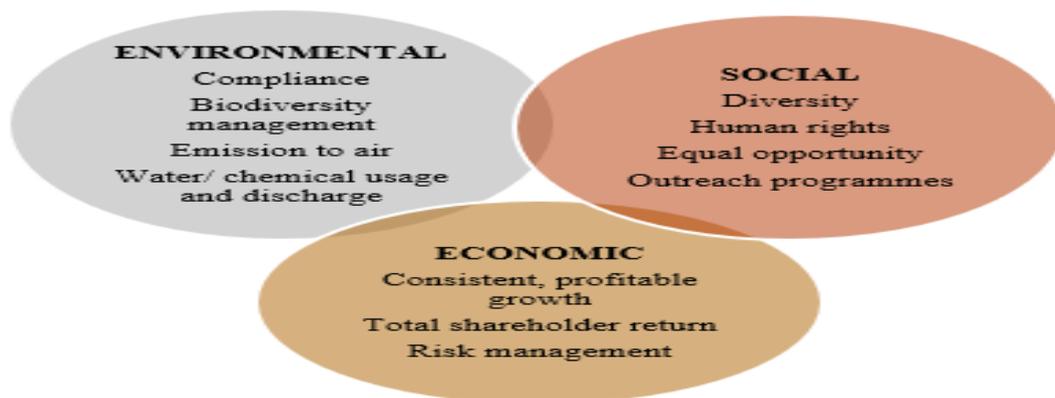

Figure 1. Pillars of SD
Source: (csmathsg.com, 2023)

Moreover, this effect is amplified when green development is costly and technically difficult, requiring greater environmental expertise than conventional methods (J. Wang et al., 2020). Green human resource management promotes sustainable development as a goal (Das et al., 2019; Pham et al., 2020). The coordination of various human resource management processes, such as the overall business development objectives, performance management, instruction, professional growth, and the management of hiring and compensation, has helped green human resource management gain traction within the academic community over the past decade (Anwar et al., 2020). Implementing green human resource management practices is essential to ensure employees actively engage in environmentally sustainable work practices. According to Hhdnp and Arulrajah (2014)Hhdnp et al. (2014), green human resource management refers to programs and practices that promote environmental consciousness among employees and facilitate the efficient use of company resources. According to Saeed et al. (2019)Saeed et al. (2019), employing green human resource management strategies, concepts, and procedures promotes the use of organizational capital in a sustainable manner. Corporate social responsibility is yet another crucial factor that can support sustainable development. By integrating social and environmental concerns into their business operations and interactions with stakeholders, exporters can actively contribute to environmental protection, community well-being, and sustainable economic growth (Sadiq, Le-Dinh, et al., 2023). This paper examines corporate social responsibility's role in promoting sustainable development among Vietnamese exporters.

In addition, it aides in preventing environmental issues within the organization, thereby promoting environmental sustainability. Additional research is being conducted on green innovation to address environmental problems such as finite resources, severe pollution, excessive carbon emissions, and product waste. Developing products and processes that reduce waste, recycle materials, lessen pollution, and regulate the environment constitutes green innovation. Using well-established knowledge, developed economies actively focus on eradicating environmental pollution-causing factors (Sadiq, Ngo, et al., 2023). Green innovation has become a popular strategy for implementing environmentally favorable practices in the manufacturing sector (Ahmed et al., 2022). This study examines the impact of green innovation on sustainable development for Vietnamese exporters.

Businesses are indispensable for connecting key economic actors and promoting the adoption of global trends such as corporate social responsibility. Due to globalization and the simplicity of information sharing, all for-profit or non-profit organizations now incorporate social responsibility into their strategic plans (S.-L. Chen et al., 2023). As competition increases, importing nations place greater demands on businesses, and society holds them to stricter obligations to the community. To achieve sustainable development and meet the needs of society and importing nations, businesses must

observe the rules and strive for excellence (Vu et al., 2020). Environmental, social, and local concerns coexist with a constant emphasis on accelerating economic growth.

Consequently, social responsibility policies are being established. As developed nations set the standard for instituting social responsibility initiatives, developing nations such as Vietnam are catching up. This development is primarily the result of the world's increasing integration and fierce competition. As a market in development, Vietnam has experienced rapid industrialization and expansion of international trade, which has generated both business opportunities and environmental challenges. In this situation, it is impossible to exaggerate the importance of sustainable development (Chien et al., 2021). This study investigates the impact of green innovation, corporate social responsibility, and green human resource management on sustainable development among Vietnamese exporters to cover a critical knowledge gap. Not only will the findings contribute to the corpus of knowledge on sustainable development, but they will also be useful to policymakers, business executives, and other stakeholders who wish to promote sustainable practices in Vietnam's export industry. The primary objective of this study is to address a gap in the literature by providing an integrated model to analyze the effect of certain drivers on sustainable development in Vietnamese exporters. More specifically, this study aims to: (1) determine the impact of green human resource management, green innovation, and corporate social responsibility on sustainable development; (2) examine the mediating role of green commitment between the relationship of green human resource management, green innovation, and corporate social responsibility; and (3) examine the impact of green commitment on the relationship of green human resource management, green innovation, and corporate.

2. LITERATURE REVIEW

2.1 Resource-Based View

The deterioration of the natural environment has become a major concern for businesses around the globe, as it depletes resources that could be utilized productively within businesses. Consequently, sustainable development has become a primary concern for businesses. In the modern era, organizations are doing their best to combat environmental degradation; sustainable development focuses on overcoming these obstacles. Based on the conceptual framework of the study, which emphasizes sustainability, the researcher employs "Resource-based view theory (RBV)," which is widely used for effective strategic management and is used to elaborate on an organization's success and competitiveness (Barney et al., 2011; Shahzad et al., 2021). The resource-based theory (RBT) suggests that organizations can gain a competitive advantage by amassing diverse, productive resources such as knowledge, skills, instruments, and expertise. In addition, it emphasizes the prudent use of resources to ensure the organization's sustainability.

The conceptual framework of this study is based on the ecological consumption of resources to maintain the organization's sustainability. Green innovation, corporate social responsibility, and human resource management significantly and positively impact exporters' sustainable development, mediated and moderated by green commitment and knowledge sharing. In addition, the conceptual framework supports the moderated mediation between green knowledge sharing and green commitment, with a high level of green knowledge sharing supporting the role of green commitment as a mediator.
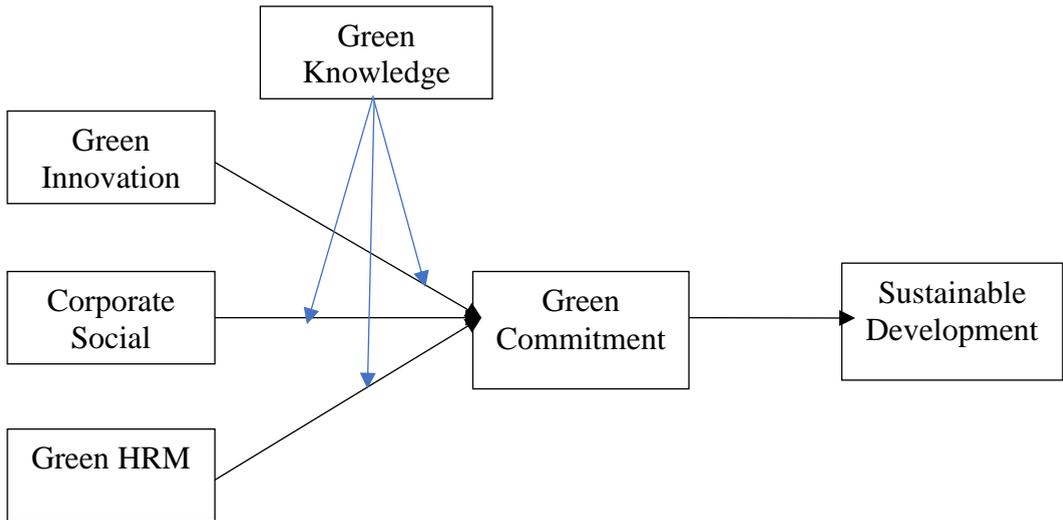

Figure 2. Conceptual Framework

2.2 Green Innovation and Sustainable Development

Changes in the global environment and climate have become a challenge for organizational development (D. Li et al., 2017). Numerous organizations emphasize adopting green innovations in their working styles to improve their economic standing, safeguard the environment, and promote healthy living on the planet (X. Chen et al., 2018). Green innovation refers to the steps an organization takes to mitigate all the detrimental, damaging, and unfavorable effects of the production process on the environment. In addition, green innovation (GI) enhances an organization's technology, processes, management methods, systems, and products (Zhao et al., 2021).

Moreover, green innovation is intrinsically linked to environmental management programs that improve environmental performance (Singh et al., 2020). An improved environmental performance refers to the production of eco-friendly products, which ultimately reduces the company's negative impact on the environment and improves the company's financial and social performance by mitigating costs and favoring the production of sustainable products, which also saves time and money (Weng et al., 2015). It can be demonstrated that green innovation (GI) is the fundamental strategic

approach that enables an organization to promote green development and product manufacturing as operational capabilities that can be used to achieve environmental efficiency and build trust among its stakeholders (Malik et al., 2021). Therefore, export organizations should concentrate on incorporating green innovations into their working environment, enabling them to satisfy consumers' sustainable preferences and attain competence.

H1: Green innovation significantly and positively influences sustainable development.

2.3 Corporate Social Responsibility and Sustainable Development

The significance of social responsibility has been a significant concern for researchers in recent years. In addition, integrating social perspectives with corporate growth has been a significant area of research for organizations that acquire human resources from society and are obligated to give something back (Sharma, 2019). Consequently, corporate social responsibility (CSR) has become a subject of business and academic study.

According to research (Matten et al., 2004), the conceptualization of corporate social responsibility results from organizations' imperative to consider a positive contribution to society that can be affected by their social actions (Abbas et al., 2019). Through corporate social responsibilities, organizations can become socially responsible by contributing to society rather than being profit-driven. By demonstrating corporate social responsibility (CSR), a company can ensure its socially responsible ethics, allowing it to follow the principle of sustainability. Companies that practice corporate social responsibility can attain customer satisfaction above all else. The connection between corporate social responsibilities and sustainable development can be understood because the natural environment is a key driver of resource development in business organizations (Xia et al., 2018).

Furthermore, organizations that engage in environmentally responsible activities gain a competitive advantage. Moreover, stakeholders are aware of socially responsible activities and prefer the products of businesses that incorporate corporate social responsibility. However, export organizations should promote corporate social responsibility (CSR) because it will considerably increase consumer satisfaction and improve the company's viability and competence.

H2: Sustainable development is significantly and positively influenced by corporate social responsibility.

2.4 Green HRM and Sustainable Development

Developed and developing nations strive to operate in a sustainable and environmentally friendly environment (Yong et al., 2020). Business organizations operating in a competitive climate strive to be environmentally benign and implement green practices.

Human resource management more strongly supports this ecological agenda (Roscoe et al., 2019). Green HRM practices enable organizations to develop human capital to enhance the organization's environmental process and sustainable development. However, incorporating green human resource management can increase an organization's likelihood of being sustainable.

According to research (Norton et al., 2014), HRM ensures an organization's sustainability by influencing its employees' attitudes and behaviors (Khan et al., 2022). Green human resource management impacts employee performance in the workplace (Luu, 2019), which improves the employee's green conduct by increasing their awareness of environmental issues (Renwick et al., 2016). In the contemporary era, organizations are primarily focused on advancing sustainability. Research (Siyambalapitiya et al., 2018) has demonstrated a significant relationship between environmental performance, environmental management, and human resource department practices. An organization that implements effective human resource practices will improve its environmental performance, promoting sustainability (Mousa et al., 2020). In addition, export organizations should provide responsive incorporation of green human resource management practices to achieve a highly developed environmental performance and sustainability and attain competency as consumers become increasingly interested in purchasing eco-friendly products. For this reason, the researcher has determined that sustainable human resource management is a valuable research topic for business sustainability.

H3: Green human resource management significantly and positively impacts sustainable development.

2.5 Mediation of Green Commitment

On the global business market, green commitment mediates the relationship between green innovation, corporate social responsibility, green HRM, and sustainable development of organizations. The green commitment may be defined as the employees' intention to demonstrate their value to the organization by acquiring sustainable behavioral traits. Huang et al. (2021) represent a green commitment as the fervor and commitment of employees toward environmental management at their workplaces to demonstrate green behavior (Khan et al., 2022). This environmentally responsible behavior is essential to the organization's long-term success.

Corporate social responsibility enables employees to work more efficiently, and the organization's reputation for environmental performance has improved. It has been observed that employees are more committed to their work when they believe their company has a positive environmental reputation among its competitors (Khaskheli et al., 2020). Employees' dedication to their organization enables them to introduce innovation to their work, improving its quality and significantly improving the company's sustainable environmental performance.

H4: Green commitment acts as a mediator between green innovation and sustainable development.

H5: Green commitment significantly mediates the relationship between corporate social responsibility and the organization's sustainable development.

Human resource management influences the attitudes and actions of employees (Islam et al., 2020). Moreover, green HRM practices influence the psychological characteristics of employees, such as their green commitment (Shen et al., 2018). Employees' commitment to sustainability is believed to mediate the relationship between green HRM and employee performance. In other words, the green promise of the employees enhances their sustainable working practices and improves the organization's environmental performance, resulting in sustainable and competent development. However, instituting a green commitment within export organizations will pave the way for attracting consumers, as purchasers are predominantly drawn to sustainable products.

H6: The relationship between green HRM and sustainable development is significantly mediated by green commitment.

2.6 Moderated Mediation of Green Knowledge Sharing

The research model suggests that green knowledge exchange is the principal moderator between green innovation, corporate social responsibility, and green human resource management. In addition, the researcher believes that a higher level of green knowledge sharing increases the green commitment of employees because mutual knowledge sharing makes them more committed, thereby significantly mediating the relationship between green innovation, green HRM, corporate social responsibility, and sustainable development (Zhang et al., 2023). Employees' favorable attitudes toward their workplaces are compelled by their green commitment (Imamoglu et al., 2019). The philosophy and behaviors of employees toward organizational outcomes significantly impact a company's success. Thus, green knowledge sharing moderates the relationship between green innovation and its corresponding variables to green commitment, strengthening its relationship with sustainability.

Knowledge sharing is an effective method for promoting long-term viability and competence. It is also utilized by various organizations to comprehend their employees' ideas and generate innovation in their working abilities in response to consumer demand. According to research (S. Wang et al., 2010), knowledge sharing can be defined as a fundamental source through which employees can communicate their perspectives and contribute to knowledge application and innovation, thereby facilitating the attainment of organizational objectives and competitiveness (Arfi et al., 2018). Therefore, the present research concentrates on the moderating effect of green knowledge sharing between green commitment, corporate responsibility, green human resource management, and green commitment to enhancing sustainable exports.

In the present day, consumers are aware of green knowledge, and organizations are implementing green knowledge-sharing (GKS) practices. Green knowledge awareness among consumers and employees moderates the relationship between green innovativeness and green commitment among employees (Lin et al., 2019). Furthermore, the corporate employees' knowledge-sharing practices influence this practice among the organization's normal employees, moderating the relationship between corporate social responsibility and green commitment employees.

H7: Green knowledge sharing significantly moderates the relationship between green innovation and commitment.

H8: Green knowledge sharing (GKS) moderates corporate social responsibility and green commitment.

Green knowledge sharing (GKS) considerably moderates the impact of green human resource management on green commitment. In addition, a high level of green knowledge sharing enhances the positive effect of green HRM on green commitment. In human resource management, knowledge sharing has been found to moderate relationships between job satisfaction and organizational culture (Tang et al., 2018) and between high-dedication work systems and employee service behavior (Gilal et al., 2019). These practices pave the path for the organization's sustainable development; consequently, green knowledge sharing is an effective workplace practice.

H9: Green knowledge sharing significantly moderates the relationship between green HRM and commitment.

3. METHODS

3.1 Instruments and Measures

This study focuses on six variables: green human resource management, corporate social responsibility, and green innovation as independent variables, sustainable development as dependent variables, green commitment as a mediating variable, and green knowledge sharing as a moderating variable. The researcher has measured these variables using scales from prior investigations. These gauges are utilized primarily due to their dependability, validity, and established credibility. All of the constructs were anchored by the Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. A six-item scale was used to measure green human resource management (Dumont et al., 2017); a four-item scale was used to measure corporate social responsibility, which was adopted (Hanaysha, 2017); a six-item scale was used for green innovation (Y.-S. Chen et al., 2006); a four-item scale was used to measure sustainable development (Gericke et al., 2019); a five-item scale was used to measure SPSS was used to examine the data's validity, specificity, and authenticity, and to conduct critical tests to corroborate the dataset's dependability. After ensuring the integrity of the dataset,

AMOS was utilized to assess the model's fit and analyze the study's hypothesis using structural equation modeling (SEM). The data was collected using a questionnaire. The questionnaire consisted of two sections, the first of which focused on the demographic characteristics of the participants. The second section covered the research constructs.

3.2 Survey and Sampling

The focus of the study was the organizational implementation of "green perspectives," and the application of green perspectives in Vietnam's export industry was examined. Thus, the data collection procedure centered on including employees of Vietnam's exporting companies. Using non-probability convenience sampling, the researcher contacted willing employees to partake in the data collection process. In this investigation, data were collected via a self-administered online survey. After the questionnaire has been created effectively, the survey is developed and disseminated online to respondents. Consequently, the survey was created on Google Forums and distributed via email. The export industry management in Vietnam supplied the email list. A consent form delineating the aims and objectives of the study was sent to respondents and managerial authorities one day before the distribution of the survey. The consent form intends to obtain the participation consent and approval of respondents. Respondents were requested to complete the questionnaire via email. The questionnaire was distributed to 400 individuals, and 280 responses were collected. The remaining responses were excluded due to a high percentage of missing values and outliers, from which 262 responses were deemed suitable for further analysis.

4.   RESULTS

4.1 Demographic Profile

A total of 262 respondents participated in the study; 54.9% were male, and 45.1% were female, as demonstrated in Figure 3.
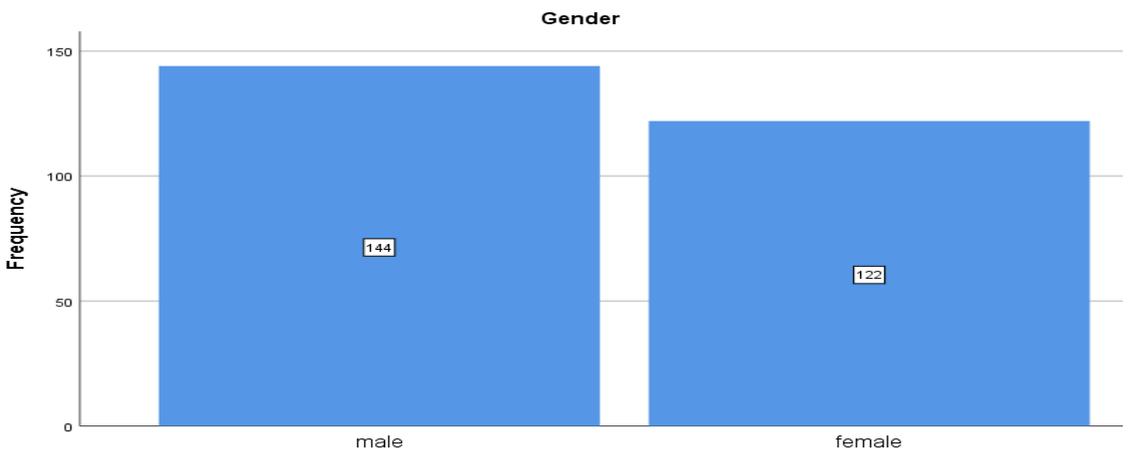

Figure 3. Gender Distribution of Respondents

The respondents were mainly between 21 and 35 years old, and only 10 were reportedly above 35.
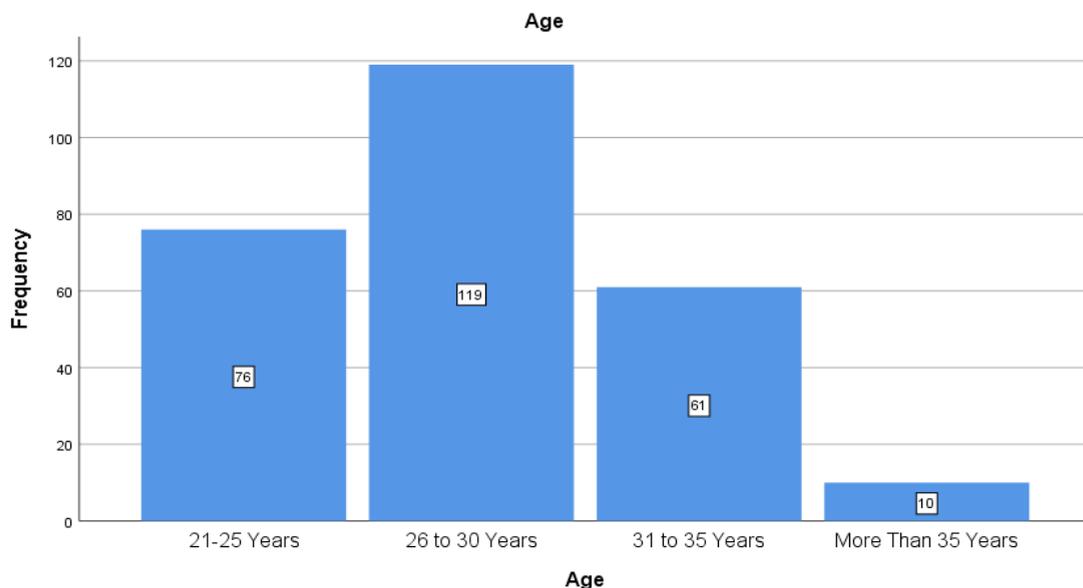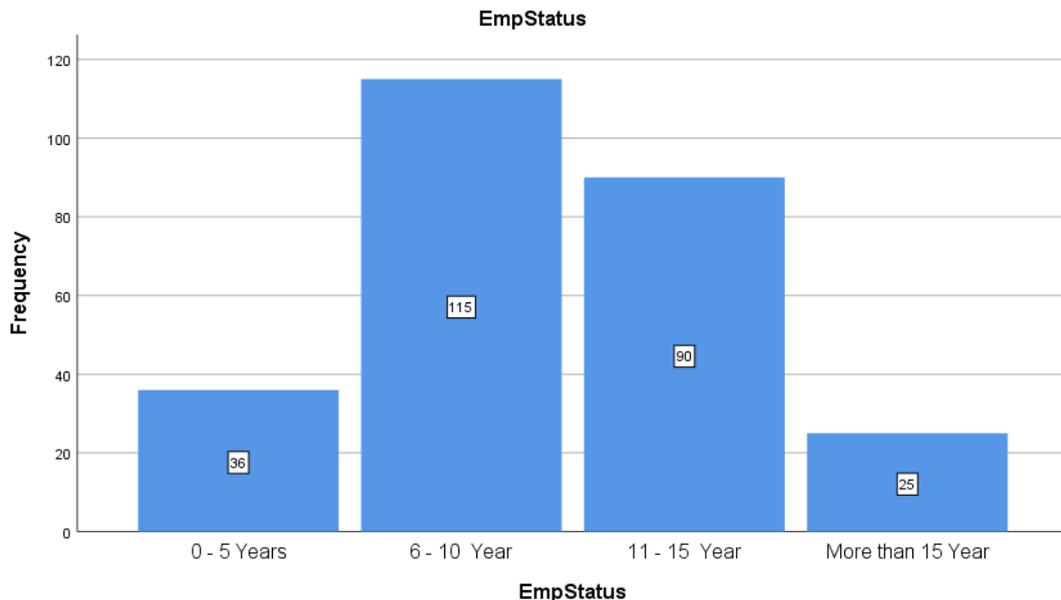

Figure 4. Age of Respondents

Figure 5. Experience of Respondents

Figure 5 depicts the employment status of respondents, and it can be seen that 115 (43.8%) respondents had 6-10 years of employment experience. Whereas 35 had been

employed for 0-5 years and 90 for 11-15 years, respectively. These results indicate that most of the sample was of middle age and had been employed for an average of eight to ten years.

4.2 Descriptive Statistics

The data are summarized using descriptive statistics in Table 1. The results indicate a 5-point Likert scale with minimum and maximum values of 1 and 5 was used. Table 2 demonstrates that there are no missing values for any of the constructs and that the means of all variables are larger than 3. The data were asymmetric, and the skewness values fell within the range of -2 to +2 previously recommended (Hair et al., 2010).

Table 1. Descriptive Study

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
GHR	266	1.50	5.00	3.4311	.95707	-.372	.149
SD	266	1.75	5.00	3.5160	1.07764	-.255	.149
GKS	266	1.00	5.00	3.5075	1.01981	-.547	.149
GC	266	1.00	5.00	3.6071	1.19799	-.569	.149
CS	266	1.00	5.00	3.3874	1.17135	-.370	.150
GI	266	1.00	5.00	3.3972	.93829	-.256	.149

The researcher assessed the suitability and sufficiency of the sample for factor detection. Tabachnick, Fidell, and Ullman (2007)Tabachnick et al. (2007) state that KMO test statistics must lie between 0.6 and 1.0. Table 2 verifies the sample's sufficiency with a value of 0.92. Moreover, the researcher determined that the sample exhibits a significant correlation for factor analysis, given that the significance level is less than 0.05.

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Bartlett's Test of Sphericity	Approx. Chi-Square	6975.796
	df	378
	Sig.	.000

4.3 Rotated Component Matrix

Each construct's factor loadings are listed in Table 3. According to the criteria outlined by Y. Li et al. (2020), the factor loadings must be greater than 0.4, and cross-loadings must be absent. Therefore, the researcher chose items that met or exceeded the predetermined factor loading threshold. In addition, it was confirmed that no instances

of cross-loading occurred. Table 3 verifies that each construct's elements have been assigned to the correct columns.

Table 3. Rotated Component Matrix

	1	2	3	4	5	6
GHR1	.767					
GHR2	.812					
GHR3	.796					
GHR4	.747					
GHR5	.744					
GHR6	.733					
SD1						.820
SD2						.704
SD3						.699
SD4						.661
GI1					.825	
GI2					.863	
GI3					.773	
GI5					.777	
GI6					.794	
GKS1			.768			
GKS2			.770			
GKS3			.779			
GKS4			.781			
GKS5			.683			
GC1				.846		
GC2				.852		
GC3				.848		
GC4				.780		
CS1		.745				
CS2		.763				
CS3		.743				

4.4 Convergent & Discriminant Validity

All variables' Composite Reliability (CR) values exceeded the predetermined threshold of > 0.70, indicating high reliability. In addition, the Average Variance Extracted (AVE) values were greater than 0.5, leading the researcher to conclude that convergent validity was not an issue. All AVE values were greater than the Mean Squared Variance regarding discriminant validity.

Table 4. Convergent Validity

	CR	AVE	MSV	MaxR(H)	GHRM	CSR	GKNOW	GRC	GIN	SUSD
GHRM	0.920	0.657	0.498	0.926	**0.811**					
CSR	0.874	0.699	0.357	0.890	0.383***	**0.836**				
GKNOW	0.901	0.645	0.388	0.906	0.526***	0.597***	**0.803**			
GRC	0.947	0.817	0.329	0.963	0.547***	0.494***	0.574***	**0.904**		
GIN	0.818	0.514	0.442	0.924	0.613***	0.408***	0.427***	0.438***	**0.717**	
SUSD	0.950	0.829	0.498	0.986	0.706***	0.451***	0.623***	0.542***	0.665***	**0.910**

The researcher used the Heterotrait Monotrait (HTMT) technique to do more research on discriminant validity (Henseler et al., 2015). The correlation between the two constructs must be less than 0.850 for this test to be valid (Kline, 2011). Table 5 demonstrates that the data's discriminant validity is verified.

Table 5. HTMT Analysis

	GHRM	CSR	GKNOW	GRC	GIN	SUSD
GHRM						
CSR	0.395					
GKNOW	0.538	0.613				
GRC	0.567	0.510	0.599			
GIN	0.645	0.693	0.559	0.549		
SUSD	0.691	0.482	0.623	0.549	0.722	

Table 6 and Figure 6 display the results of the CFA, which indicate whether or not the model was appropriate. The primary objective of model fitness is to estimate and evaluate whether all variables incorporated in the research model can exist in a single model significantly. Table 6's fitness indices demonstrate that the measurement model is appropriate and can be used to evaluate the structural relationships among the variables, as proposed in Figure 2.

Table 6. Model Fitness

	CMIN/df	GFI	IFI	CFI	RMSEA
Threshold	Less than 3	Higher than .08	Higher than 0.9	Higher than 0.9	Less than 0.08
Observed	2.579	.839	.929	.928	.077

Hypotheses Testing

The results of verifying the hypotheses through structural analysis are presented in Table 7, and it is evident that GHR and GI had a positive and significant impact. A unitary increase in GHR would increase the sustainable development of Vietnamese export firms by 37.5%, while increases in green innovation would increase it by 35.1%. Both of these hypotheses were adopted because their p-values were less than 0.01. Although the impact of CSR was negligible, it was still positive.

Table 8 confirms the mediation effect of GC and shows that all three mediation associations were significant at $p<0.01$, $p<0.05$, and $p<0.001$.

Table 9 shows the hypothesis that GKS has non-significant moderation between the association between GC and GI, as the p-value exceeded 0.05. Hence, the result led to rejecting this hypothesis ($\beta= -0.159$, $p=.0.840$). The results showed that GKS significantly moderated the mediation effect of GC, and had a negative impact of -.625,

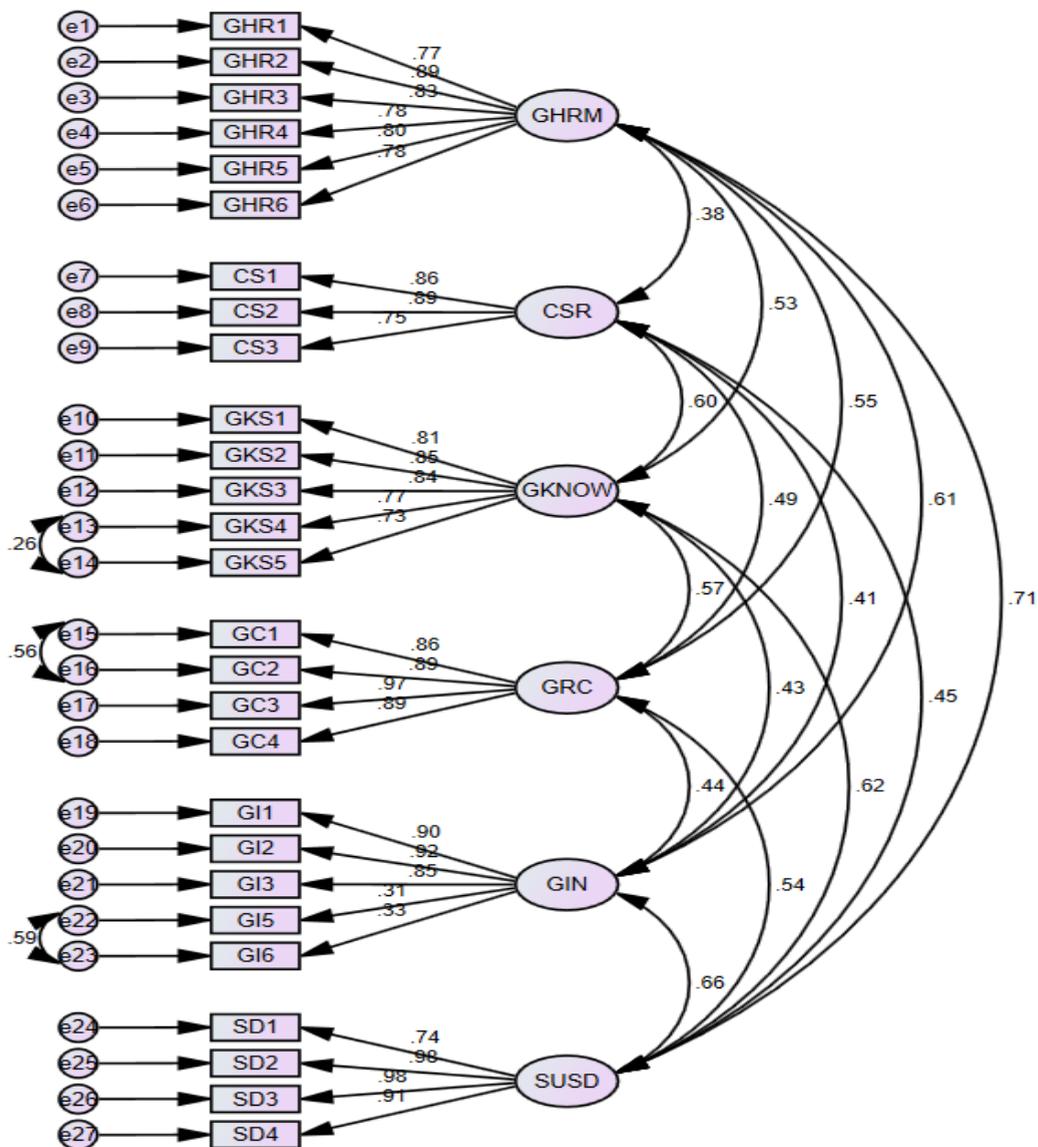indicating that the presence of GKS reduced the positive mediation effect of GC between CSR and SD.

Figure 6. Confirmatory Factor Analysis

Table 7. Structural Equation Model

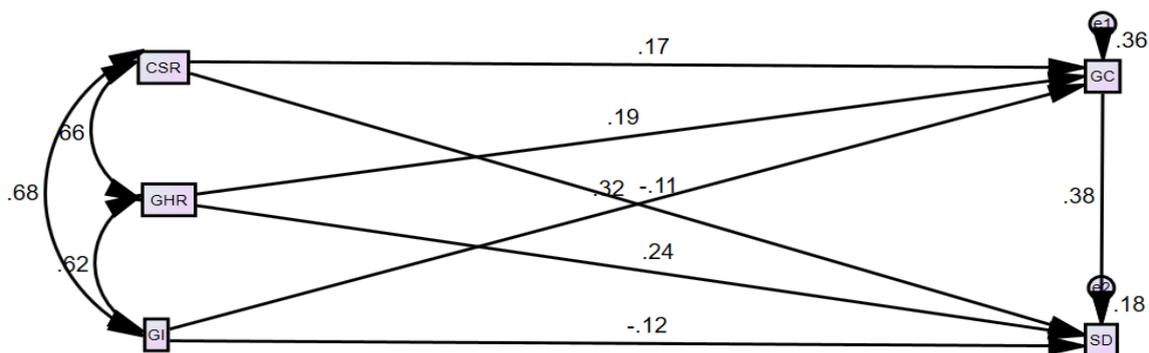| Parameter			Estimate	Lower	Upper	P
SD	<---	GHR	.375	.237	.532	.011
SD	<---	CS	.023	-.071	.143	.603
SD	<---	GI	.351	.231	.465	.009

Figure 7. Structural Equation Modeling

Table 8. Mediation Effects of GC

Indirect Path	Standardized Estimate	Lower	Upper	P-Value
GHR --> GC --> SD	0.052*	0.017	0.109	0.029
CS --> GC --> SD	0.027*	0.006	0.059	0.026
GI --> GC --> SD	0.025*	0.006	0.072	0.028

Table 9. Moderation of GKS

Parameter			Estimate	Lower	Upper	P
ZGC	<---	ZCSXGKS	.026	-.469	.458	.945
ZGC	<---	ZGIXGKS	-.218	-.867	.392	.622
ZGC	<---	ZGHRXGKS	-.625	-1.203	-.062	.075

5. DISCUSSION AND CONCLUSION

Green knowledge sharing moderates the relationship between green innovation, HRM, corporate social responsibility, and sustainable development, while green commitment is a significant mediator. Moreover, the researcher proposes that a higher level of green knowledge sharing facilitates the strong mediation of green commitment (Khan et al., 2022) between the independent and dependent variables (sustainable development). Based on the structural equation model analysis of the proposed hypotheses, the direct relationship between corporate social responsibility and sustainable development (can decrease sustainability by up to 10.9%) led to the rejection of the hypothesis. The first and third hypotheses are accepted because the impact of green HRM will increase sustainability by 24%, and the impact of green innovation is considerable over sustainable development (SD).

Moving toward the analysis of the mediation hypotheses, *"Green commitment significantly mediates the relationship between green innovation and sustainable development," "Green commitment significantly mediates the relationship between*

corporate social responsibility and sustainable development," and *"the relationship between green human resource management and sustainable development is significantly mediated by green commitment."* In light of these findings, the researcher concludes that green commitment (GC) is a significant and powerful mediator between green innovation, green HRM, corporate social responsibility, and sustainable development of Vietnamese export organizations. These significant findings led to the acceptance of all hypotheses regarding mediation. It can be said that green commitment (GC) plays a crucial role in developing the green behaviors of employees, ultimately contributing to the organization's sustainable performance and competence.

Despite this, the analysis regarding the moderating role of green knowledge sharing is unsatisfactory. The hypotheses thus proposed in the context of moderation are *"Green knowledge sharing significantly moderates the relationship between green innovation and green commitment," "Green knowledge sharing (GKS) significantly moderates the relationship between corporate social responsibility and green commitment,"* and *"Green knowledge sharing significantly moderates the relationship between green human resource management and green commitment (GC)."*

The interpretations indicate that green knowledge sharing does not substantially moderate the relationship between green innovation, green HRM, and commitment, so the hypotheses are rejected. The negative significance of the moderating effect of green knowledge sharing between corporate social responsibility and green commitment (GC) indicates that the extreme level of green knowledge sharing negatively influences the mediation of green commitment between corporate social responsibility (CSR) and sustainable development of Vietnamese export organizations. A high level of green knowledge sharing weakens the mediation of green commitment between corporate social responsibility and the organization's sustainability. Therefore, spreading green knowledge undermines the mediation of green commitment.

This research has been conducted to increase the prevalence of environmentally conscious practices within export organizations. Green and eco-friendly practices play a pivotal role in manufacturing goods' innovation, quality, and originality, making them essential. GC mediates the relationship between incorporating corporate social responsibilities and green human resource management practices and the sustainability of the products. Our findings suggest that the personnel of export organizations are their greatest assets. Their actions and dispositions improve the company's environmental performance and give it a competitive edge in the global business market.

6. THEORETICAL IMPLICATIONS

Many academic and business researchers will benefit from our current contributions to sustainable development studies. In addition, the research has several theoretical implications, as will be explained below:

• The research results will enable organizations to implement green and sustainable practices in various company departments to increase employee awareness and positively influence workplace attitudes and behaviors. In addition, the current research will enable export organizations to enhance their theoretical frameworks by incorporating green human resource management practices, corporate social responsibility, and commitment as powerful mediators of sustainability. Lastly, organizations can balance their employees' green knowledge-sharing practices to improve environmental performance and attain sustainability and competitive advantage. Based on the resource-based view (RBV) theory, this study also contributes to formulating strategies for conserving natural resources necessary for sustainable development and organizational operations.

7. PRACTICAL IMPLICATIONS

Despite the theoretical implications, the current study will have several practical repercussions for export organizations, as described below.

• The current study will promote an eco-friendly environment within export organizations by enhancing their employees' environmental performance and commitment to their projects, a prerequisite for producing innovative, sustainable, high-quality products. The company will benefit from producing sustainable products because consumers prefer eco-friendly goods. In addition, it will enable policymakers, practitioners, corporate staff, and human resource management staff of organizations to increase environmentally friendly practices among their employees, resulting in a healthy and sustainable working environment essential for a healthy consumer lifestyle and the preservation of natural resources. In addition, the research will enable Vietnamese export organizations and international organizations to increase employee enthusiasm by implementing ecological practices. For instance, the organization may reward or promote employees for their green abilities contributing to sustainability.

8. LIMITATIONS OF THE STUDY

Existing research has theoretical and practical ramifications, but it also has limitations. Based on the current study, business organizations can further research by examining additional variables essential for an organization's sustainable development. Future researchers may find the following limitations intriguing:

• This study is cross-sectional and could be continued in the future with a more comprehensive data collection process by concentrating on longitudinal research. The nature of our study is quantitative, but in the future, researchers may employ qualitative or blended methodologies (qualitative and quantitative).

In addition, information has been gathered from personnel of Vietnam's export organizations. In the future, it could be inferred from other nations and could serve as a foundation for conducting the study in any other business sector.

9.   ACKNOWLEDGMENT

REFERENCES

Abbas, J., Mahmood, S., Ali, H., et al. (2019). The effects of corporate social responsibility practices and environmental factors through a moderating role of social media marketing on sustainable performance of business firms. *Sustainability, 11*(12), 3434. doi: https://doi.org/10.3390/su11123434

Ahmed, S., Naz, F., Abbas, Z., & Batool, K. H. (2022). Impact of green innovation on sustainable development with mediating effect of knowledge management. *Journal of Business Management Studies-JBMS, 1*(1), 1-16. Retrieved from http://www.journalbms.com/index.php/jbms/article/view/2

Anwar, N., Mahmood, N. H. N., Yusliza, M. Y., Ramayah, T., Faezah, J. N., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of cleaner production, 256*, 120401. doi: https://doi.org/10.1016/j.jclepro.2020.120401

Arfi, W. B., Hikkerova, L., & Sahut, J.-M. (2018). External knowledge sources, green innovation and performance. *Technological forecasting and social change, 129*(C), 210-220. doi: https://doi.org/10.1016/j.techfore.2017.09.017

Barney, J. B., Ketchen Jr, D. J., & Wright, M. (2011). The future of resource-based theory: revitalization or decline? *Journal of management, 37*(5), 1299-1315. doi: https://doi.org/10.1177/0149206310391805

Cecere, R., & Bernardi, P. (2022). Cultural Entrepreneurship and Green Innovation in ASEAN: A Focus on SMEs and Vietnam Area. In *Cultural Entrepreneurship: New Societal Trends* (pp. 109-119): Springer, 109-119. doi: https://doi.org/10.1007/978-981-19-2771-3_10.

Chen, S.-L., Su, Y.-S., Diep, G. L., Sivanandan, P., Sadiq, M., & Phan, T. T. H. (2023). The impact of environmental knowledge and green supply chain practices in improving sustainable energy production: the moderating role of green behavior and green leadership. *Environmental Science and Pollution Research, 30*(19), 57017-57031. doi: https://doi.org/10.1007/s11356-023-26340-7

Chen, X., Yi, N., Zhang, L., & Li, D. (2018). Does institutional pressure foster corporate green innovation? Evidence from China's top 100 companies. *Journal of cleaner production, 188*, 304-311. doi: https://doi.org/10.1016/j.jclepro.2018.03.257

Chen, Y.-S., Lai, S.-B., & Wen, C.-T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business ethics, 67*(4), 331-339. doi: https://doi.org/10.1007/s10551-006-9025-5

Chien, F., Sadiq, M., Nawaz, M. A., Hussain, M. S., Tran, T. D., & Le Thanh, T. (2021). A step toward reducing air pollution in top Asian economies: The role of green energy, eco-innovation, and environmental taxes. *Journal of environmental management, 297*, 113420. doi: https://doi.org/10.1016/j.jenvman.2021.113420

csmathsg.com. (2023). Balancing the pillars of sustainable development. Retrieved from https://csmathsg.com/course-content/week-4/section-4-1-balancing-the-pillars-of-sustainable-development/

Das, A., McFarlane, A., & Jung, Y. C. (2019). Remittances and GDP in Jamaica: An ARDL bounds testing approach to cointegration. *International Economic Journal, 33*(2), 365-381. doi: https://doi.org/10.1002/hrm.21792

Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human resource management, 56*(4), 613-627. doi: https://doi.org/10.1002/hrm.21792

Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2019). The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development. *Sustainable Development, 27*(1), 35-49. doi: https://doi.org/10.1002/sd.1859

Gilal, F. G., Ashraf, Z., Gilal, N. G., Gilal, R. G., & Channa, N. A. (2019). Promoting environmental performance through green human resource management practices in higher education institutions: A moderated mediation model. *Corporate Social Responsibility and Environmental Management, 26*(6), 1579-1590. doi: https://doi.org/10.1002/csr.1835

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: Global edition*: NJ: Pearson Higher Education Upper Saddle River

Hanaysha, J. R. (2017). Impact of social media marketing, price promotion, and corporate social responsibility on customer satisfaction. *Jindal Journal of Business Research, 6*(2), 132-145. doi: https://doi.org/10.1177/2278682117715359

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science, 43*(1), 115-135. doi: https://doi.org/10.1007/s11747-014-0403-8

Hhdnp, O., & Arulrajah, A. A. (2014). Green human resource management: Simplified general reflections. *International Business Research, 7*(8), 101-112. doi: https://doi.org/10.5539/ibr.v7n8p101

Huang, S.-Z., Sadiq, M., & Chien, F. (2021). Dynamic nexus between transportation, urbanization, economic growth and environmental pollution in ASEAN

countries: does environmental regulations matter? *Environmental Science and Pollution Research, 30*(15), 1-16. doi: https://doi.org/10.1007/s11356-021-17533-z

Imamoglu, S. Z., Ince, H., Turkcan, H., & Atakay, B. (2019). The effect of organizational justice and organizational commitment on knowledge sharing and firm performance. *Procedia Computer Science, 158*, 899-906. doi: https://doi.org/10.1016/j.procs.2019.09.129

Islam, M. S., Ferdous, M. Z., & Potenza, M. N. (2020). Panic and generalized anxiety during the COVID-19 pandemic among Bangladeshi people: An online pilot survey early in the outbreak. *Journal of affective disorders, 276*, 30-37. doi: https://doi.org/10.1016/j.jad.2020.06.049

Khan, K., Shams, M. S., Khan, Q., Akbar, S., & Niazi, M. M. (2022). Relationship among green human resource management, green knowledge sharing, green commitment, and green behavior: A moderated mediation model. *Frontiers in Psychology, 13*, 1-11. doi: https://doi.org/10.3389/fpsyg.2022.924492

Khaskheli, A., Jiang, Y., Raza, S. A., Qureshi, M. A., Khan, K. A., & Salam, J. (2020). Do Csr activities increase organizational citizenship behavior among employees? Mediating role of affective commitment and job satisfaction. *Corporate Social Responsibility and Environmental Management, 27*(6), 2941-2955. doi: https://doi.org/10.1002/csr.2013

Kline, R. B. (2011). *Principles and practice of structural equation modeling*: Guilford Publications. Retrieved from https://www.guilford.com/books/Principles-and-Practice-of-Structural-Equation-Modeling/Rex-Kline/9781462551910

Li, D., Zheng, M., Cao, C., Chen, X., Ren, S., & Huang, M. (2017). The impact of legitimacy pressure and corporate profitability on green innovation: Evidence from China top 100. *Journal of cleaner production, 141*, 41-49. doi: https://doi.org/10.1016/j.jclepro.2016.08.123

Li, Y., Wen, Z., Hau, K.-T., Yuan, K.-H., & Peng, Y. (2020). Effects of cross-loadings on determining the number of factors to retain. *Structural Equation Modeling: A Multidisciplinary Journal, 27*(6), 841-863. doi: https://doi.org/10.1080/10705511.2020.1745075

Lin, J., Lobo, A., & Leckie, C. (2019). The influence of green brand innovativeness and value perception on brand loyalty: the moderating role of green knowledge. *Journal of Strategic Marketing, 27*(1), 81-95. doi: https://doi.org/10.1080/0965254X.2017.1384044

Luu, T. T. (2019). Building employees' organizational citizenship behavior for the environment: The role of environmentally-specific servant leadership and a moderated mediation mechanism. *International Journal of Contemporary Hospitality Management, 31*(1), 406-426. doi: https://doi.org/10.1108/IJCHM-07-2017-0425

Malik, M. S., Ali, K., Kausar, N., & Chaudhry, M. A. (2021). Enhancing environmental performance through green hrm and green innovation: Examining the mediating

role of green creativity and moderating role of green shared vision. *Pakistan Journal of Commerce and Social Sciences (PJCSS), 15*(2), 265-285. Retrieved from https://jespk.net/publications/4429.pdf

Matten, D., & Moon, J. (2004). Corporate social responsibility. *Journal of Business ethics, 54*, 323-337. doi: https://doi.org/10.1007/s10551-004-1822-0

Mousa, S. K., & Othman, M. (2020). The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework. *Journal of cleaner production, 243*, 118595. doi: https://doi.org/10.1016/j.jclepro.2019.118595

Norton, T. A., Zacher, H., & Ashkanasy, N. M. (2014). Organisational sustainability policies and employee green behaviour: The mediating role of work climate perceptions. *Journal of Environmental Psychology, 38*, 49-54. doi: https://doi.org/10.1016/j.jenvp.2013.12.008

Pham, N. T., Thanh, T. V., Tučková, Z., & Thuy, V. T. N. (2020). The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis. *International Journal of Hospitality Management, 88*, 102392. doi: https://doi.org/10.1016/j.ijhm.2019.102392

Renwick, D. W., Jabbour, C. J., Muller-Camen, M., Redman, T., & Wilkinson, A. (2016). Contemporary developments in Green (environmental) HRM scholarship. *The International Journal of Human Resource Management, 27*(2), 114-128. doi: https://doi.org/10.1080/09585192.2015.1105844

Roscoe, S., Subramanian, N., Jabbour, C. J., & Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development. *Business Strategy and the Environment, 28*(5), 737-749. doi: https://doi.org/10.1002/bse.2277

Sadiq, M., Le-Dinh, T., Tran, T. K., Chien, F., Phan, T. T. H., & Quang Huy, P. (2023). The role of green finance, eco-innovation, and creativity in the sustainable development goals of ASEAN countries. *Economic Research-Ekonomska Istraživanja, 36*(2), 2175010. doi: https://doi.org/10.1080/1331677X.2023.2175010

Sadiq, M., Ngo, T. Q., Pantamee, A. A., Khudoykulov, K., Thi Ngan, T., & Tan, L. P. (2023). The role of environmental social and governance in achieving sustainable development goals: evidence from ASEAN countries. *Economic Research-Ekonomska Istraživanja, 36*(1), 170-190. doi: https://doi.org/10.1080/1331677X.2022.2072357

Saeed, B. B., Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corporate Social Responsibility and Environmental Management, 26*(2), 424-438. doi: https://doi.org/10.1002/csr.1694

Shahzad, M., Qu, Y., Zafar, A. U., & Appolloni, A. (2021). Does the interaction between the knowledge management process and sustainable development practices

boost corporate green innovation? *Business Strategy and the Environment, 30*(8), 4206-4222. doi: https://doi.org/10.1002/bse.2865

Sharma, E. (2019). A review of corporate social responsibility in developed and developing nations. *Corporate Social Responsibility and Environmental Management, 26*(4), 712-720. doi: https://doi.org/10.1002/csr.1739

Shen, J., Dumont, J., & Deng, X. (2018). Retracted: Employees' Perceptions of Green HRM and Non-Green Employee Work Outcomes: The Social Identity and Stakeholder Perspectives. *Group & Organization Management, 43*(4), 594-622. doi: https://doi.org/10.1177/1059601116664610

Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological forecasting and social change, 150*(C), 119762. doi: https://doi.org/10.1016/j.techfore.2019.119762

Siyambalapitiya, J., Zhang, X., & Liu, X. (2018). Green human resource management: A proposed model in the context of Sri Lanka's tourism industry. *Journal of cleaner production, 201*, 542-555. doi: https://doi.org/10.1016/j.jclepro.2018.07.305

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (5th ed.): Allyn & Bacon/Pearson Education

Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: scale development and validity. *Asia pacific journal of human resources, 56*(1), 31-55. doi: https://doi.org/10.1111/1744-7941.12147

Vu, T., Nguyen, N., Nguyen, X., Nguyen, Q., & Nguyen, H. (2020). Corporate social responsibility, employee commitment, reputation, government support and financial performance in Vietnam's export textile enterprises. *Accounting, 6*(6), 1045-1058. doi: http://dx.doi.org/10.5267/j.ac.2020.7.015

Wang, J., Xue, Y., Sun, X., & Yang, J. (2020). Green learning orientation, green knowledge acquisition and ambidextrous green innovation. *Journal of cleaner production, 250*, 119475. doi: https://doi.org/10.1016/j.jclepro.2019.119475

Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human resource management review, 20*(2), 115-131. doi: https://doi.org/10.1016/j.hrmr.2009.10.001

Weng, H.-H., Chen, J.-S., & Chen, P.-C. (2015). Effects of green innovation on environmental and corporate performance: A stakeholder perspective. *Sustainability, 7*(5), 4997-5026. doi: https://doi.org/10.3390/su7054997

Xia, B., Olanipekun, A., Chen, Q., Xie, L., & Liu, Y. (2018). Conceptualising the state of the art of corporate social responsibility (CSR) in the construction industry and its nexus to sustainable development. *Journal of cleaner production, 195*, 340-353. doi: https://doi.org/10.1016/j.jclepro.2018.05.157

Yong, J. Y., Yusliza, M.-Y., & Fawehinmi, O. O. (2020). Green human resource management: A systematic literature review from 2007 to 2019. *Benchmarking:*

An International Journal, 27(7), 2005-2027. doi: https://doi.org/10.1108/BIJ-12-2018-0438

Zhang, Y., Li, L., Sadiq, M., & Chien, F. S. (2023). Impact of a sharing economy on sustainable development and energy efficiency: evidence from the top ten Asian economies. *Journal of Innovation & Knowledge, 8*(1), 100320. doi: https://doi.org/10.1016/j.jik.2023.100320

Zhao, L., Zhang, Y., Sadiq, M., Hieu, V. M., & Ngo, T. Q. (2021). Testing green fiscal policies for green investment, innovation and green productivity amid the COVID-19 era. *Economic Change and Restructuring*, 1-22. doi: https://doi.org/10.1007/s10644-021-09367-z