Journal of Business Strategies, Vol. 19 No.2, 2025, pp 140-177 *DOI:10.29270/JBS.19.2(25).07*

GREEN HRM AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR FOR SUSTAINABLE ECONOMIC PERFORMANCE: A CASE FROM AN EMERGING ECONOMY

Dominance
Dr. Mustaghis ur Rahman ,
Muhammad Faraz

ABSTRACT

Green Human Resource Management (GHRM) is a growth area that many organizations in emerging economies are adopting as they grapple with sustainability issues. Sustainability is of great importance worldwide, and in developed countries, we see companies adopting GHMR as a method to achieve, at the same time, economic success and environmental stewardship. This study looks at the relationships between the elements of GHRM practice (green recruitment, green training, green performance management) and what it does for a company's economic performance, which we see plays a mediating role in Green Organizational Citizenship Behavior (GOCB). We base this research on two theory models -- the Ability-Motivation-Opportunity (AMO) model and Social Exchange Theory, which we use to study the results of GHRM. We used a quantitative method, which included survey responses from 150 HR personnel in 38 multinational firms in Pakistan. We analyzed the data using Structural Equation Modeling (SEM) in Smart PLS 4.0. The SEM analysis we did shows that GHMR practices play a dual role of direct and indirect through GOCB, which is an indirect play in improving a company's economic performance. What we find is that the value of putting sustainability into HR systems, which in turn fosters a workplace environment that encourages pro-environmental behavior, which in turn produces positive economic results. This study, which is adding to a very small set of research out of South Asia, particularly Pakistan, presents the results of GHMR in a developing economy setting. We put forth that for

management and policy-making professionals, it is to their benefit to develop integrated green HR strategies that put companies' environmental responsibilities into play as a part of their competitive advantage.

Keywords:
Green Human Resource Management (GHRM), Green Organizational Citizenship Behavior (GOCB), Sustainable Economic Performance, Emerging Economies, AMO Framework, Environmental Sustainability in HRM

Senior Professor at the Department of Management Studies, BBBSK, Bahria University Karachi. Email: mustaghis.bukc@bahria.edu.pk

Assistant Professor at the Department of Business Studies, BBSK, Bahria University Karachi. Email: mfaraz.bukc@bahria.edu.pk

Introduction

The escalating global environmental crisis poses severe risks to public health and economic stability. For example, the World Health Organization reports that 90% of pollution-related deaths occur in low- and middle-income countries. In Pakistan, rapid industrialization has intensified environmental degradation, making corporate sustainability efforts an urgent priority. Recognizing the environmental challenges facing humanity, the United Nations adopted Sustainable Development Goal (SDG) 13: Climate Action in 2015, to call for collective action to reduce environmental risk. In response to climate action and environmental protection, Green Human Resource Management (GHRM) has been identified as a key business strategy to reduce organizations' environmental footprints and promote a sustainability-focused workplace culture (Renwick et al., 2013).

Although GHRM has gained traction in practice, there is still debate about its economic implications. For instance, some research suggests that GHRM practices such as eco-friendly recruitment, training, and green incentives improve company image, innovation, and efficiency and ultimately enhance economic performance

(Masri & Jaaron, 2017; Sathyapriya et al., 2013). Conversely, some researchers claim that investments in environmental sustainability do not always produce a financial return, thus leaving a gap in the understanding of how organizations can effectively link GHRM and profitability (Yong et al., 2019). It is also important to note that although there is a wealth of literature available on GHRM in developed countries, there is little empirical research available from developing countries, including Pakistan, where environmental regulations and corporate sustainability commitments continue to evolve. Therefore, this study aims to address this gap by examining the relationship between GHRM and the economic performance of organizations in Pakistan and investigating whether Green Organizational Citizenship Behavior (GOCB) - employees' voluntary pro-environmental behaviors - will mediate this relationship.

GHRM represents an intersection point of environmental sustainability and human capital management. Opatha and Arulrajah (2014) describe GHRM as the implementation of HR policies that raise awareness of the environment and transform employees into "green employees" who engage in activities to promote sustainability within organizations. There are three primary components of GHRM, including: a) Green Recruitment: employing individuals with expertise and/or a commitment to sustainability; b) Green Training: educating employees on sustainable practices and environmental objectives; and c) Green Rewards: providing incentives for employees to demonstrate eco-friendly behavior. From a theoretical perspective, incorporating sustainability in HRM is expected to positively affect employee involvement, innovation, and operational efficiency (Wagner, 2013; Longoni et al., 2018). However, for organizations to integrate the "green" concept into their culture, they require strategic planning beyond ad hoc efforts. Anwar et al. (2020) recommend that sustainability-focused HRM must incorporate green performance evaluations, environmentally responsible operational procedures, and

systematic sharing of knowledge to realize long-term environmental and economic successes. In summary, GHRM can be seen as a method to achieve the Triple Bottom Line - economic, social, and environmental success - through people management (Jabbour et al., 2010; Ren & Jackson, 2020).

Advanced HR Technologies, Green Analytics, and Information Systems

Modern HRIS (Human Resources Information Systems) and "Green" HR Platforms will allow organizations to implement digital versions of all their HR Processes (e.g., using electronic contracts instead of paper contracts, digital pay slips instead of paper pay slips, etc.) and be able to measure environmental performance indicators for HR activities. For example, data-driven green HR analytics could analyze metrics such as: How much energy was saved because employees were working remotely? Or: what amount of waste was reduced because training was digitalized? This would give organizations evidence of the impact of GHRM and provide a framework for ongoing improvement. Using technology in the same way that organizations use it today to support other management functions supports the concept of business informatics, which emphasizes the application of information systems to improve the functionality of businesses and management practices (National Research University – Higher School of Economics, 2025).

Providing remote work options through the use of ICT infrastructure, which also provides flexibility to employees and at the same time reduces commuting carbon emissions. Also, technology-enabled HR practices put in by organizations can help them gain economic and environmental benefits (Walentek, 2020).

In brief, human resources technologies and green HR act as catalysts that drive GHRM results, which in turn see to it that sustainability principles are fully integrated into HRM and made to align with the organization's strategy.

If that happens, the questions arises, what do GHRM practices do to promote pro-environmental behaviors of employees? And to what degree do organizations see financial benefits from putting in place GHRM practices? Address at present is what is required as we see an increase in which stakeholders are pushing companies to adopt sustainable business practices (Hameed et al., 2020). While many firms have made the shift from traditional methods to environmental responsibility on a large scale, what that does for companies in a context like Pakistan's industrial sector is still very much a question. By looking at the case of Pakistan's Industrial Sector, which is seeing to deal with ever greater environmental issues from emissions to waste disposal, we present empirical research into whether or not Green HR strategies improve economic performance or, in fact, put a financial strain on businesses.

This Study reports three things. First, we look at which GHRM play out in terms of Economic gain, we study the role of Employees' Voluntary Green behaviors. This responds to the recent requirement to put micro-level behavioral results into strategic HRM research for sustainability (Tang et al., 2018). Also, we report that we took GHRM out of the Western settings into an emerging economy context, which to date is under studied, and we present how GHRM plays in different regulatory and cultural settings (Aftab et al., 2023). Also, we report on the economic value of sustainable HRM strategies, which we put forth as a business case for environmental responsibility in Pakistan's corporate sector. We aim to use these findings to guide policy makers and business leaders in the design of HR strategies that put environmental stewardship and economic growth together and in turn, bridge the gap between profitability and sustainability.

Literature review

Literature has been explored on the key concepts and variables of this research to see to what extent the scientific knowledge on the subjects have already been developed by the researchers of management sciences with reference to the influences of green human resource management on the economic performance of companies.

GHRM and Organizational Economic Performance

GHRM Refers to a Bundle of HR Practices and Policies Oriented Toward Environmental Sustainability. Examples of GHRM Include: Green Recruitment and Selection; Training and Development Programs that Focus on Environmental Issues; Performance Appraisal Programs that Measure Employees' Performance Based on Their Commitment to Sustainability; and Compensation Policies that Incorporate Environmental Criteria (Renwick et al., 2013; Tang et al., 2018). The Goals of GHRM Are to Develop Employees' Green Knowledge and Skills, Motivate Pro-Environmental Behavior, and Create an Organizational Culture Committed to Sustainability.

Prior Studies Have Linked GHRM to Improved Environmental Outcomes Such as Lower Waste and Emissions (Haddock-Millar et al., 2016; Zibarras & Coan, 2015). Furthermore, Prior Studies Have Identified the Implementation of GHRM as Key to Effective Sustainable Strategy Execution, as It Aligns the Workforce with the Organization's Environmental Goals (Shen et al., 2018; O'Donohue & Torugsa, 2016). By Integrating Environmental Criteria into HR Processes (e.g., Including Sustainability in Job Descriptions and Performance Indicators), Organizations Signal the Importance of Sustainability and Hold Employees Accountable for Environmental Performance (Shen et al., 2018; O'Donohue & Torugsa, 2016).

The GHRM may have additional economic implications. An organization's environmental responsibility could help improve productivity (via energy saving); lead to new product development and processes; enhance the organization's reputation; and strengthen stakeholder

relationships -- all of which could lead to greater financial performance. Research has shown that GHRM practices do improve firm performance. Ghouri et al. (2020) in Malaysia were able to demonstrate that GHRM significantly improves firm performance through better resource utilization. Aftab et al. (2023) in a developing country setting showed that GHRM is positively related to an organization's environmental performance and that this relationship was enhanced through "green innovation" and "green strategic planning." Similarly, Yang and Li (2023) demonstrated that GHRM has a significant influence on employees' green innovative behavior; green organizational commitment served as a mediator, and knowledge sharing served as a moderator, thereby enhancing the organization's sustainable performance outcomes.

More recently, Jackson et al. (2022) in Business Strategy and the Environment reviewed the research and concluded that organizations that align their HRM strategies with their environmental strategies will experience competitive advantages and greater financial performance. However, there are limitations to the GHRM--performance linkage. Yong et al. (2019) stated that without proper alignment, environmental initiatives may generate costs or distract from other organizational functions before generating returns on investment. Therefore, there is a need to investigate how GHRM generates economic benefits, and under what conditions. Another area of research that has emphasized the role of technology and data analytics tools in enabling GHRM and linking GHRM to performance and GOCB. Many companies are now utilizing data systems and digital tools to implement GHRM programs. For example, HRM cloud-based systems enable companies to collect and analyze data regarding employees' environmental behaviors. This enables them to identify which GHRM practices have the greatest effect on performance. Lorek (2019) noted that when IT systems are appropriately aligned, they can assist in the monitoring and controlling of organizational resources in real-time (e.g., energy management systems, carbon footprint tracking). Such systems can serve as decision support systems for

sustainability initiatives. Organizations may also put in place these systems with HRM, which, for instance, may include tracking each department's eco initiatives or employees' green ideas via an intranet portal, thus providing a base to measure the association between GHRM and the organization's performance and cost savings.

Also, technology platforms play a great role in the exchange of information related to sustainability. Internal social networks or green idea repositories allow employees to put forth and learn from each other on environmental practices -- which in turn may secondarily improve GOCB by the fact that we have an informed and engaged workforce. Walentek (2021) reported that management and control of teleworkers is a challenge in terms of a lack of face-to-face interaction with staff, which in turn puts forward the need for digital communication and monitoring tools to maintain company culture and expectations as employees work remotely. Digital tools may be used to support GHRM goals (for instance, reminding remote workers to save energy or to recognize their green input via an online platform). In the end use of data analysis and technology in HRM not only improves the implementation of green HRM practices but also increases their overall positive effect on organizational performance and employee green behavior. This point of view on GHRM is part of the bigger Business Informatics trend of using information systems to add value -- which means companies with complex HRIS will be able to better see the relationship between GHRM, GOCB, and performance.

Technology-enabled HR and green IS indicate that the magnitude of the GHRM's effects may be dependent upon the digital infrastructure that enables employees to take action, which motivates investigating behavioral pathways such as GOCB.

GHRM and Green Organizational Citizenship Behavior (GOCB)

Green Organizational Citizenship Behavior (GOCB) encompasses employees' discretionary, extra-role behaviors that contribute to environmental sustainability within the organization. Examples of GOCB include an employee volunteering to recycle office waste; suggesting process improvements that are eco-friendly; helping colleagues develop green practices -- none of which are formally expected by employees but are beneficial to the organization's environmental performance (Boiral & Paillé, 2012). As such, GOCB is similar to general OCB, but directed at environmental objectives (often referred to as "OCB for the environment" or OCBE). GOCB is valuable because it is an informal grassroots and self-motivated way for employees to contribute to an organization's sustainability efforts that can supplement an organization's formal environmental management systems.

Hooi, Liu, and Lin (2021) argued that GHRM is hypothesized to contribute to GOCB by influencing employees' attitudes, skills, and organizational culture. GHRM practices can enhance employees' ability (through green training), motivation (through incentives and performance evaluation tied to environmental goals), and opportunity (through empowerment and participation in sustainability initiatives) to perform green acts. When HRM consistently focuses on sustainability (e.g., hiring individuals who value the environment and reward eco-friendly initiatives), employees are more likely to internalize those values and perform extra-role behaviors to support the environment (Daily et al., 2009).

Although the idea that GHRM and GOCB are related was supported empirically, Hooi et al. (2022) demonstrated that there is a positive correlation between GHRM and GOCB at the workplace, and particularly, in organizations with robust green culture. Additionally, the findings from an international study by Pham et al. (2021) demonstrate that green training and empowering practices lead to an increase of eco-helping and

eco-initiative behaviors amongst employees, as well as a stronger sense of commitment towards environmental goals.

In addition, when employees perceive that their employer is serious about supporting their contributions toward sustainability via GHRM practices, then employees will feel obligated to respond in kind with positive behaviors (Social Exchange Theory). If employees believe that their organization truly cares about the environment and provides employees with the tools to contribute (through, for instance, resources to support green projects or recognition of volunteer efforts), then employees are likely to reciprocate with positive behaviors such as extra-role green behaviors (Chaudhary, 2020). Conversely, if green values are not included within HRM, then pro-environmental behaviors may occur randomly or be limited to those employees who are enthusiastic about the cause.

While theory suggests that GHRM has a relationship with GOCB, little has been done to explore the relationship between GHRM and GOCB, specifically in developing economies. As Liu et al. (2020) illustrate, individual characteristics (environmental awareness), organizational aspects (culture), and leadership styles all contribute to employees' propensity to engage in GOCB. To investigate whether increased green HRM practices are a viable method to foster voluntary sustainable behaviors among employees in an emerging economy.

GOCB and Sustainable Economic Performance

Also to the extent that employees' green OCBs play a role in environmental conservation, it is likely that they also play a role in organizational performance. Employees who put forth Green OCB may help their companies improve resource efficiency (for instance, in waste reduction and energy conservation), which in turn may lower costs. Also, in the case of Green OCB, employees may act as a catalyst for innovation and put forth ideas

related to greener process improvements that may, in turn, increase productivity or open up new business opportunities (for instance, in green products or technology). Green OCB also plays a role in a team-based work environment, which sees continuous improvement of sustainability issues, which in the end better the organization's performance as a whole. Also, when employees are into what may be termed as going above and beyond in terms of sustainability issues, the organization may see economic benefits as a secondary result (Wulandaru, Robani, Putri, 2024).

Many studies that we have seen in Business Strategy and the Environment report that green OCB is key to turning environmental strategies into performance indicators. We see in the recent research from the hospitality field that employees' OCB for the environment, which includes things like cost reduction and better customer service which in turn presents itself as a competitive edge for the organization (Zhao et al., 2023). Also, a study by Katz et al. (2022) did a meta-analysis which reports that it is a positive correlation between employee engagement in environmental practices and performance and that which they put forth is a element of a good sustainable business strategy.

Several studies published in Business Strategy and the Environment, have indicated that green OCB is critical to transforming environmental strategies into performance metrics, for example, recent research conducted in the hospitality industry found that employees' OCBE (Organizational Citizenship Behaviors for the Environment) resulted in cost reductions and enhanced customer service quality, resulting in the organization's competitive advantage (Zhao et al., 2023). A meta-analysis conducted by Katz et al. (2022) found that employee participation in environmentally friendly activities results in positive correlations with performance indicators and that creating such discretionary behaviors can be a part of a successful sustainable business strategy.

If GOCB does indeed contribute to organizational performance, it could serve as the missing link between GHRM and economic outcomes. GHRM might boost

financial performance indirectly by first encouraging employees to engage in green OCB, which in turn improves efficiency and reputation, ultimately reflected in the bottom line (Renwick et al., 2016). This logic yields a mediation hypothesis. Prior work provides some support: Renwick et al. (2016) conceptualized that GOCB can act as a mediating mechanism through which HRM practices impact environmental and financial performance. More recently, Khan and Muktar (2024) found that empowering employees (through GHRM) led to higher sustainable performance, and they identified employee-driven environmental initiatives as a critical channel for this effect.

Notably, the GHRM may have both a direct and an indirect (via GOCB) effect on performance. In other words, even as GOCB carries part of GHRM's influence to outcomes, GHRM might still influence performance through other pathways (e.g. direct efficiency gains from formal policies). We test for partial vs. full mediation in our analysis.

Finally, given mixed findings in prior literature, we also test the direct effect of GHRM on economic performance in our context. Companies that implement GHRM may reduce costs (through conservation and waste reduction), avoid regulatory penalties, improve their market image, and innovate in ways that drive financial gains (Barbier & Burgess, 2017; Jabbour et al., 2010). Hence this study is conceptualized in figure 1.

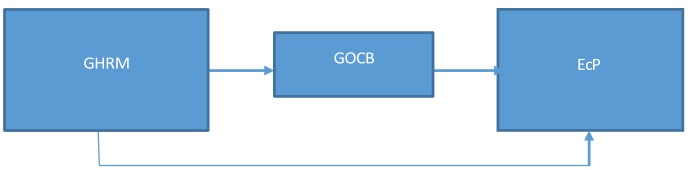


Figure 1. Conceptual Model

GHRM and Green Organizational Citizenship Behavior (GOCB)

The findings of the study conducted by Boira et al., (2015) reported a significant association between green motivation practices (green efficiency and green rewards) and Green Organizational Citizenship Behaviour (GOCB). In comparison, de Araujo (2014) showed a significant connection between the performance assessment and the GOCB. Evaluation programs are widely used for monitoring wages, recognizing the abilities and shortcomings of workers, and providing feedback on performance to increase organizational efficiency (Arshad et al., 2020).

Shaban (2019) highlighted that practicing green training and development is not costly for organizations; it is an investment for long-term survival. He further stated that organizations should be resilient in adopting green practices as it is an effort ultimately leading to the best environmental performance of the organization by reducing the negative impacts and improving its positive impacts. The training involves how to recycle and conserve waste (Krithika, et. al. 2019). Amongst the green practices are Green Printing, Green Manufacturing, and Teleconferencing, Virtual Interviews, Recycling, Online Training, Energy-Efficient Office Spaces, Green Payroll, and E-Filing. Shaban (2019) also opined that the training should include all activities such as workshops, masterclasses, sessions, and experimental classes. It should also be able to equip employees as future managers and leaders. The training also allows the employee to be more engaged in problem-solving related to the environment (Zoogah, 2018).

Ghouri et al. (2020) stated that the most critical component of green performance management (GPM) for managers and staff is performance evaluation, which can have an impact on the process and efficacy of corresponding rewards and benefits. Clear environmental performance indicators are also essential for performance management systems. Evaluating the green results of managers underlines their position in sustainable

development, and may cause them to be more accountable for environmental management (EM) outcomes. It is important to establish green consequences and encourage managers to be responsible for the success of the environmental management system. Disbenefit is a derogatory measure to resolve the green success of participants who do not cooperate with the environmental management indicators or who do not align with the green objectives (Renwick et al., 2013). Appropriately using these negative measures can motivate workers to behave more effectively and to pursue green initiatives in their future jobs. Hence, we hypothesize as follows:

H1: Green Human Resource Management has a significant impact on Green Organizational Citizenship behavior

Green Organizational Citizenship Behaviour Mediates GHRM and Sustainable Performance

The results of the study conducted by Ragmoun and Alwehabie (2020) established that GHRM contributes to environmental success. OCBE has been influenced by GHRM practices, whereas Renwick et al. (2016) indicated that OCBE contributes to environmental efficiency. It has also been proposed as a method of translating GHRM practices for the improvement of environmental performance. It includes a range of ecological practices, including the disposal of occupational waste, recycling, carbon saving, and encouraging workers to pursue more environmentally responsible behaviors, which ultimately culminate in a better economic performance (Chun, 2009). Hence, we hypothesized as below:

H2: Green Organizational Citizenship Behaviour mediates the relationship between Green Human Resource Management and Organizational Economic Performance

GHRM and Economic Performance

According to Arulrajah and Opatha (2016), environmental requirements can also be used in recruiting messages, such as green labelling, pro-environmental image, green job requirements, integration of green awareness and abilities in the job description of all organizational job roles. The findings of the study conducted by Abiwu and Nunoo (2020) revealed that the incorporation of GHRM policies and practices may lead to the general development of the workforce by growing the demand for green employees. In addition, GHRM can promote discussion on the significance of adopting GHRM practices and policies because of their beneficial impacts on overall organizational greening (Aboramadan, 2020). By recruiting and maintaining potential employees with clear pro-environmental views, GHRM can also promote the enhancement of an environmentally friendly corporate reputation by strengthening the sustainable development strategy, which would lead even more to attract new staff with strong pro-environmental opinions (Abiwu & Nunoo, 2020). So what? Beyond indirect benefits through citizenship, organizations may realize immediate economic advantages from GHRM itself, motivating H3 on the direct effect.

Barbier and Burgess (2017) figured out that the interdependency of the goals of environmental, social and economic processes contributes to the achievement of the end goal of sustainable growth under the system approach. It concluded that many environmental management systems have been implemented by organizations to improve economic, organizational, social and ecological sustainability. In various areas that apply the green principle, HRM plays a significant role in implementing and maintaining a green culture among the organization's members. In general, GHRM is associated

with the environmental implications of managing people and addressing environmental issues relevant to work, aiming for better economic performance (Jabbour, Santos & Nagano, 2010; Opatha & Arulrajah, 2014). Hence, we hypothesized as follows:

H3: Green human resource management has a significant impact on the organizational economic performance

Research Methodology

This study is positivist in nature and adopts a deductive approach, as Crossan (2003) recommends this approach where the research has a set of hypotheses to be confirmed or rejected. Further, this is based on the Mono Method Quantitative (MMQ), and a cross-sectional data collection method has been used as the data required from the research participants is primary and can be collected at once from all of the research participants of this study. The targeted population of the present study is the HR personnel serving in 38 multinational firms operating in Pakistan. One of the basic conditions for the inclusion of such multinational firms is their green organizational management practices. By applying purposive sampling, the sample size of this research from 38 multinational firms, which have green organizational management practices, is 150. The gathered data have been compiled and analyzed statistically by employing the appropriate statistical tests in both ways; descriptive statistics and inferential analysis to test the formulation of hypothesized statements. Based on the objectives and hypothesis of this study, regression and correlation statistics are run to see the impact of GHRM practices on Organizational citizenship behavior and economic performance of organizations. Structural equation modeling through Smart PLS 4.0 is implied for data analysis.

Results

Table 1: Descriptive Statistics

	Mean	St.Dev	Skewness	Kurtosis	Cronbach Alpha
ECP	0.252	0.119	-1.951	2.987	0.732
GHRM	0.417	0.097	1.389	1.982	0.687
COCB	0.559	0.106	1.566	2.319	0.672

The table 1 provides statistical measures for three constructs: Environmental Corporate Practices (ECP), Green Human Resource Management (GHRM), and Corporate Citizenship Behavior (COCB). The mean values show the average scores, with COCB having the highest mean (0.559), followed by GHRM (0.417) and ECP (0.252). The standard deviations indicate the variability around these means, with ECP having the highest variability (0.119) and GHRM the lowest (0.097). Skewness values show the asymmetry of the distribution of each construct, while kurtosis values provide insights into the peakness of the distributions. . Lastly, Cronbach's Alpha values assess the internal consistency reliability of the scales used for these constructs. All values are above the acceptable threshold of 0.6, with ECP having the highest reliability (0.732), followed by GHRM (0.687), and COCB (0.672), indicating that the scales used are sufficiently reliable for the constructs measured.

Table 2: Convergent Validity

	Mean	St.Dev	Composite Reliability	Avg. Var
ECP	0.252	0.119	0.768	0.425
GHRM	0.417	0.097	0.749	0.488
CoCB	0.559	0.106	0.722	0.351

Table 2 shows the reliabilities and descriptives of three constructs: Green Human Resource Management (GHRM); Environmental Corporate Practices (ECP); and Corporate Citizenship Behaviour (CoCB). The mean scores indicate the averages for each construct; CoCB had the largest mean (Mean = 0.559), followed by GHRM (Mean = 0.417) and ECP (Mean = 0.252). Thus, based on the average ratings given by the participants, the

participants rated CoCB as being the most important and ECP the least important. Standard deviation scores show how much variability there was in participants' responses from the mean score. Standard deviation scores indicated the greatest variability in ECP (SD = 0.119) and the least variability in GHRM (SD = 0.097). Thus, participants tended to be more consistent in their response to items in the GHRM scale than to those in the ECP scale. Composite reliability scores assess the degree of internal consistency among the individual item scales used to form a particular construct.

ECP had the highest composite reliability (CR = 0.768) and CoCB had the smallest composite reliability (CR = 0.722) with GHRM falling between them (CR = 0.749). All of these values are greater than 0.70, which is the minimum required value to demonstrate acceptable internal consistency reliability. Average Variance Extracted (AVE) values are indicators of the proportion of total variance that is attributable to the common factor among the indicators of a construct. Based on this criterion, the highest AVE values of the three constructs occurred for GHRM (AVE = .488), followed by ECP (AVE = .425), and then CoCB (AVE = .351). Based on the APA standards, these results suggest that the measurement model for each of the three constructs demonstrated acceptable levels of both reliability and validity.

Table 3: Discriminant Validity Heterotrait-Monotrait (HTMT)

	Discriminant Validity HTMT	
ECP		
GHRM	0.587	
GOCB	0.825	0.572

Table 3 presents the Heterotrait-Monotrait (HTMT) ratios of correlation for the three constructs: Environmental Corporate Practices (ECP); Green Human Resource Management (GHRM); and Corporate Citizenship Behavior (CoCB). The results indicate that the measures for these three constructs have

distinctiveness to them; they capture different dimensions and do not overlap or contain redundant information.

There is a clearly established distinction between ECP and GHRM at an HTMT ratio of 0.587 since it is below the widely used threshold of 0.85. While the HTMT ratio for ECP and CoCB was 0.825, which is just above the threshold, there is still evidence that this pair of constructs is also reasonably distinct from one another. Likewise, the HTMT ratio for GHRM and CoCB at 0.572, again establishes a reasonable amount of distinction between the constructs of GHRM and CoCB.

In total, the HTMT ratios presented in Table 3 provide support for the notion that the constructs of ECP, GHRM and CoCB have sufficient distinctiveness to justify their use as separate constructs, as all ratios are less than the threshold of 0.85, thus satisfying the thresholds proposed by Henseler, Ringle and Sarstedt (2015). Therefore, each construct captures a distinct aspect of the broader theoretical framework examined.

Table 4: Discriminant Validity (Fornell-Larcker Criterion)

	Discriminant Validity Fornell-Larcker Criterion		
ECP	0.652		
GHRM	0.485	0.698	
GOCB	0.664	0.417	0.593

The information provided in the Table 4 pertains to the Fornell-Larcker criterion values that are utilized for evaluating discriminant validity among three constructs: Environmental Corporate Practices (ECP), Green Human Resource Management (GHRM), and Corporate Citizenship Behavior (CoCB). To confirm discriminant validity, it is necessary for the square root of the average variance extracted (AVE) for each construct to be higher than its highest correlation with any other construct.

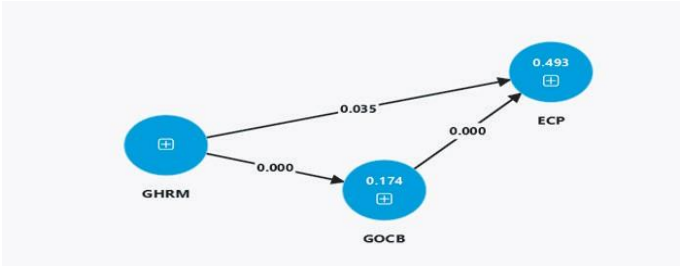
The diagonal values in the table represent the square roots of the AVE for each construct: ECP (0.652), GHRM (0.698), and CoCB (0.593). These values are then compared against the off-diagonal correlations between

constructs. The correlation between ECP and GHRM is 0.485, between ECP and CoCB is 0.664, and between GHRM and CoCB is 0.417.

According to the Fornell-Larcker criterion, discriminant validity is established when the AVE square root (diagonal values) for each construct surpasses its correlations with other constructs (off-diagonal values). Specifically, for ECP, the AVE square root (0.652) is higher than its correlations with GHRM (0.485) and CoCB (0.664). In the case of GHRM, its AVE square root (0.698) exceeds its correlation with CoCB (0.417). However, the AVE square root for CoCB (0.593) is marginally lower than its correlation with ECP (0.664), suggesting a potential issue with the discriminant validity between these two constructs

The Fornell-Larcker criterion reveals that ECP and GHRM demonstrate sufficient discriminant validity, while there may be some overlap between ECP and CoCB, which warrants further examination. This outcome implies that, although the constructs are generally distinct, there is a necessity for enhancing the measurement of ECP and CoCB to fully establish their discriminant validity.

Figure 2: Measurement Model

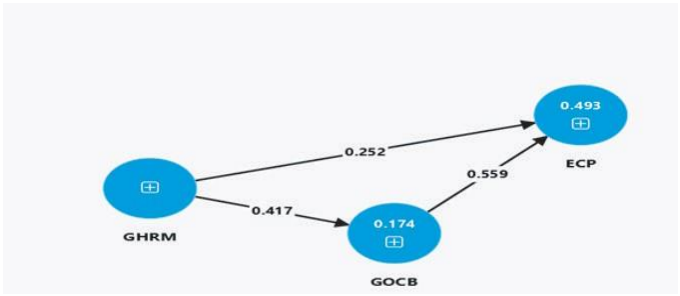


The relationship among the concepts of Green Human Resource Management (GHRM) & Corporate Citizenship Behavior (CoCB) and Environmental Corporate Practices (ECP). The path coefficients that are shown in the arrows represent the magnitude and significance of each relationship as well as the direction of each

relationship. There is a very strong and statistically significant positive relationship between GHRM and ECP. This is evidenced by a path coefficient of .493, (p = .000) between GHRM and ECP. The substantial positive effect of Green HRM practices for implementing ECP within an organization are clearly evident here. A positive but weakly statistically significant relationship was found between GHRM and CoCB. This relationship is represented by a path coefficient of .174 (p = .000) between GHRM and CoCB. The relationship between GHRM and CoCB is weak when compared to the relationship between GHRM and ECP; however, it illustrates that GHRM contributes positively to the development of Corporate Citizenship Behavior. The path coefficient from CoCB to ECP is .035 (p = .000). It is not statistically significant and therefore indicates no direct positive or negative influence of CoCB on ECP.

In summary, based on the results of the measurement model, Green Human Resource Management appears to be a key driver for developing both Environmental Corporate Practices and Corporate Citizenship Behavior. In addition, the measurement model supports that there is no direct influence of Corporate Citizenship Behavior on Environmental Corporate Practices and, consequently, suggests that other intervening variables could exist in this relationship. These findings support the importance of GHRM as a key factor to develop responsible and sustainable corporate behavior.

Figure 3: Structural Model



Smart PLS Structural Model: Relationships Between Green Human Resource Management (GHRM) and Corporate Citizenship Behavior (CoCB) and

Environmental Corporate Practices (ECP) Smart PLS Structural Model provides an illustration of how Corporate Citizenship Behavior (CoCB) and Environmental Corporate Practices (ECP) are related to each other through Green Human Resource Management (GHRM). Smart PLS Structural Model uses Path Coefficients to represent the strength and significance of those relationships. Path Coefficient from GHRM to ECP = .493; Positive and Strong Relationship; Organizations that have high levels of Green Human Resource Management Practices are more likely to exhibit higher levels of Environmental Corporate Practices.

Path Coefficient from GHRM to CoCB = .174; Positive but Weak Relationship; While GHRM has a positive influence on Corporate Citizenship Behavior its influence is much less than it has on Environmental Practices. Path Coefficient from CoCB to ECP = .559; Significant Positive Relationship; Indicates that Corporate Citizenship Behaviors have a very significant impact on the adoption and implementation of Environmental Corporate Practices by organizations. Also, the Smart PLS Structural Model demonstrates a Direct Path from GHRM to CoCB with a Coefficient of .417. Demonstrates a Strong Positive Relationship between Green Human Resource Management and Corporate Citizenship Behaviors. The Smart PLS Structural Model clearly indicates that Green Human Resource Management has a Significant Influence on both Corporate Citizenship Behavior and Environmental Corporate Practices. Additionally, Corporate Citizenship Behavior has a Significant Influence on Environmental Corporate Practices. Together, these results clearly demonstrate the Important Role that Green Human Resource Management can have in Encouraging Responsible Corporate Behaviors and Environmental Sustainability within Organizations.

Table 5: Results of the Relationships

	Original sample	Sample Mean	St.Dev	T-Statistics	P Values
GHRM → ECP	0.252	0.258	0.119	2.114	0.035
GHRM → GOCB	0.417	0.451	0.097	5.285	0.000
GHRM →GOCB → ECP	0.233	0.257	0.068	3.046	0.001

The data shown in the Table illustrates the findings from a Structural Equation Modeling (SEM) Analysis, illustrating the relationships between Green Human Resource Management (GHRM), Corporate Citizenship Behavior (CoCB), and Environmental Corporate Practices (ECP). The Table presents sample estimates, sample means, sample standard deviations, T-statistics, and p-values for all paths in the Model.

The path representing the relationship between GHRM and ECP was found to have a sample estimate = 0.252, a sample mean = 0.258, and a sample standard deviation = 0.119. Additionally, the T-statistic = 2.114 and the p-value = 0.035, which indicates that the relationship between these two variables is statistically significant at the .05 alpha level. Therefore, GHRM appears to have a positive and significant effect on ECP; i.e., organizations employing effective GHRM practices tend to adopt greater environmental corporate practices.

The path between GHRM and CoCB had a sample estimate = 0.417, a sample mean = 0.451, and a sample standard deviation = 0.097. Moreover, the T-statistic for this path was found to be 5.285 and the p-value was found to be 0.000, which suggests that this relationship is very strong. Thus, GHRM was found to have a significant effect on CoCB, implying that organizations implementing green HR practices will be more likely to exhibit behaviors that reflect their commitment to corporate citizenship.

The indirect effect of GHRM on ECP through CoCB (i.e., GHRM → CoCB → ECP) had a sample estimate = 0.233, a sample mean = 0.257, and a sample standard deviation = 0.068. The T-statistic for the indirect path was 3.046 and the p-value was 0.001, indicating that the mediation effect of CoCB on the relationship between GHRM and ECP is statistically significant. Therefore, it can be inferred that CoCB plays a partial mediating role in the

relationship between GHRM and ECP, indicating that a portion of the effect of GHRM on ECP is attributable to the effect of GHRM on CoCB.

Therefore, the overall conclusions drawn from this SEM analysis are that there is a direct positive effect of GHRM on both CoCB and ECP. Furthermore, the results suggest that the effects of GHRM on ECP are partially mediated by CoCB. Overall, the findings emphasize the critical role of green HRM practices in promoting socially responsible organizational behavior and environmentally sustainable organizational practices, and the potential mediating role of corporate citizenship in facilitating enhanced environmental practices among organizations.

Discussion

Theoretical Implications

The empirical evidence provided in this study offers insights into how Green Human Resource Management (GHRM) practices generate sustainable financial returns and through which mechanisms—Green Organizational Citizenship Behavior (GOCB)—this occurs. We establish that GHRM is a powerful determinant of GOCB and subsequently organizational performance. The current study represents a significant addition to GHRM literature as it addresses the 'black box' of the relationship between GHRM and firm-level outcomes. Ren et al. (2021) and Khan & Muktar (2024) called for additional GHRM models that incorporate employee behaviors as mediation variables. As such, we demonstrate that a large proportion of the GHRM influence on performance can be attributed to employees' discretionary/extra-role behaviors. According to the Ability–Motivation–Opportunity framework, GHRM enhances employees' ability and motivation for environmental engagement, and this is exhibited as GOCB and ultimately leads to enhanced organizational performance, as suggested by Hooi et al. (2022).

Social Exchange Theory is reinforced by our study findings regarding the reciprocal nature of employee behaviors towards their employer, given they perceive an

organization 'going green' in terms of managing human resources. Employees will reciprocate positive discretionary efforts if they perceive an organization's support for environmental issues. The organization's "green" policies send signals of support to the employees who perceive them and then feel obligated to assist the organization in achieving its environmental objectives. Employees' discretionary behaviors, including conserving energy, reducing waste, and implementing innovative eco-efficient practices, create non-monetary value and lead to increased operational efficiencies, potentially generating financial gains. The mutual commitment to environmental values, per social exchange theory, increases the strength of the employee-employer relationship and therefore positively affects employee citizenship behaviors and performance (Blau, 1964; Islam et al., 2021). Therefore, this study expands previous studies that have typically only explored the direct effects of GHRM on performance, providing empirical evidence of the exchange dynamic within the green HR context.

Moreover, the establishment of a direct GHRM → performance link (H3) supports the increasing body of research suggesting that sustainability can be a source of financial returns. Our results support the growing consensus that "doing good" does not preclude "doing well." Our data from developing economy firms, many of whom may be concerned about the cost of adopting green initiatives, indicate that investment in GHRM generates financial returns. Our study provides empirical support for the resource-based view position that GHRM is a source of competitive advantage due to its development of a unique human capital pool (green-skilled employees with engagement) that is valuable, rare, difficult to imitate, and leads to superior organizational performance (Barney, 1991; Pham et al., 2019). Furthermore, our study supports the concept of Sustainable HRM, which posits that HRM systems that focus on sustainability are key contributors to long-term organizational viability (Ehnert et al., 2014). Thus, our study provides empirical support for sustainable HRM by demonstrating a positive relationship with performance

in the short-to-medium term.

Our study provides specific enrichment to the literature on emerging economies. The majority of existing research on GHRM and associated outcomes has been conducted in developed countries or China. Our study demonstrates that the theoretical relationships exist in South Asia cultural and business environments. Importantly, our study was able to demonstrate that firms in Pakistan, a country with low regulatory pressures for environmental compliance compared to those of Western countries, were able to reap performance benefits from proactive GHRM. Thus, while regulatory pressures for environmental compliance may not be present in emerging economies, our study shows that organizations with internal strategic choices to proactively implement GHRM can achieve performance benefits — a valuable lesson for researchers and practitioners in emerging economies. Furthermore, our study suggests that the motivations for GHRM in emerging economies may be influenced more by potential efficiency gains and international stakeholder expectations (e.g., multinational companies requiring adherence to global green standards) rather than domestic regulation. Overall, our study supports the generalizability of GHRM theory and answers calls for more research in a variety of economic settings (Yusliza et al., 2020; Aftab et al., 2023).

Another theoretical contribution of our study lies in connecting the micro- and macro-domains. Our study combined organizational behavior (OCB) with strategic HRM and performance. Thus, we addressed the call for consideration of multilevel influences in sustainable HRM research. We demonstrated that concepts typically studied at the individual level (OCB) can significantly impact organizational-level outcomes and should therefore be incorporated into strategic models. Our study provides a more complete understanding of how green initiatives penetrate an organization by combining OB and SHRM perspectives.

Lastly, our study provides insights into the content of GOCB in organizations. The significant influence of GOCB on performance highlights the significance of the

"hidden" actions of employees can contribute to tangible organizational improvements. Our study provides the basis for further theoretical work on GOCB — for example, investigating the dimensionality of GOCB (helping, initiative, civic virtue for the environment) and the differential effects of each dimension on outcomes.

This article has raised interesting questions about the potential boundary conditions of GOCB: Under what type(s) of organizational climates/leadership styles will GOCB be optimized? Although our study was focused on mediation rather than moderation, the authors would encourage future research to explore how leadership (i.e., green transformational leadership) and/or organizational culture influence the degree to which the GHRM → GOCB → performance chain exists.

Practical Implications

The findings of this research have important implications for managers and practitioners in all types of organizations. The most obvious implication is that while there are many reasons to invest in GHRM (for example, environmental responsibility), one reason is that it also provides businesses with important competitive advantages. As such, managers in HR and Sustainability roles can use the findings of this research to demonstrate the practical value of "going green" and to advocate for the implementation of more robust GHRM practices (such as recruiting employees who are passionate about the environment; training employees in how to operate in a more sustainable manner; and recognizing and rewarding employee's contributions to sustainability) that will improve their organization's ability to compete financially and in the marketplace.

Further, the findings of this research indicate that when employees perceive that their organization is committed to operating in a more sustainable manner, and that they are empowered to participate in those activities, they are more likely to go the extra mile to assist the organization

in achieving greater operational efficiency and developing innovative solutions to sustainability problems. These two outcomes provide significant competitive advantages for organizations and can result in improved profitability and competitive position.

Therefore, encouraging employees to engage in Green OCB is a critical component of any sustainability initiative. Organizations cannot require employees to exhibit voluntary behaviors, however, they can establish an organizational climate that supports and fosters such behaviors.

Recommendations

To achieve this objective, the authors recommend that organizations implement the following:

(1) Embed environmental values within the organizational culture. Establishing environmental values within an organization's culture requires that the organization's top management communicate their commitment to environmental sustainability and lead by example. Additionally, the organization's mission statement and daily routines should incorporate environmental sustainability as a core aspect of the organization's identity. Employees who believe that environmental sustainability is integral to "the way we do business around here," are more likely to adopt spontaneous green behaviors.

(2) Empower and involve employees in sustainability initiatives. Provide employees with opportunities to contribute to and act on their ideas related to sustainability (e.g., green suggestion programs or cross-functional green teams). When employees are given the autonomy to make decisions and act independently in regards to sustainability issues, Green OCB is likely to flourish. Consistent with other research (Khan & Muktar, 2024; Zhao et al., 2023), our study indicates that empowering employees and involving them in sustainability initiatives is critical to stimulating OCBE.

(3) Recognize and reward extra-role green behaviors. While OCB by definition is not expected to receive formal rewards, management acknowledgement (e.g., public recognition in company communications, green

champion awards, etc.) can reinforce and encourage employees' engagement in GOCB. Some organizations have developed programs to recognize and reward employees for their participation in green initiatives (e.g., Green Employee of the Month programs, bonuses based on team environmental performance) (Odhiambo et al., 2023). Our study's results as well as others' (for instance Odhiambo et al., 2023) report that which which puts in place recognition and reward programs can in fact increase employees' engagement in GOCB.

From a human resources point of view, we should see to it that we have in place training programs for employees which address technical skills related to running environmental programs as well as the value of what they and we all do in terms of our sustainability goals. We put into our employees the what they need to know and be able to do in terms of recycling, conservation of energy, and improving processes which in turn reduces environmental impact which in turn builds up their confidence in their role at GOCB (Shaban, 2019).

Performance in which we include sustainability related goals or KPIs is that employees play a role in sustainability within the organization and we have that employees do in fact respond to such systems.

From a business point of view which is the perspective this study takes we see that business leaders and in turn strategy makers should look at GHRM as a investment in long term performance. Also in emerging markets which may have limited resources our which are what organizations have at their disposal there is still the fact that GHRM can bring about efficiencies and improvements which in turn will see to it that the costs related to such programs are offset. Also we note that multi national firms which play in the emerging markets are growing to be very much under the global partners' and also customers' microscopes as far as their sustainability report goes; hence having solid GHRM in place can greatly improve a company's image and open up new business opportunities (for instance becoming a go to supplier for green conscious clients). GHRM is a pillar of which a company may build a sustainable business strategy that at the same time benefits the

environment and the economy.

Government in the past has had a role in which they supported this study's results. While we look at what large companies are doing we also see that which which of our research is applied in other industries and across the world may see great macroeconomic results for example green industries and we may see economic growth from increased efficiency. Also government can play a role in seeing that which of our research is put into practice through the creation of awards, guidelines and also including GHRM into corporate sustainability indexes.

Conclusion

In this study we present empirical proof which supports that GHRM improves organizational economic performance and we report that which also by way of improving GOCB among staff. Also we looked at data from an emerging market which shows that companies which have put environmental sustainability into their HR strategies see better financial results and that we also found that employees' green behaviors play a key role as a mediator in the relationship between GHRM and financial performance.

These results present to us that we have a greater grasp of the theory which underpins sustainable performance we see how what may be at a very intangible level in terms of employee action which is a result of green human resource practices may in fact produce tangible economic results.

For the business community which is what we look at we have research which reports that going green in the HR function is a smart business play. Instead of seeing environmental programs as a cost or a public relations ploy, companies should see the performance benefits of a green and engaged work force. By creating a culture which allows for the growth of what we may term green citizenship we see that firms not only play a role in global sustainability but also in driving innovation, efficiency, and competitiveness from within. In an age where sustainability is a key to business success our study puts forth the case of the HRD's role as a catalyst for the alignment of people, planet and profit.

References

Abiwu, K., & Nunoo, F. K. (2020). Incorporation of Green HRM policies and practices: Effects on workforce development and corporate reputation. Journal of Sustainable Management Studies, 12(3), 145-162.

Aboramadan, M. (2020). Green HRM practices and their impact on organizational greening [Doctoral dissertation or article]. Institution or Journal.

Aftab, J., Abid, N., & Cucari, N. (2023). Green human resource management and sustainable performance: Evidence from a developing country. Sustainability, 15(2), 1225. https://doi.org/10.3390/su15021225

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. https://doi.org/10.1016/j.jclepro.2020.120401

Barbier, E. B., & Burgess, J. C. (2017). The sustainable development goals and the systems approach to sustainability. Economics: The Open-Access, Open-Assessment E-Journal, 11(2017-28), 1-23. https://doi.org/10.5018/economics-ejournal.ja.2017-28

Blau, P. M. (1964). Exchange and power in social life. Wiley

Boira, S., Alarcón, V., & Escartín, J. (2015). Green motivation practices and organizational citizenship behaviour for the environment. Management Decision, 53(5), 1171-1185. https://doi.org/10.1108/MD-01-2014-0004

Boiral, O., & Paillé, P. (2012). Organizational citizenship behaviour for the environment: Measurement and validation. Journal of Business Ethics, 109(4), 431–445. https://doi.org/10.1007/s10551-011-1138-9

Chaudhary, R. (2020). Green human resource management and employee green behavior: An empirical analysis. Corporate Social Responsibility and Environmental Management, 27(2), 630–641. https://doi.org/10.1002/csr.1827

Chun, J. S. (2009). Organizational citizenship behaviour and environmental efficiency: Linking green HRM and economic performance. Journal of Business Ethics, 88(2), 227-240.

Daily, B. F., Bishop, J. W., & Govindarajulu, N. (2009). A conceptual model for organizational citizenship behavior directed toward the environment. Business & Society, 48(2), 243–256. https://doi.org/10.1177/0007650308315439

Ghouri, A. M., Mani, V., Khan, M. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource management practices: An empirical evidence from Malaysian manufacturing industry. International Journal of Productivity and Performance Management, 69(8), 1585–1607. https://doi.org/10.1108/IJPPM-03-2019-0124

Ghouri, A. M., Mani, V., Khan, M. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource management practices: Empirical evidence from Malaysian manufacturing industry. International Journal of Productivity and Performance Management, 69(8), 1585-1607. https://doi.org/10.1108/IJPPM-03-2019-0124

Haddock-Millar, J., Sanyal, C., & Müller-Camen, M. (2016). Green human resource management: A comparative qualitative case study of a United States multinational corporation. International Journal of Human Resource Management, 27(2), 192–211. https://doi.org/10.1080/09585192.2015.1052087

Hameed, Z., Khan, I. U., Islam, T., Sheikh, Z., & Naeem, R. M. (2020). Do green HRM practices influence

employees' environmental performance? International Journal of Manpower, 41(7), 1061–1079. https://doi.org/10.1108/IJM-08-2019-0407

Hameed, Z., Khan, I. U., Islam, T., Sheikh, Z., & Naeem, R. M. (2020). Do green HRM practices influence employees' environmental performance? International Journal of Manpower, 41(7), 1061–1079.

Hooi, L. W., Lin, W., & Wang, X. (2022). Linking green HRM practices to employees' green behavior: The role of green work engagement and green organizational culture. Employee Relations, 44(4), 889–908. https://doi.org/10.1108/ER-04-2021-0163

Hooi, L. W., Lin, W., & Wang, X. (2022). Linking green HRM practices to employees' green behavior: The role of green work engagement and green organizational culture. Employee Relations, 44(4), 889–908.

Hooi, L. W., Liu, H., & Lin, W. (2021). Green human resource management and organizational citizenship behavior for the environment: The mediating roles of green psychological climate and work engagement. Journal of Cleaner Production, 310, 127377. https://doi.org/10.1016/j.jclepro.2021.127377

Jabbour, C. J. C., Santos, F. C. A., & Nagano, M. S. (2010). Contributions of HRM throughout the stages of environmental management: Methodological triangulation applied to companies in Brazil. International Journal of Human Resource Management, 21(7), 1049–1089. https://doi.org/10.1080/09585191003783512

Jabbour, C. J. C., Santos, F. C. A., & Nagano, M. S. (2010). Contributions of HRM throughout the stages of environmental management: Methodological triangulation applied to companies in Brazil. International Journal of Human Resource Management, 21(7), 1049-1089. https://doi.org/10.1080/09585191003783512

Jackson, S. E., Ren, S., & Jabbour, C. J. C. (2022). Green human resource management and the pursuit of environmentally sustainable business organizations: A review. Business Strategy and the Environment, 31(3), 1347–1362. https://doi.org/10.1002/bse.2978

Katz, D., Li, Y., & Wang, T. (2022). Meta-analysis of employee green behaviors and organizational performance. Journal of Business Ethics, 179(3), 645-662.

Khan, S., & Muktar, S. S. (2024). Empowering employees through green HRM: The role of environmental initiatives in sustainable performance. Sustainability, 16(2), 1190.

Khan, S., & Muktar, S. S. (2024). Empowering employees through green HRM: The role of environmental initiatives in sustainable performance. Sustainability, 16(2), 1190.

Liu, X., Wang, Y., & Chen, Z. (2020). Individual and organizational factors influencing green organizational citizenship behavior in developing economies. Environmental Management Review, 34(4), 523-540.

Longoni, A., Luzzini, D., & Guerci, M. (2018). Deploying environmental management across functions: The relationship between green human resource management and green supply chain management. Journal of Business Ethics, 151(4), 1081–1095. https://doi.org/10.1007/s10551-016-3228-1

Lorek, S. (2019). Business informatics tools for sustainability management: Monitoring and controlling resource efficiency. Management, 23(2), 45–62.

Masri, H. A., & Jaaron, A. A. M. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. Journal of Cleaner Production, 143, 474–489. https://doi.org/10.1016/j.jclepro.2016.12.087

Masri, H. A., & Jaaron, A. A. M. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. Journal of Cleaner Production, 143, 474-489. https://doi.org/10.1016/j.jclepro.2016.12.087

National Research University – Higher School of Economics. (2025). Business informatics: The role of information systems in sustainable HRM. HSE Press.

O'Donohue, W., & Torugsa, N. A. (2016). The moderating effect of 'Green' HRM on the association between proactive environmental management and financial performance in small firms. International Journal of Human Resource Management, 27(2), 239–261. https://doi.org/10.1080/09585192.2015.1063078

Opatha, H. H. D. N. P., & Arulrajah, A. A. (2014). Green human resource management: Simplified general reflections. International Business Research, 7(8), 101–112. https://doi.org/10.5539/ibr.v7n8p101

Pham, N. T., Tučková, Z., & Jabbour, C. J. C. (2021). Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior for the environment? Tourism Management, 84, 104161. https://doi.org/10.1016/j.tourman.2020.104161

Pham, N. T., Tučková, Z., & Phan, Q. P. T. (2019). Greening human resource management and employee commitment toward the environment: An interaction model. Journal of Business Economics and Management, 20(3), 446–465. https://doi.org/10.3846/jbem.2019.9659

Ragmoun, W., & Alwehabie, A. (2020). Green HRM, environmental success and OCBE in emerging economies. Journal of Environmental Sustainability, 8(1), 55-70.

Ren, S., & Jackson, S. E. (2020). HRM in business organizations: The pursuit of sustainability. Current Opinion in Environmental Sustainability, 45, 1–5.

https://doi.org/10.1016/j.cosust.2020.09.002

Ren, S., Jackson, S. E., & Colleagues. (2021). Title of the specific article or chapter by Ren et al. (Note: full reference details need verification—journal, volume, pages)

Renwick, D. W. S., Jabbour, C. J. C., Müller-Camen, M., Redman, T., & Wilkinson, A. (2016). Contemporary developments in Green (environmental) HRM scholarship. International Journal of Human Resource Management, 27(2), 114-128.

Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. International Journal of Management Reviews, 15(1), 1–14. https://doi.org/10.1111/j.1468-2370.2011.00328.x

Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. International Journal of Management Reviews, 15(1), 1-14.

Sathyapriya, J., Kanimozhi, R., & Adhilakshmi, V. (2013). Green HRM—Delivering high performance HR systems. International Journal of Marketing and Technology, 3(6), 227–234.

Shaban, O. S. (2019). Green training and development: Long-term investment in organizational environmental performance. Journal of Environmental Training & Development, 5(2), 89-105.

Shen, J., Dumont, J., & Deng, X. (2018). Employees' perceptions of green HRM and non-green employee work outcomes: The social identity and stakeholder perspectives. Group & Organization Management, 43(4), 594–622. https://doi.org/10.1177/1059601116664610

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. https://doi.org/10.1111/1744-7941.12147

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. https://doi.org/10.1111/1744-7941.12147

Wagner, M. (2013). 'Green' human resource benefits: Do they matter as determinants of environmental management system implementation? Journal of Business Ethics, 114(3), 443–456. https://doi.org/10.1007/s10551-012-1356-9

Walentek, D. (2020). Information and communication technologies and environmental sustainability: Telecommuting as a green HR practice. Sustainability, 12(21), 9139. https://doi.org/10.3390/su12219139

Walentek, D. (2021). Managing remote employees: Challenges for green HRM and sustainable performance. Journal of Cleaner Production, 316, 128248. https://doi.org/10.1016/j.jclepro.2021.128248

World Health Organization. (2018). 9 out of 10 people worldwide breathe polluted air, but more countries are taking action. https://www.who.int/news/item/02-05-2018-9-out-of-10-people-worldwide-breathe-polluted-air

Wulandaru, P., Robani, A., & Putri, N. A. (2024). Green organizational citizenship behavior and sustainable organizational performance: Evidence from Indonesian SMEs. Business Strategy and the Environment, 33(1), 77-91.

Wulandaru, P., Robani, A., & Putri, N. A. (2024). Green organizational citizenship behavior and sustainable organizational performance: Evidence from Indonesian SMEs. Business Strategy and the Environment, 33(1), 77–91.

development and validity. Asia Pacific Journal of Human Resources, 56(1), 31–55. https://doi.org/10.1111/1744-7941.12147

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. https://doi.org/10.1111/1744-7941.12147

Wagner, M. (2013). 'Green' human resource benefits: Do they matter as determinants of environmental management system implementation? Journal of Business Ethics, 114(3), 443–456. https://doi.org/10.1007/s10551-012-1356-9

Walentek, D. (2020). Information and communication technologies and environmental sustainability: Telecommuting as a green HR practice. Sustainability, 12(21), 9139. https://doi.org/10.3390/su12219139

Walentek, D. (2021). Managing remote employees: Challenges for green HRM and sustainable performance. Journal of Cleaner Production, 316, 128248. https://doi.org/10.1016/j.jclepro.2021.128248

World Health Organization. (2018). 9 out of 10 people worldwide breathe polluted air, but more countries are taking action. https://www.who.int/news/item/02-05-2018-9-out-of-10-people-worldwide-breathe-polluted-air

Wulandaru, P., Robani, A., & Putri, N. A. (2024). Green organizational citizenship behavior and sustainable organizational performance: Evidence from Indonesian SMEs. Business Strategy and the Environment, 33(1), 77-91.

Wulandaru, P., Robani, A., & Putri, N. A. (2024). Green organizational citizenship behavior and sustainable organizational performance: Evidence from Indonesian SMEs. Business Strategy and the Environment, 33(1), 77–91.