
Green Human Resource Management and Environmental Performance: Mediating Role of Employee Green Behavior and Moderating Role of Green Innovation Culture

Ripon Kumar Paul¹  | Kajol Karmoker^{2*}  | Md Anamul Islam³  | Brito Roy⁴ 
 | Md. Shah Azam⁵ 

¹Human Resource Management Discipline, Khulna University, Khulna 9208, Bangladesh

²Institute of Bangladesh Studies, University of Rajshahi and Human Resource Management Discipline, Khulna University, Khulna 9208, Bangladesh

³School of Business, University of Southern Queensland, Australia

⁴Human Resource Management Discipline, Khulna University, Khulna 9208, Bangladesh

⁵Department of Marketing, University of Rajshahi, Rajshahi 6205, Bangladesh

*Correspondence to: Kajol Karmoker, Institute of Bangladesh Studies, University of Rajshahi and Human Resource Management Discipline, Khulna University, Khulna 9208, Bangladesh.
E-mail: kajol.karmoker@hrm.ku.ac.bd

Abstract: Drawing on ability-motivation-opportunity (AMO) and resource-based view (RBV) theory, this study examines the impact of green human resource management (GHRM) on the environmental performance (EP) of star-rated hotels in Bangladesh. Additionally, the study explores the mediating role of employee green behavior (EGB) and the moderating role of green innovation culture (GIC) on the linkage between GHRM practices and EP. Based on the positivism paradigm, a quantitative approach was used for testing the study hypotheses. Data were collected from 400 employees working in the star-rated hotels of Bangladesh and analyzed through partial least squares structural equation modeling (PLS-SEM). The findings revealed that GHRM practices have a substantial positive impact on EP, and EGB mediates the effect of GHRM on EP. Moreover, the study found that GIC strengthens the association between GHRM and EP. This study contributes to the existing literature by revealing that the EP of hotels can not only be improved directly by GHRM but also through EGB and GIC. The outcomes deliver fundamental knowledge for hotel managers and policymakers striving to enhance environmental performance in line with sustainable development goals.

Keywords: Employee green behavior, environmental performance, green human resource management, green innovation culture, star-rated hotels.

Article info: Received 19 December 2025 | revised 26 January 2026 | accepted 3 February 2026 | published 13 February 2026

Recommended citation: Paul, R. K., Karmoker, K., Islam, M. A., Roy, B., & Azam, M. S. (2026). Green Human Resource Management and Environmental Performance: Mediating Role of Employee Green Behavior and Moderating Role of Green Innovation Culture. *Indonesian Journal of Sustainability Accounting and Management*, 10(1), 24–42. <https://doi.org/10.20448/ijSAM.v10i1.8186>



INTRODUCTION

Over the last few decades, global ecosystems have been severely affected by industrial pollution, carbon emissions, and dwindling natural resources. Almost all types of business organizations have been liable for environmental degradation in the present world. Although manufacturing sectors have traditionally been viewed as leading environmental degraders because of their emission and waste production levels (Ullah, Khan, & Ahmad, 2022), service sectors also affect the natural environment through their regular operations (Aithal & Jeevan, 2016). Accordingly, protection of the natural environment has become a top priority for all types of business organizations worldwide (Kim, Kim, Choi, & Phetvaroon, 2019). Business organizations are now continuously designing solutions to address environmental challenges since they cannot avoid blame for harming the natural environment.

In designing ways to mitigate the adverse impacts of business activities on the environment, organizations are incorporating eco-friendly initiatives into their business processes. Green human resource management (GHRM) is such an initiative that has recently been found to be an efficient technique for achieving environmental objectives and thereby enhancing environmental sustainability (Pham, Thanh, Tučková, & Thuy, 2020; Umrani et al., 2020; Yusoff, Nejati, Kee, & Amran, 2020). GHRM is the integration of environmental management objectives into fundamental HRM processes, including green recruitment and selection, green training and development, green remuneration, and green performance review (Renwick, Redman, & Maguire, 2013). This environment-focused strategy is now practiced in many industries, particularly those responsible for environmental degradation, such as the oil and mining industry (Chen, Jiang, Li, & Gao, 2021), manufacturing industry (Yong et al., 2020), textile industry (Ali, Masud, Hossain, Islam, & Alam, 2024), transportation industry (Faeni, Oktaviani, Riyadh, Faeni, & Beshr, 2025), and hospitality industry (Irani, Kiliç, & Adeshola, 2022; Yusoff et al., 2020).

Globally, the hospitality industry has incorporated the issue of GHRM as an effective way of reducing the industry's harmful impact on the natural environment. Many international hotels like Marriott International, Hilton, Kimpton Hotels & Restaurants have adopted GHRM practices to mitigate their environmental footprint. The industry is concerned with protecting the natural environment because it pollutes through energy consumption, water usage, waste generation, chemicals, and materials used in their activities. It is estimated that the hospitality industry is responsible for around 8% of global greenhouse gas emissions (Abeydeera & Karunasena, 2019). In this perspective, GHRM has emerged as a method to advance environmental sustainability in the industry. However, this claim raises a major question of how GHRM practices enhance environmental performance (EP) in the hospitality industry. Are there any mechanisms through which GHRM can ensure environmental sustainability?

In discovering the mechanisms between GHRM and EP in the hospitality industry, recent studies mostly found that employee green behavior (EGB) plays the most significant role in enhancing EP (Elishaer, Sobaih, Aliedan, & Azazz, 2021; Nisar, Haider, Ali, Gill, & Waqas, 2024). EGB refers to employee actions that reduce an organization's environmental footprint, such as conserving energy, minimizing waste, and using resources efficiently (Zacher, Rudolph, & Katz, 2023). The effectiveness of a company's EP heavily depends on employees' green behavior. This claim is supported by research from Kim et al. (2019), which examined how EP in Malaysia's hotel industry can be improved through EGB. EGB, driven by GHRM practices, contributes to environmental management accounting within hotels, as employees become more active in reporting environmental impacts and adopting eco-friendly initiatives to reduce those impacts. Employee engagement through GHRM practices ensures transparency and credibility in sustainability reporting in hotels. The Ability-Motivation-Opportunity (AMO) theory also supports that employees are more likely to engage in green behaviors to improve EP if their abilities and motivations are enhanced through green training, development, and green performance appraisal systems (Nisar et al., 2024).

Additionally, it is asserted that the relationship between GHRM practices and EP strengthens in the presence of a culture of green innovation (Muisyo & Qin, 2021). Green innovation culture (GIC) refers to the adoption of environmentally friendly products that are easy to recycle, reuse, and decompose, and green

processes that reduce water and electricity consumption (Wang, 2019). However, the studies incorporating GIC as a moderator on the association between GHRM practices and EP have received scant attention from scholars, particularly in Bangladesh's hospitality industry. As the industry has grown over recent years, it is gradually recognizing the importance of environmental sustainability. The industry is now focusing on adopting green technology with the goal of achieving energy efficiency and resource conservation (Mohiuddin, Mesbah, Nowreen, & Nahian, 2021). In this perspective, the current study's aim to investigate GHRM practices and EP relationship with the moderating effect of GIC has added a new dimension to the existing literature and theoretical framework. This research extends earlier studies by exploring EGB as a mediator and GIC as a moderator within the framework of GHRM and EP in the hospitality industry of Bangladesh. By doing so, this research helps policymakers, industry leaders, and HR professionals discover strategies for enhancing environmental sustainability.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Ability-Motivation-Opportunity Theory

This study is based on ability-motivation-opportunity (AMO) theory and resource-based view (RBV) theory. AMO theory, established by Appelbaum (2000), shows that high employee performance emerges from three crucial elements: abilities, motivation, and opportunity to participate. The present study applies the AMO theory to forecast the relationships between GHRM practices, EGB, and EP, as the AMO model is suitable for examining human actions because of its behavioral emphasis (Waseem, Mirza, Memon, & Naseem, 2025). In the context of GHRM, the AMO framework can be applied to illustrate the path through which green HR practices lead to employee development and engagement (Iftikar et al., 2022). For instance, green recruitment along with green training provides important skills to employees by supporting environmental initiatives. Similarly, green performance management and green rewards foster motivation by incentivizing sustainable initiatives and behaviors. Moreover, green involving practices create ample opportunities for employees to proactively participate in environmental management efforts (Ren, Tang, & Jackson, 2021). Like the present study, a number of studies drawing on AMO theory, such as Pham et al. (2020), Singh, Del Giudice, Chierici, and Graziano (2020), and Yong et al. (2020), have been conducted previously to investigate the effect of GHRM on employee-level outcomes and organizational-level outcomes like environmental performance.

The Resource-Based View Theory

Resource-Based View (RBV) theory is one of the theories put forward by Barney (1991) and Wernerfelt (1984). According to this theory, a firm can gain a competitive advantage through its own resources and capabilities that it possesses internally. This theory states that competitive advantage may be attained by a company by developing resources with VRIN (valuable, rare, inimitable, non-substitutable) properties (Barney, 1991). RBV fundamentally maintains its focus on organizational capabilities such as innovation, strategic HR practices, and sustainable operations to improve performance and efficiency (Khanra, Kaur, Joseph, Malik, & Dhir, 2022). The current research employed RBV theory since it claims that GHRM can improve environmental performance by building green strategic capabilities in an organization (Wang, 2019). Companies applying GHRM activities can have lower costs and increased efficiency, thereby building their environmental image. These programs help reduce costs, minimize waste, and increase resource efficiency, which enhances a firm's competitive advantage (Carballo-Penela, Ruzo-Sanmartín, Álvarez-González, & Paillé, 2023). This theory has been applied in various studies like (Aggarwal & Agarwala, 2023; Rana & Arya, 2024; Yusoff et al., 2020), which demonstrate that environmental performance (EP) of an organization can be achieved through internal capabilities like GHRM.

Green Human Resource Management and Environmental Performance

Green human resource management (GHRM) becomes a strategic tool for improving environmental performance (EP) in the current business environment, which is very sensitive to environmental sustainability.

GHRM contributes to sustainable development in three ways: de-materialization, de-carbonization, and de-mobilization (Veerasingam, Joseph, & Parayitam, 2023). GHRM practices touch on a number of areas of the employee life cycle. They may attract people who have a strong environmental ethos and green skills through recruitment (Pham, 2021). The employees can be trained and equipped with knowledge and skills to reduce their environmental impact in their everyday activities, helping ensure environmental sustainability. Sustainable behavior can be promoted by using performance management systems that combine environmental indicators (Zharfpeykan & Akroyd, 2022). Moreover, green compensation and reward systems that encourage environmentally friendly behavior may be part of GHRM. Conversely, when human activity seriously damages nature, EP is one of the keys to changing this situation. It can be defined as the quantifiable outputs of activities to reduce negative impacts on the environment and ensure sustainability (Somogyi, 2016).

EP indicators can play an important role in gauging the achievement of sustainability objectives. These indicators may be divided into various areas, such as resource utilization (water and energy efficiency), pollution, and emissions (air, water, and soil), waste management practices, and biodiversity impact assessment (Yadav & Nikalje, 2024). EP is used in various ways because businesses utilize it to monitor their sustainability initiatives, minimize environmental risks, and enhance brand image in the eyes of their customers (Alam & Islam, 2021). Environmental Performance Reviews (EPRs) are used by countries to review their achievements on environmental commitments and policies at the national level. The Environmental Performance Index (EPI) is used to rank countries based on the efficiency of their environmental policies, which is highly important for maintaining competitiveness (Halkos & Zisiadou, 2025). Researchers have recognized GHRM as a proactive operations strategy that involves employees to streamline managerial processes and workflows to minimize the ecological footprint of enterprises. It focuses on improving the ecological impact of enterprises to enhance their efficiency and effectiveness. According to current research, successful GHRM may result in decreased resource usage, waste creation, and pollution (Faeni, Feani, Pujiati, & Cahaya, 2025). The GHRM practices could be an influencing factor in improving employee engagement and innovation toward developing green solutions within the hospitality sector, making it more competitive and lucrative to environmentally conscious global customers (Khan, Gogia, Shao, Rehman, & Ullah, 2025). This, subsequently, may enhance the competitive edge of the industry through cost savings and the creation of an advantageous brand image regarding environmental responsibility (Alam & Islam, 2021). Hence, we can predict that:

H₁: GHRM practices relate positively to the EP of hospitality organizations.

Green Human Resource Management and Employee Green Behavior

With the current environmentally conscious era, especially in the hospitality industry that faces immense environmental pressure, organizations are gradually adopting GHRM practices to promote employee green behavior (EGB) for its own sake. EGB includes employee behaviors that reduce an organization's environmental impact (Bashirun, Noranee, & Hasan, 2025). Recent studies propose that GHRM practices are the leverage that can stimulate EGB. The practices of recruitment focusing on individuals with strong environmental values and green skills can generate a workforce prone to sustainable behaviors (Jamil, Zaman, Kayikci, & Khan, 2023). The employees who work in the hospitality industry can be given knowledge and skills on ensuring sustainability through training and development programs aimed at environmental awareness and green practices (Stoimenov, 2025). In addition, the performance management systems that incorporate environmental metrics with standard measures and the reward systems that encourage environmentally friendly practices can motivate employees to focus on sustainable practices (Thomas, Maheswari, & Kavitha, 2025). The GHRM methods in the hospitality sector may serve as a lever to shape employee behavior in different ways, which entail interpersonal and cognitive mechanisms (Hameed, Khan, Islam, Sheikh, & Naeem, 2020). Green human resource strategies can increase employees' eco-friendly behaviors by promoting their skills, knowledge, positive attitudes, and engagement in environmentally friendly activities. Proper GHRM practices help create an enabling green work environment, fostering a sense of responsibility and ownership among employees to improve the environmental performance of the hospitality industry. Employee participation in EGB justifies the competence of GHRM programs, which can translate into greater

organizational commitment toward sustainability efforts (Ghosh & Haque, 2025). Therefore, we can propose that:

H₂: GHRM practices relate positively to hotel EGB in hospitality organizations.

Employee Green Behavior and Environmental Performance

Currently, businesses driven by the pursuit of sustainable development integrate environmentally friendly practices into their regular operations. Recent studies show that, at the organizational level, employee green behavior reduces resource consumption and improves environmental resource efficiency (Anwar et al., 2020). Engaging in environmentally friendly practices not only meets work responsibilities and environmental objectives but also results in concrete rewards and enhanced job satisfaction (Hou, Chan, Dong, & Yao, 2022) and contributes to the overall well-being of employees in terms of qualifications, tangible benefits, and mental health (Badawi, 2019). Many companies are integrating sustainable development goals into their business strategy. It is crucial for organizational sustainable development that all workers at every level participate in green behavioral activities (EGB) to help achieve ecologically conscious objectives (Bashirun et al., 2025). Through these, employees will be motivated to participate in environmentally friendly practices such as saving water, being resourceful, minimizing waste, saving electricity, and composting, leading the organization to better environmental performance. As stated by Elshaer et al. (2021). EGB links ecological preservation and other positive actions with the efficient use of resources in a company's daily activities, which in turn enhances EP. It helps organizations and employees work together for a sustainable future (Hopkins & Bardeel, 2023). It evaluates how employees' environmentally friendly efforts affect their operations and are essential for promoting sustainable growth in the community and overall industry. Therefore, it can be proposed that:

H₃: EGB relates positively to EP in hospitality organizations.

Employee Green Behavior as a Mediator

Employee green behavior (EGB) can be defined as the behavior of employees that minimizes the environmental impact of an organization, including energy and waste reduction, and the efficient use of resources (Bashirun et al., 2025). It has been indicated that GHRM practices have the potential to drive EGB through leverage. The purpose of encouraging employees to behave in an environmentally friendly manner is the growth of organizations to better impact the environment and reach sustainability targets (Saeed et al., 2019). These are deliberate actions or behaviors by employees aimed at assisting the environment by mitigating the adverse effects of human activities and encouraging positive reforms toward sustainable development (Vanisri & Chandra, 2025). Some of the environmental practices that employees can engage in include water saving and resourcefulness, waste reduction, electricity saving, and composting. They are classified into groups of tasks: green behavior and voluntary green behavior (Tang, Ren, Wang, Li, & Zhang, 2023). GHRM can influence green behaviors through hiring green employees, engaging them in green activities and sustainability training. The increased levels of expertise, skills, and environmental awareness of staff can contribute to improving their green behaviors (Gill, Ahmad, & Kazmi, 2021). Organizations can encourage staff to engage in sustainable activities and foster a more environmentally conscious attitude by integrating HRM practices that acknowledge employees' eco-friendly initiatives, including providing training or implementing a green rewards system (Usman, Rofcanin, Ali, Ogbonnaya, & Babalola, 2023). In order to create a favorable green working environment, employees should feel empowered and have the duty to take care of environmental performance. Research indicates that one of the largest amounts of competitive advantage could be achieved through the process of embracing environmentally responsible habits in the hotel sector that are translated into enhanced customer satisfaction and loyalty. The success of hotels in implementing green practices is subject to the synergy of organizational policies encouraging sustainable business practices as well as the commitment of employees to environmental conservation (Pham, 2021). This is why the eco-friendly behavior of employees is crucial in reducing costs, minimizing waste, surpassing competitors, and enhancing the overall environmental performance from this viewpoint. On the other hand, EGB by employees will also confirm the

success of GHRM initiatives, which may result in increased organizational dedication to the sustainability initiative (Ghosh & Haque, 2025). Hence, it can be proposed that:

H₄: EGB mediates the relationship between GHRM practices and EP in hospitality organizations.

Green Innovation Culture as a Moderator

In this modern day and age of environmental awareness, companies are pursuing ways of enhancing their environmental performance. But environmentally conscious employees are not enough; change in their motive-driven culture is also necessary because individual effort alone is not sufficient if surroundings are not working in harmony. This is why a culture that promotes innovations towards a greener future is very necessary. Green innovation culture is a term that describes a collection of shared values, beliefs, and behaviors that nurture employees to work and come up with environmentally friendly solutions (Usman et al., 2023). Although the GHRM practices can encourage basic environmental behavior such as conserving resources (Ansari, Farrukh, & Raza, 2021), GIC encourages creativity, risk-taking and collaboration, resulting in the creation of new green solutions. The free flow of communication and knowledge in a GIC will enable employees to exchange ideas and perfect green innovations (Shahbaz & Malik, 2025). Also, the GIC recognition and reward systems enhance the growth and execution of these innovations (Batanova, 2024).

With the rise of interest in environmental concerns, it has come to a point where hotels have incorporated eco-friendly operations into their objectives (Talukder, 2025). Hotels have been working hard to enhance the efficacy of their sustainability programs. This is why, for further development, a robust organizational culture is very important in promoting innovative activities (Bendak, Shikhli, & Abdel-Razek, 2020). The establishment of a stable organizational environment leads to a green innovation culture that, in turn, makes GHRM practices implementation successful and promotes their contribution to better environmental performance. In this way, a green organizational culture should be considered a vital need in ensuring the ongoing enhancement and advancement of the hotel's environmental performance with the help of GHRM (Aggarwal & Agarwala, 2023). The moderating effect of GIC is central when considering how GHRM practices are converted into effective EP. Green recruitment and training are among the best GHRM practices to generate a stock of green-skilled employees who are environmentally aware (Naqvi, Shaikh, & Iqbal, 2025). Nevertheless, the GIC is the only place that can help create an environment where skills can be converted into innovative solutions. A strong GIC allows employees to build on each other's ideas, experiment with new green technologies, and overcome challenges in bringing green innovations to life (Chen et al., 2021). Ultimately, successful green innovations within a GIC environment can lead to significant reductions in resource consumption, pollution, and overall environmental impact. Thus, we propose that:

H₅: GIC moderates the strength of the relationship between GHRM and EP, so performance will be higher for organizations adopting GIC along with GHRM practices than those without GIC.

Based on the above discussion in the literature review and hypotheses formulation, the following conceptual research model (Figure 1) has been developed and examined in the study.

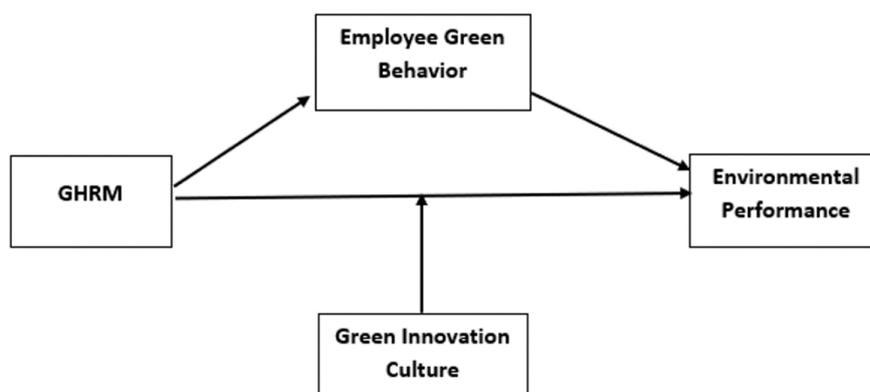


Figure 1: Conceptual Research Model

METHODOLOGY

Participants and Procedures

Adopting positivism philosophy, a quantitative research approach has been employed in the current study to examine the impact of GHRM practices on EP via EGB. This study also investigates the moderating role of GIC on the relationship between GHRM practices and EP. The conceptual framework and hypotheses of the study have been developed based on previous literature and theories. The hypotheses have been tested using quantitative data collected through a structured questionnaire survey. In developing the structured questionnaire, a draft was first created and tested to ensure content validity, adequacy, clarity, relevancy, and suitability of the instrument within the context of Bangladesh. Consequently, the final questionnaire was developed, comprising 33 questions distributed across two sections. Section A covered the demographic information of respondents, while Section B contained items related to study variables: GHRM practices, environmental performance, employee green behavior, and green innovation culture.

Data has been collected with the help of experienced surveyors, and the respondents have been selected using a purposive sampling technique, as the population size is unknown. Purposive sampling is suitable because it helps gather meaningful data by considering respondents' willingness (Cooper, Schindler, & Sun, 2003). Using this technique, data was collected from employees of star-rated hotels (3-star, 4-star, and 5-star) located in Cox's Bazar, Chattogram, and Dhaka regions of Bangladesh. 1-star and 2-star hotels were avoided due to lower environmental consciousness and involvement (Islam, Hack-Polay, Haque, Rahman, & Hossain, 2022). The data collection phase spanned from November 1st, 2024, to January 30th, 2025. Initially, we contacted the HR departments of the respective hotels to obtain employee directories. Employees with a minimum secondary education qualification were selected as respondents because the questionnaire was prepared in English. A total of 500 questionnaires were distributed, and 437 responses were received. After intensive screening, 29 responses were deleted due to missing values, and 8 responses were removed because of biased answers. Consequently, 400 responses were deemed error-free and used for data analysis. This sample size of 400 meets the minimum sample size criterion of 385 Cochran (1977) at a 95% confidence level, 5% margin of error, and 50% population variability.

Measurements

In the survey questionnaire, a 5-point Likert scale (Strongly disagree=1 to Strongly agree=5) was used to gather respondents' opinions on each item of the study constructs. All measurement items were adopted from previous, well-established, recognized, valid, and reliable sources.

GHRM practices were measured by five items adopted from the work of Muisyo and Qin (2021) and Kim et al. (2019). The items include: "Our hotel prefers to hire employees who have environmental sustainability knowledge (GHRM1)," "Our hotel provides adequate training on environmental issues (GHRM2)," "Our hotel considers employees' eco-friendly behavior as part of their performance appraisals (GHRM3)," "Our hotel relates employees' eco-friendly behavior to rewards and compensation systems (GHRM4)," and "Our hotel encourages employees to provide suggestions on reducing environmental pollution (GHRM5)."

EP was measured by a 7-item scale developed by Kim et al. (2019). The items are: "Our hotel has reduced the amount of wastage (EP1)," "Our hotel has conserved natural resources, such as water usage (EP2)," "Our hotel has conserved energy usage through energy-saving measures, such as sensor-based lighting systems and escalators (EP3)," "Our hotel has reduced purchases of non-renewable materials, chemicals, and components (EP4)," "Environmental management within our hotel has reduced overall costs (EP5)," "Environmental management has improved our position in the marketplace (EP6)," and "Environmental management has enhanced the reputation of our hotel (EP7)."

Measurement scales of EGB were adopted from Kim et al. (2019) and Khan et al. (2022). The items are: "I turn off electric appliances, such as computers, AC, and TV before I get off work (EGB1)," "When I leave an unoccupied room, I turn off lights and/or other electric devices, such as fans or air conditioners (EGB2)," "I sort

and recycle garbage in the workplace (EGB3),” “I recycle and reuse materials at work (EGB4),” “I conserve resources at work, such as electricity (EGB5),” “I pay close attention to water leaks (EGB6),” “I limit water usage in the toilet to save water (EGB7),” and “I encourage my colleagues to keep the environment neat and clean (EGB8).”

GIC was measured using a 6-item scale adopted from the study of Muisyo and Qin (2021). However, a few items were modified by the researchers to make it suitable for the context of the hotel industry. The measurement items of green innovation culture include: “our hotel uses materials that produce minimal or no pollution (GIC1),” “our hotel is very keen to use products that are easily recyclable, re-usable, and biodegradable, such as paper-made bags and boxes for parcel services (GIC2),” “our hotel prefers to use materials that save energy in day-to-day operations (GIC3),” “our hotel has adopted an operation process that reduces the emission of hazardous wastes (GIC4),” “our hotel conducts operations in such a way that ensures efficient use of water, electric power, and natural light (GIC5),” and “our hotel has adopted a mechanism or processes that allow for the re-use of treated wastes and emissions (GIC6).”

RESULTS AND DISCUSSION

At the initial stage of analysis, collected data was coded and inserted into Microsoft Excel to prepare the dataset. Subsequently, descriptive analysis was performed with IBM SPSS-26 to gain an insightful overview of the variables. Afterwards, the relationships among the variables were examined using Smart PLS-4.

Descriptive Statistics of the Variables

The descriptive analysis provides insight into the existence of variables in Bangladesh's hospitality industry. Table 1 displays the descriptive information of these variables. For the GHRM variable, most participants perceive it with a mean of 4.360 and a standard deviation of 0.439, indicating broad agreement on GHRM practices. EP receives similar evaluations, with a mean score of 4.395. The EGB mean value of 4.355 reflects respondents' positive attitudes toward the environment. Likewise, most respondents believe their organizations have sufficient ability to foster green innovation, with a mean value of 4.352 for GIC.

Table 1: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
GHRM	400	3.000	5.000	4.360	0.439
EP	400	2.000	5.000	4.395	0.488
EGB	400	3.000	5.000	4.355	0.415
GIC	400	2.000	5.000	4.352	0.405
Valid N (listwise)	400				

Outliers

When data points diverge significantly from most of the data set under observation, they are known as outliers (Hawkins, 1980). The Mahalanobis distance test is used to identify potential multivariate outliers by measuring how far a data point remains from the dataset's average center (centroid) (Ghorbani, 2019). The distance is evaluated using a threshold value of $p < 0.001$ (Dashdondov & Kim, 2023). The analysis reveals no outliers in the sample, as none of the probability values was below 0.001. It suggests that the dataset does not contain extreme observations that could improperly hamper subsequent analyses.

Common Method Bias

As the researchers have utilized a singular method for data collection using a self-reported survey method, common method bias (CMB) may arise (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This study employs Harman's single-factor tests, as shown in Table 2, as well as VIF (Variance Inflation Factor) presented in Table 3, for assessing and alleviating CMB. Table 2 demonstrates that the total variance extracted by one factor is

30.079%, which is less than the threshold value of 50% (Podsakoff et al., 2003). Likewise, all the VIF values shown in Table 3 are lower than the threshold of 3.3, indicating the absence of any multicollinearity among the variables (Kock & Lynn, 2012).

Table 2: Total Variance Explained

Component	Initial Eigenvalues Total	Extraction Sums of Squared Loadings % of Variance	Cumulative %
1	8.461	30.079	30.079

Note: Extraction Method: Principal Axis Factoring.

Table 3: Collinearity Statistics (VIF) – Inner Model Matrix

Path	VIF
EGB -> EP	1.399
GHRM -> EGB	1.000
GHRM -> EP	1.355
GIC -> EP	1.486
GIC x GHRM -> EP	1.940

Assessment of Measurement Model

In this step, confirmatory factor analysis (CFA) has been conducted to evaluate the reliability and validity of latent constructs and their associated indicators (Hair Jr, Howard, & Nitzl, 2020). Figure 2 depicts the factor loadings of all indicators, and Table 4 presents the remaining CFA results. When the factor loadings, Cronbach’s alpha, and composite reliability meet or exceed the threshold of 0.70, they are considered acceptable (Hair Jr, Ringle, & Sarstedt, 2013). In our outer model shown in Figure 2, all values surpass the minimum threshold, indicating the indicators' reliability. Additionally, Table 4 shows that all Cronbach’s alpha and composite reliability values exceed 0.70, confirming the construct's reliability. Furthermore, the composite reliability (rho_a) value falls between and closely aligns with Cronbach’s alpha and composite reliability (rho_c), further demonstrating the measurement model's reliability (Dijkstra & Henseler, 2015).

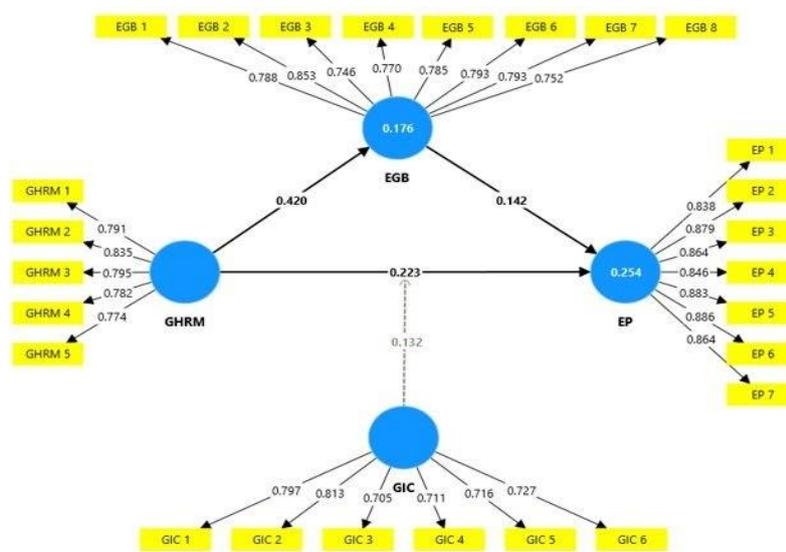


Figure 2: Measurement Model

However, all the AVE values depicted in Table 4, ranging from 0.557 to 0.750, exceed the threshold value of 0.50, which facilitates the establishment of convergent validity of our model (Hair & Alamer, 2022). It reflects that the indicators measuring the same latent construct demonstrate a high relationship with one another (Hair Jr et al., 2020). For assessing discriminant validity, we utilized the Fornell-Larcker Criterion, HTMT ratio (Ramayah, Cheah, Chuah, Ting, & Memon, 2018). In Table 5, the square roots of AVE for each latent construct surpass the value of correlation with all other constructs. Thus, it ensures the presence of discriminant validity under the Fornell-Larcker Criterion (Fornell & Larcker, 1981). Additionally, Table 6 shows that all the values of the HTMT ratio are less than the threshold value of 0.85 (Henseler, Ringle, & Sarstedt, 2015), maintaining discriminant validity by overcoming the shortcomings of the above method.

Table 4: Measurement Statistics of Constructs

Constructs	Cronbach alpha (>.708)	Composite reliability (rho_a)	Composite reliability (rho_c) (>.708)	AVE (>.5)
GHRM	0.855	0.858	0.896	0.633
EP	0.944	0.947	0.955	0.750
GIC	0.841	0.851	0.882	0.557
EGB	0.911	0.913	0.928	0.617

Table 5: Fornell-Larcker Criterion

	EGB	EP	GHRM	GIC
EGB	0.786			
EP	0.357	0.866		
GHRM	0.420	0.401	0.796	
GIC	0.180	0.247	0.277	0.746

Table 6: Heterotrait-Monotrait Ratio (HTMT)- Matrix

	EGB	EP	GHRM	GIC
EGB				
EP	0.382			
GHRM	0.473	0.443		
GIC	0.205	0.268	0.330	
GIC x GHRM	0.490	0.443	0.487	0.614

Structural Model

In this step, the hypotheses of our study have been tested using a bootstrapping technique (5000 sub-samples) in Smart PLS-4. Figure 3 illustrates the result of the structural model. To assess the predictive power and explanatory ability of our model, the study utilized R-square and Q-square values shown in Table 7. R-square values describe the variance in the dependent variables explained by the independent variable. According to (Cohen, 2013), the threshold values of R-square for dependent latent constructs are 0.26, 0.13, and 0.02, reflecting substantial, moderate, and weak explanatory power, respectively. Additionally, Q-square assesses predictive performance; if the Q-square value for a dependent variable exceeds zero, the model has predictive relevance (Hair Jr et al., 2013; Subhaktiyasa, 2024). The results in Table 7 show that the R-square values for endogenous variables (EGB and EP) are 0.176 and 0.254, indicating moderate explanatory power (Cohen, 2013). The Q-square value for the entire endogenous variable exceeds zero, confirming predictive relevance (Subhaktiyasa, 2024).

Additionally, by following the suggestion of Henseler et al. (2015), this study has used the standard root mean square residual (SRMR) to assess model fitness. The SRMR values for both the saturated and estimated models are 0.047 and 0.058, respectively, which are lower than 0.08 and are considered acceptable (Hu & Bentler, 1999). Furthermore, the NFI (Normed Fit Index) is calculated to measure the incremental fit of the

model. The NFI value ranges between 0 to 1, where a value closer to 1 is considered a better fit. The NFI values for the saturated and estimated models are 0.889, which is closer to 1, indicating good model fit (Yusif, Hafeez-Baig, Soar, & Teik, 2020).

Table 7: Explanatory Power

Predictors	Outcomes	R-Square	Q-Square
GHRM			
EGB	EP	0.254	0.224
GIC x GHRM			
GHRM	EGB	0.176	0.168

Direct Effect

The result depicted in Table 8 reveals that all the direct relationships (presented through H₁, H₂, H₃) are significant and positive because their P values are lower than the threshold of .05 (Biau, Jolles, & Porcher, 2010). Here, GHRM exercises a significant impact on environmental performance ($\beta=0.223$, $p<0.001$), employee green behavior ($\beta=0.420$, $p<0.001$), thereby supporting H₁ and H₂. Employee green behavior has also significant and positive relations with environmental performance ($\beta=0.142$, $p<0.01$), so H₃ is also accepted.

The beta coefficient ($\beta=0.223$) for H₁ indicates a positive connection between GHRM and EP variables, suggesting that increases in GHRM are expected to raise the EP of the hospitality sector. For H₂, the coefficient 0.420 confirms that GHRM has a substantial positive effect on employee green behavior, implying that increasing GHRM practices can improve employees' sustainable behavior. H₃, with a path coefficient of 0.142, shows a positive but weaker relationship compared to the others. It confirms that while EGB contributes to EP, its direct effect is lower than that of the overall GHRM system.

Indirect Path Effect

According to Hayes and Preacher (2014) mediation effect exists when the confidence interval at 97.5% bias-corrected does not generate zero. In the current study findings as presented in Table 9, the indirect path (H₄) between GHRM and EP via EGB is significant and positive because p value of this path is lower than the threshold 0.05 and bootstrapping confidence interval is showing the value greater than zero (CILL, CIUL: [0.015, 0.109], $\beta=0.159$, $t >1.96$, $p<0.05$).

Moderating Effect

Table 10 shows that green innovation culture (GIC) creates a positive and significant effect on the relationship between GHRM and EP. The sample mean of 0.123 closely matches the original beta value of 0.132, confirming the consistency of the obtained results. The findings gain greater trustworthiness because of the standard deviation value of 0.038, which indicates that data points cluster tightly together. The T-statistic of 3.446 demonstrates high strength compared to 1.96, and the p-value of 0.001 reaches extremely significant levels, thus validating this moderating effect. Additionally, to reveal the nature of the effect more vividly, a two-way interaction effect has been plotted in Figure 4. From this figure, it is evident that at high GIC, any increase in GHRM significantly increases EP, thereby clarifying that the positive relationship between GHRM and EP is strengthened by high GIC. So, the combined implementation of GHRM and GIC enhances the positive effects of GHRM on EP.

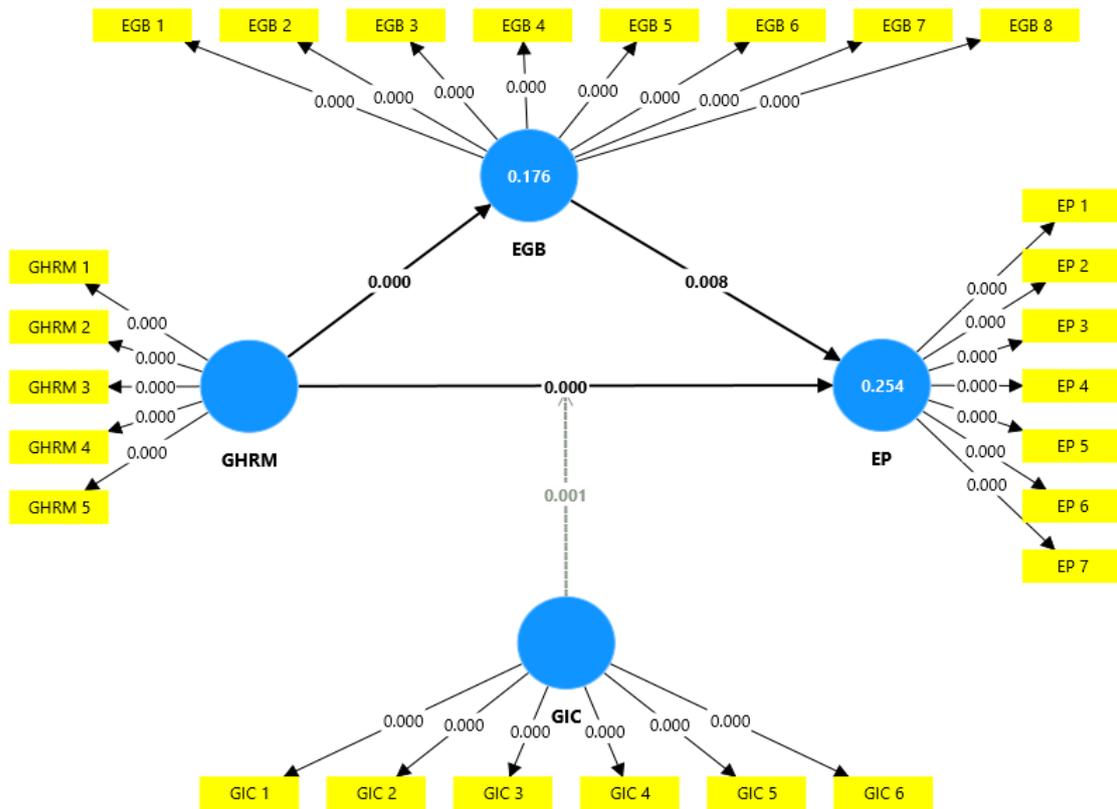


Figure 3: Structural Model

Table 8: Direct Path Effect of Hypothesized Model

Hypotheses	Path	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision
H ₁	GHRM ->EP	0.223	0.046	4.830	0.000	Accepted
H ₂	GHRM -> EGB	0.420	0.059	7.171	0.000	Accepted
H ₃	EGB -> EP	0.142	0.053	2.659	0.008	Accepted

Table 9: Indirect Effect

Hypothesis	Path	Original sample (O)	T statistics (O/STDEV)	P value	Confidence Interval L.L (2.5%)	Confidence Interval U.L (97.5%)	Decision
H ₄	GHRM -> EGB ->EP	0.159	2.472	0.013	0.015	0.109	Accepted

Table 10: Moderation Effect Analysis

Hypothesis	Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P value	Decision
H ₅	GIC x GHRM -> EP	0.132	0.123	0.038	3.446	0.001	Supported

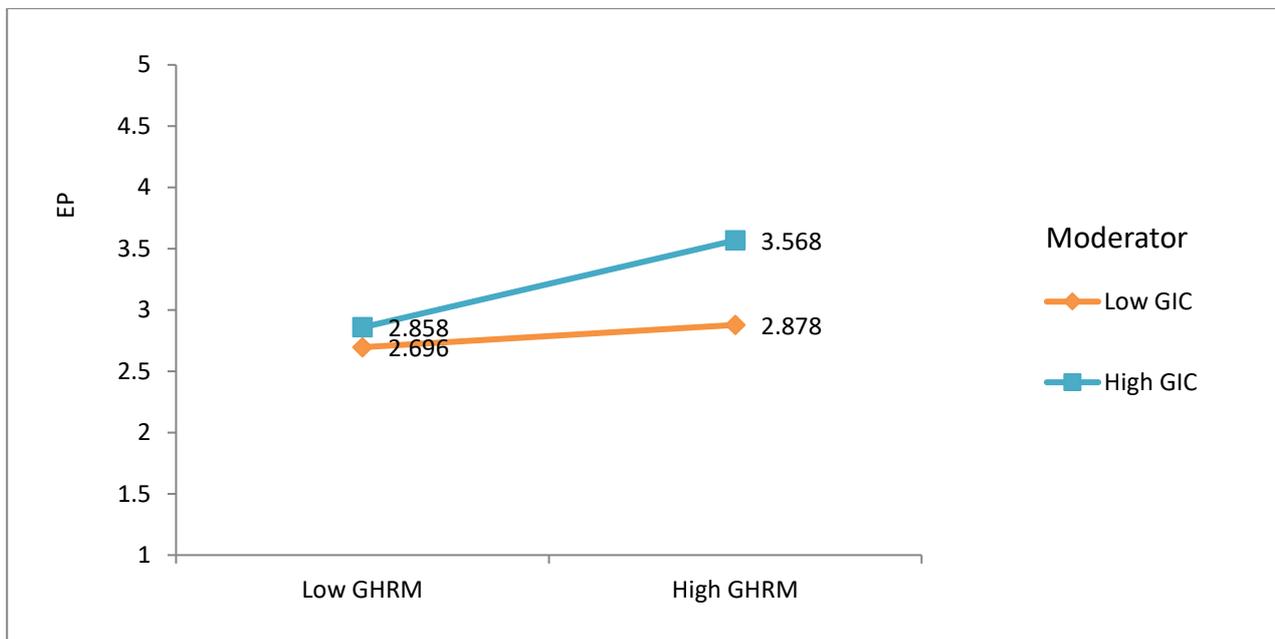


Figure 4: Moderation Effect of GIC

Overall, the study investigated the interplay of GHRM practices, employee green behavior, and environmental performance, with the moderating effect of green innovation culture. The first hypothesis, supported by findings, explains the positive relationship between GHRM practices and EP. This finding validates the outcomes of previous studies that demonstrated how GHRM practices lead to sustainable business practices by integrating environmental concerns into HR functions (Renwick et al., 2013; Yusoff et al., 2020). The hospitality industry in developing countries like Bangladesh confronts criticism because of its inappropriate resource consumption and inefficient practices within the hospitality sector (Riva, Magrizos, & Rubel, 2021). So, the application of organization-wide GHRM practices in this sector can address this criticism through green recruitment, green training, and green reward systems. Organizations that foster sustainable practices among their employees in terms of energy conservation and waste reduction can lessen their ecological footprint. GHRM strategies frequently help organizations develop a workforce that is environmentally aware and appreciates green initiatives (Ahmad, 2015).

The acceptance of the second hypothesis demonstrates that GHRM practices positively influence employees' green behavior in hospitality organizations, aligning with existing literature that emphasizes how GHRM practices promote environmentally responsible behavior among employees (Aboramadan & Karatepe, 2021). Based on the result, it is clear that the green training and development program, along with the green performance management system, equip and incentivize employees toward environmentally friendly actions by engaging in energy conservation, waste management, and resource efficiency as part of their green behavior. The application of GHRM strategies can boost hospitality employees' eco-friendly behavior by nurturing their environmentally conscious skills, knowledge, and positive attitudes. Similar research also emphasizes the importance of integrating green HR practices to improve sustainable behavior (Kim et al., 2019).

This study further exhibits a positive relation between EGB and EP. Employees can significantly improve environmental effects by engaging in sustainable and eco-friendly behaviors demonstrated by energy savings, waste management, and sustainable resource utilization. These findings are supported by prior studies that elucidate how employee green behaviors lead to organizational sustainability (Kim et al., 2019). EGB can reduce resource consumption and expand environmental efficiency at the organizational level. This occurs because employees in Bangladesh's hospitality industry engaging in environmentally friendly practices not only meet

work responsibilities and environmental objectives but also receive concrete rewards and enhanced job satisfaction (Hou et al., 2022), and contributes to the overall well-being of employees in terms of qualifications, tangible benefits, and mental health (Badawi, 2019). The organization continuously monitor performance of employees at every level to evaluate whether their performance is congruent with the organization's ecologically conscious objectives (Boiral & Paillé, 2012). Furthermore, the hospitality industry in Bangladesh provides support and motivation for staff environmental behaviors, which is crucial for recognizing employees' green initiatives, ultimately improving employees' environmental performance.

This study perceives the mediating role of EGB in the relationship between GHRM and EP in the hospitality industry in Bangladesh, thereby accepting the fourth hypothesis. By incorporating green practices into HRM activities, organizations can foster employees' pro-environmental behavior, which leads employees to adopt environmental practices that subsequently boost their environmental performance (Tian, Zhang, & Li, 2020). The mediating role of EGB illustrates that employees act as a primary source of translating GHRM policies into tangible environmental benefits (Saeed et al., 2019). It happens because when employees receive training and incentives for sustainable practices, it ultimately contributes to their task-related and voluntary green behaviors, resulting in resource conservation and energy efficiency in hotels (Norton, Zacher, Parker, & Ashkanasy, 2017).

Lastly, the findings show the moderating role of GIC in the relationship between GHRM and EP in the hospitality industry in Bangladesh. The moderating effects strengthen the relationship, which also aligns with previous studies illustrating how GHRM and GIC contribute to sustainability outcomes. The incorporation of GHRM practices boosts employees' eco-friendly behavior, and the presence of a green innovation culture may act as a suitable environment that strengthens the positive impact of GHRM on EP. However, the institution would require additional structural changes, technological investments, or strategic shifts for implementing a green innovation culture (Tanveer, Yusliza, & Fawehinmi, 2024). Moreover, employees in organizations that adopt GIC may get the chance to cope with innovation-driven green practices, which ultimately enhance the effectiveness of GHRM on environmental performance. A recent study executed by (Tanveer et al., 2024) claimed that HRM policies may lead to inefficiencies in achieving sustainable goals when organizations rely excessively on GHRM practices without sufficient workforce readiness and proper alignment with HRM practices, thereby emphasizing the significance of GIC.

CONCLUSION

According to the findings of this study, hotels operated in Bangladesh can perform periodic assessments of their green culture through relevant dimensions to locate performance weaknesses and allocate resources accordingly. A properly established environmental culture can help these hotels track sustainability outcomes so their green initiatives directly improve environmental performance results. The whole industry can achieve both long-term success and cost efficiencies through GHRM processes and sustainability-driven culture development because these initiatives position companies as environmental stewards of the industry.

Theoretical Implications

The results of our work have made some valuable contributions to the existing AMO and RBV theories. First, based on the AMO theory, this study found a positive relationship between GHRM practices, EGB and EP. GHRM practices such as green training and development develop employees' environmentally related job-related skills, knowledge and abilities (Jabbour, Jugend, de Sousa Jabbour, Gunasekaran, & Latan, 2015) green compensation fosters employees' motivation to adopt environmentally friendly behaviors (Jabbour & Santos, 2008) green involvement practices enable employees to join sustainability initiatives which strengthens their involvement in green behaviors (Rizvi & Garg, 2021). Consistent with the AMO theory, environmentally friendly behavioral activities such as energy conservation, waste reduction, and environmentally friendly actions at work increase organizations' environmental performance (Nisar et al., 2024; Yusoff et al., 2020). Therefore, if employees in the hospitality industry are guided through GHRM practices, they will exhibit environmental

behaviors that will ultimately increase the organization's environmental performance. Furthermore, environmental outcomes can be strengthened in an environment that provides opportunities for employees to participate in sustainable innovation efforts. Thus, our positive moderating effect of GIC indicates that implementing a sustainable innovation culture creates opportunities for further improvement in this area.

The findings also contribute to RBV theory, which states that a firm can acquire its competitive advantage from its resources and capabilities that it holds internally (Wernerfelt, 1984). We have found that the application of GHRM practices, such as green recruitment, training, and sustainable performance management, can boost employees' green behavior, thereby enriching their green human capital. This, in turn, helps achieve environmental efficiency through improved environmental performance, providing a competitive advantage for hospitality organizations. It corroborates the work of Wang (2019), where RBV theory was used to state that environmental and economic performance can be enhanced through GHRM by developing green strategic capabilities within organizations. Furthermore, employees' green behavior plays a critical role in attaining environmental performance by aligning sustainability practices with business activities. This supports the principle of RBV theory, illustrating that internal capabilities such as green human capital and sustainable HRM initiatives are essential for organizational success. Therefore, this study clarifies the significant mediating role of employee green behavior. Additionally, the research findings indicate that a green innovation culture, as an internal resource, strengthens the positive effect on the relationship between GHRM and environmental performance.

Managerial Implications

Considering the importance of environmental protection and sustainable development, this study suggests that organizations in the hospitality industry invest strategically in GHRM practices to boost EP. Organizations can integrate environmentally conscious values into their recruitment and selection processes to attract top talent and meet sustainability goals. Employees' environmental awareness and necessary skills should be developed through green training and development. Providing training on green behaviors can enhance environmental consciousness. Moreover, implementing performance management systems with environmental goals helps increase employee motivation and commitment to sustainability. Any accomplishment that promotes eco-friendly behavior requires integrated reward systems because these create strong motivations for employees. Specifically, employees can engage in green initiatives and demonstrate pro-environmental conduct when organizations offer both monetary and non-financial recognition tools, such as bonus payments and recognition awards.

Directions for Future Research and Study Limitations

Although the findings provide valuable insights, the study has certain limitations that may offer directions for future research. First, the study was focused on the Bangladeshi hospitality sector, where the population size is unknown to the authors, limiting the generalizability of results to other industries and national contexts. In the future, it is recommended to conduct comparative studies across different sectors or countries for a better understanding of the mechanism between GHRM and EP. Second, the cross-sectional data limits causal inference. Future research may benefit from a longitudinal design, examining changes in employee behavior and organizational performance over time. Third, the study primarily focused on EGB and GIC as the mediating and moderating factors, but other contextual factors, such as leadership styles, regulatory pressures, or customer expectations, may also impact the GHRM-EP relationship. Fourth, while the survey approach provided valuable quantitative data, future studies might benefit from integrating qualitative insights to capture the nuances of employee perceptions and organizational culture. Addressing these limitations in the future can contribute to a more comprehensive understanding of how GHRM contributes to sustainable performance in the hospitality industry and beyond.

FUNDING: This study was funded by the Research and Innovation Center (RIC) of Khulna University, Bangladesh (Grant number: KU RIC-49/2023-2024).

INSTITUTIONAL REVIEW BOARD STATEMENT: This study was approved by the Institutional Review Board of Khulna University, Bangladesh, under protocol number [KUECC-2026-01-11]. Informed verbal consent was obtained from all participants, and all data were anonymized to protect participant confidentiality.

TRANSPARENCY: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

COMPETING INTERESTS: The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

- Abeydeera, L. H. U. W., & Karunasena, G. (2019). Greenhouse gas emission reporting mechanism for hotel industry: A case of Sri Lanka. *International Journal of Environmental Sciences & Natural Resources*, 20(4), 556042. <https://doi.org/10.19080/IJESNR.2019.20.556042>
- Aboramadan, M., & Karatepe, O. M. (2021). Green human resource management, perceived green organizational support and their effects on hotel employees' behavioral outcomes. *International Journal of Contemporary Hospitality Management*, 33(10), 3199-3222. <https://doi.org/10.1108/IJCHM-12-2020-1440>
- Aggarwal, P., & Agarwala, T. (2023). Relationship of green human resource management with environmental performance: Mediating effect of green organizational culture. *Benchmarking: An International Journal*, 30(7), 2351-2376. <https://doi.org/10.1108/BIJ-08-2021-0474>
- Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent Business & Management*, 2(1), 1030817. <https://doi.org/10.1080/23311975.2015.1030817>
- Aithal, P. S., & Jeevan, P. (2016). How service industries can transform themselves into green business industries. *International Journal of Management Sciences and Business Research*, 5(4), 150-158. <https://doi.org/10.5281/zenodo.161114>
- Alam, S. M. S., & Islam, K. M. Z. (2021). Examining the role of environmental corporate social responsibility in building green corporate image and green competitive advantage. *International Journal of Corporate Social Responsibility*, 6(1), 8. <https://doi.org/10.1186/s40991-021-00062-w>
- Ali, S. R., Masud, A. A., Hossain, M. A., Islam, K. M. Z., & Alam, S. M. S. (2024). Weaving a greener future: The impact of green human resources management and green supply chain management on sustainable performance in Bangladesh's textile industry. *Cleaner Logistics and Supply Chain*, 10, 100143. <https://doi.org/10.1016/j.clscn.2024.100143>
- Ansari, N. Y., Farrukh, M., & Raza, A. (2021). Green human resource management and employees pro-environmental behaviours: Examining the underlying mechanism. *Corporate Social Responsibility and Environmental Management*, 28(1), 229-238. <https://doi.org/10.1002/csr.2044>
- 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>
- Appelbaum, E. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. United States: Cornell University Press.
- Badawi, A. (2019). The relationship between employer attractiveness and hospitality students job pursuit intentions in terms of person-environment fit. Doctoral Dissertation, The University of Queensland, Australia.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Bashirun, S. N., Noranee, S., & Hasan, Z. (2025). Employee green behavior at work: toward organizational environmental sustainability. In sustainable green infrastructure: Materials and technologies. In (pp. 269-283). Singapore: Springer Nature.
- Batanova, V. (2024). Exploring the role of incentives and rewards in motivating employees for innovative behavior. Doctoral Dissertation, Harvard University, United States.
- Bendak, S., Shikhli, A. M., & Abdel-Razek, R. H. (2020). How changing organizational culture can enhance innovation: Development of the innovative culture enhancement framework. *Cogent Business & Management*, 7(1), 1712125. <https://doi.org/10.1080/23311975.2020.1712125>
- Biau, D. J., Jolles, B. M., & Porcher, R. (2010). P value and the theory of hypothesis testing: An explanation for new researchers. *Clinical Orthopaedics and Related Research*, 468(3), 885-892. <https://doi.org/10.1007/s11999-009-1164-4>
- 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>
- Carballo-Penela, A., Ruzo-Sanmartín, E., Álvarez-González, P., & Paillé, P. (2023). How do GHRM practices influence firms' economic performance? A meta-analytic investigation of the role of GSCM and environmental performance. *Journal of Business Research*, 165, 113984. <https://doi.org/10.1016/j.jbusres.2023.113984>
- Chen, S., Jiang, W., Li, X., & Gao, H. (2021). Effect of employees' perceived green HRM on their workplace green behaviors in oil and mining industries: Based on cognitive-affective system theory. *International Journal of Environmental Research and Public Health*, 18(8), 4056. <https://doi.org/10.3390/ijerph18084056>
- Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). United States: Wiley.
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. UK: Routledge.
- Cooper, D. R., Schindler, P. S., & Sun, J. (2003). *Business research methods*. United States: McGraw-Hill.

- Dashdondov, K., & Kim, M.-H. (2023). Mahalanobis distance based multivariate outlier detection to improve performance of hypertension prediction. *Neural Processing Letters*, 55(1), 265-277. <https://doi.org/10.1007/s11063-021-10663-y>
- Dijkstra, T. K., & Henseler, J. (2015). Consistent partial least squares path modeling. *MIS Quarterly*, 39(2), 297-316. <https://doi.org/10.25300/MISQ/2015/39.2.02>
- Elshaer, I. A., Sobaih, A. E. E., Aliedan, M., & Azazz, A. M. S. (2021). The effect of green human resource management on environmental performance in small tourism enterprises: Mediating role of pro-environmental behaviors. *Sustainability*, 13(4), 1956. <https://doi.org/10.3390/su13041956>
- Faeni, D. P., Oktaviani, R. F., Riyadh, H. A., Faeni, R. P., & Beshr, B. A. H. (2025). Green human resource management (GHRM) and corporate social responsibility (CSR) in reducing carbon emissions for sustainable practices. *Environmental Quality Management*, 34(3), e70048. <https://doi.org/10.1002/tqem.70048>
- Faeni, R. P., Feani, D. P., Pujiati, H., & Cahaya, Y. F. (2025). From green HRM to sustainability: A study of ground handling in Java with employee performance as a key link. *Annals of Human Resource Management Research*, 5(3), 305-320. <https://doi.org/10.35912/ahrmr.v5i3.2991>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Ghorbani, H. (2019). Mahalanobis distance and its application for detecting multivariate outliers. *Facta Universitatis, Series: Mathematics and Informatics*, 34(3), 583-595. <https://doi.org/10.22190/FUMI1903583G>
- Ghosh, A., & Haque, S. (2025). The impact of GHRM and EGB on organization's financial and operational performance—an empirical analysis on Indian ICT sector. *Journal of Organizational Effectiveness: People and Performance*, 12(1), 105-126. <https://doi.org/10.1108/JOEPP-08-2023-0359>
- Gill, A. A., Ahmad, B., & Kazmi, S. (2021). The effect of green human resource management on environmental performance: The mediating role of employee eco-friendly behavior. *Management Science Letters*, 11(6), 1725-1736. <https://doi.org/10.5267/j.msl.2021.2.010>
- Hair, J., & Alamer, A. (2022). Partial least squares structural equation modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027. <https://doi.org/10.1016/j.rmal.2022.100027>
- Hair Jr, J. F., Ringle, C. M., & Sarstedt, M. (2013). Editorial - partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, 46(1-2), 1-12. <https://doi.org/10.1016/j.lrp.2013.01.001>
- Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Halkos, G., & Zisiadou, A. (2025). Environmental performance in transition: An empirical examination of Greece through the EPI framework. MPRA Paper No. 125315. Munich Personal RePEc Archive.
- 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>
- Hawkins, D. M. (1980). Multivariate outlier detection. In D. M. Hawkins (Ed.), *Identification of Outliers*. In (pp. 104-114). Netherlands: Springer.
- Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical and Statistical Psychology*, 67(3), 451-470. <https://doi.org/10.1111/bmsp.12028>
- 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. <https://doi.org/10.1007/s11747-014-0403-8>
- Hopkins, J., & Bardoel, A. (2023). The future is hybrid: How organisations are designing and supporting sustainable hybrid work models in post-pandemic Australia. *Sustainability*, 15(4), 3086. <https://doi.org/10.3390/su15043086>
- Hou, D., Chan, K. C., Dong, M., & Yao, Q. (2022). The impact of economic policy uncertainty on a firm's green behavior: Evidence from China. *Research in International Business and Finance*, 59, 101544. <https://doi.org/10.1016/j.ribaf.2021.101544>
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Iftikar, T., Hussain, S., Malik, M. I., Hyder, S., Kaleem, M., & Saqib, A. (2022). Green human resource management and pro-environmental behaviour nexus with the lens of AMO theory. *Cogent Business & Management*, 9(1), 2124603. <https://doi.org/10.1080/23311975.2022.2124603>
- Irani, F., Kiliç, H., & Adeshola, I. (2022). Impact of green human resource management practices on the environmental performance of green hotels. *Journal of Hospitality Marketing & Management*, 31(5), 570-600. <https://doi.org/10.1080/19368623.2022.2022554>
- Islam, M. A., Hack-Polay, D., Haque, A., Rahman, M., & Hossain, M. S. (2022). Moderating role of psychological empowerment on the relationship between green HRM practices and millennial employee retention in the hotel industry of Bangladesh. *Business Strategy & Development*, 5(1), 17-29. <https://doi.org/10.1002/bsd2.180>
- Jabbour, C. J. C., Jugend, D., de Sousa Jabbour, A. B. L., Gunasekaran, A., & Latan, H. (2015). Green product development and performance of Brazilian firms: Measuring the role of human and technical aspects. *Journal of Cleaner Production*, 87, 442-451. <https://doi.org/10.1016/j.jclepro.2014.09.036>
- Jabbour, C. J. C., & Santos, F. C. A. (2008). Relationships between human resource dimensions and environmental management in companies: Proposal of a model. *Journal of Cleaner Production*, 16(1), 51-58. <https://doi.org/10.1016/j.jclepro.2006.07.025>
- Jamil, S., Zaman, S. I., Kayikci, Y., & Khan, S. A. (2023). The role of green recruitment on organizational sustainability performance: A study within the context of green human resource management. *Sustainability*, 15(21), 15567. <https://doi.org/10.3390/su152115567>
- Khan, K., Gogia, E. H., Shao, Z., Rehman, M. Z., & Ullah, A. (2025). The impact of green HRM practices on green innovative work behaviour: Empirical evidence from the hospitality sector of China and Pakistan. *BMC Psychology*, 13(1), 96. <https://doi.org/10.1186/s40359-025-02417-5>
- Khan, N. U., Cheng, J., Yasir, M., Saufi, R. A., Nawli, N. C., & Bazkiaei, H. A. (2022). Antecedents of employee green behavior in the hospitality industry. *Frontiers in Psychology*, 13, 836109. <https://doi.org/10.3389/fpsyg.2022.836109>

- Khanra, S., Kaur, P., Joseph, R. P., Malik, A., & Dhir, A. (2022). A resource-based view of green innovation as a strategic firm resource: Present status and future directions. *Business Strategy and the Environment*, 31(4), 1395-1413. <https://doi.org/10.1002/bse.2961>
- Kim, Y. J., Kim, W. G., Choi, H.-M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management*, 76, 83-93. <https://doi.org/10.1016/j.ijhm.2018.04.007>
- Kock, N., & Lynn, G. S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13(7), 546-580. <https://doi.org/10.17705/ijais.00302>
- Mohiuddin, M., Mesbah, U. M., Nowreen, S., & Nahian, A. (2021). Tackling climate change effects and sustainable tourism products and services development through innovation in Bangladesh. In A. Hassan (Ed.), *Technology application in the tourism and hospitality industry of Bangladesh*. In (pp. 301-315). Switzerland: Springer.
- Muisyo, P. K., & Qin, S. (2021). Enhancing the FIRM'S green performance through green HRM: The moderating role of green innovation culture. *Journal of Cleaner Production*, 289, 125720. <https://doi.org/10.1016/j.jclepro.2020.125720>
- Naqvi, S. T. A., Shaikh, O. A., & Iqbal, A. (2025). Greening the workforce: Exploring HRM practices, employee mediators, and environmental performance in the manufacturing industry. *Journal of Development and Social Sciences*, 6(4), 248-260.
- Nisar, Q. A., Haider, S., Ali, F., Gill, S. S., & Waqas, A. (2024). The role of green HRM on environmental performance of hotels: Mediating effect of green self-efficacy & employee green behaviors. *Journal of Quality Assurance in Hospitality & Tourism*, 25(1), 85-118. <https://doi.org/10.1080/1528008X.2022.2109235>
- Norton, T. A., Zacher, H., Parker, S. L., & Ashkanasy, N. M. (2017). Bridging the gap between green behavioral intentions and employee green behavior: The role of green psychological climate. *Journal of Organizational Behavior*, 38(7), 996-1015. <https://doi.org/10.1002/job.2178>
- Pham, D. D. T. (2021). *Managing green recruitment to attract pro-environmental job seekers: The combined effect of green organizational process and green organizational distinctiveness of «Handicap» principle*. United States: Springer.
- 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. <https://doi.org/10.1016/j.ijhm.2019.102392>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). *Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0: An Updated Guide and Practical Guide to Statistical Analysis* (2nd ed.). Kuala Lumpur, Malaysia: Pearson.
- Rana, G., & Arya, V. (2024). Green human resource management and environmental performance: Mediating role of green innovation—a study from an emerging country. *foresight*, 26(1), 35-58. <https://doi.org/10.1108/FS-04-2021-0094>
- Ren, S., Tang, G., & Jackson, S. E. (2021). Effects of green HRM and CEO ethical leadership on organizations' environmental performance. *International Journal of Manpower*, 42(6), 961-983. <https://doi.org/10.1108/IJM-09-2019-0414>
- 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>
- Riva, F., Magrizzo, S., & Rubel, M. R. B. (2021). Investigating the link between managers' green knowledge and leadership style, and their firms' environmental performance: The mediation role of green creativity. *Business Strategy and the Environment*, 30(7), 3228-3240. <https://doi.org/10.1002/bse.2799>
- Rizvi, Y. S., & Garg, R. (2021). The simultaneous effect of green ability-motivation-opportunity and transformational leadership in environment management: The mediating role of green culture. *Benchmarking: An International Journal*, 28(3), 830-856. <https://doi.org/10.1108/BIJ-08-2020-0400>
- 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. <https://doi.org/10.1002/csr.1694>
- Shahbaz, M. H., & Malik, S. A. (2025). Exploring the role of green intellectual capital and HRM: Green innovation and environmental performance intensify competitive advantage. *International Journal of Innovation Science*. <https://doi.org/10.1108/IJIS-09-2024-0270>
- 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, 119762. <https://doi.org/10.1016/j.techfore.2019.119762>
- Somogyi, Z. (2016). A framework for quantifying environmental sustainability. *Ecological Indicators*, 61, 338-345. <https://doi.org/10.1016/j.ecolind.2015.09.034>
- Stoimenov, V. (2025). Advancing sustainability in the hospitality industry through green skills development. *Entrepreneurship*, 13(1), 72-83.
- Subhaktiyasa, P. G. (2024). PLS-SEM for multivariate analysis: A practical guide to educational research using SmartPLS. *EduLine: Journal of Education and Learning Innovation*, 4(3), 353-365.
- Talukder, M. B. (2025). Current trends and future research directions of eco-friendly steps of hotel industry. *Revista Portuguesa de Estudos Regionais*(71), 7-18.
- Tang, G., Ren, S., Wang, M., Li, Y., & Zhang, S. (2023). Employee green behaviour: A review and recommendations for future research. *International Journal of Management Reviews*, 25(2), 297-317. <https://doi.org/10.1111/ijmr.12328>
- Tanveer, M. I., Yusliza, M. Y., & Fawehinmi, O. (2024). Green HRM and hospitality industry: Challenges and barriers in adopting environmentally friendly practices. *Journal of Hospitality and Tourism Insights*, 7(1), 121-141. <https://doi.org/10.1108/JHTI-08-2022-0389>
- Thomas, M., Maheswari, G. S., & Kavitha, M. (2025). Performance management and sustainability goals. *Cuestiones de Fisioterapia*, 54(3), 1138-1156. <https://doi.org/10.48047/4jfe3865>
- Tian, H., Zhang, J., & Li, J. (2020). The relationship between pro-environmental attitude and employee green behavior: The role of motivational states and green work climate perceptions. *Environmental Science and Pollution Research*, 27(7), 7341-7352. <https://doi.org/10.1007/s11356-019-07393-z>

- Ullah, S., Khan, F. U., & Ahmad, N. (2022). Promoting sustainability through green innovation adoption: A case of manufacturing industry. *Environmental Science and Pollution Research*, 29(14), 21119-21139. <https://doi.org/10.1007/s11356-021-17322-8>
- Umrani, W. A., Channa, N. A., Yousaf, A., Ahmed, U., Pahi, M. H., & Ramayah, T. (2020). Greening the workforce to achieve environmental performance in hotel industry: A serial mediation model. *Journal of Hospitality and Tourism Management*, 44, 50-60. <https://doi.org/10.1016/j.jhtm.2020.05.007>
- Usman, M., Rofcanin, Y., Ali, M., Ogbonnaya, C., & Babalola, M. T. (2023). Toward a more sustainable environment: Understanding why and when green training promotes employees' eco-friendly behaviors outside of work. *Human Resource Management*, 62(3), 355-371. <https://doi.org/10.1002/hrm.22148>
- Vanisri, K., & Chandra, P. P. (2025). An ethical leadership style and pro-environmental behavior: The mediating role of moral efficacy. *Gadjah Mada International Journal of Business*, 27(2), 199-219. <https://doi.org/10.22146/gamaijb.v27i2.21211>
- Veerasamy, U., Joseph, M. S., & Parayitam, S. (2023). Green human resource management and employee green behaviour: Participation and involvement, and training and development as moderators. *South Asian Journal of Human Resources Management*, 11(2), 277-309. <https://doi.org/10.1177/23220937221144361>
- Wang, C.-H. (2019). How organizational green culture influences green performance and competitive advantage: The mediating role of green innovation. *Journal of Manufacturing Technology Management*, 30(4), 666-683. <https://doi.org/10.1108/JMTM-09-2018-0314>
- Waseem, F., Mirza, M. Z., Memon, M. A., & Naseem, A. (2025). Unlocking job performance: The role of transformational leadership, AMO framework and green HRM. *Industrial and Commercial Training*, 57(3), 309-328. <https://doi.org/10.1108/ICT-07-2024-0061>
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180. <https://doi.org/10.1002/smj.4250050207>
- Yadav, K., & Nikalje, G. C. (2024). Comprehensive analysis of bioplastics: Life cycle assessment, waste management, biodiversity impact, and sustainable mitigation strategies. *PeerJ*, 12, e18013. <https://doi.org/10.7717/peerj.18013>
- Yong, J. Y., Yusliza, M.-Y., Ramayah, T., Jabbour, C. J. C., Sehnem, S., & Mani, V. (2020). Pathways towards sustainability in manufacturing organizations: Empirical evidence on the role of green human resource management. *Business Strategy and the Environment*, 29(1), 212-228. <https://doi.org/10.1002/bse.2359>
- Yusif, S., Hafeez-Baig, A., Soar, J., & Teik, D. O. L. (2020). PLS-SEM path analysis to determine the predictive relevance of e-Health readiness assessment model. *Health and Technology*, 10(6), 1497-1513. <https://doi.org/10.1007/s12553-020-00484-9>
- Yusoff, Y. M., Nejati, M., Kee, D. M. H., & Amran, A. (2020). Linking green human resource management practices to environmental performance in hotel industry. *Global Business Review*, 21(3), 663-680. <https://doi.org/10.1177/0972150918779294>
- Zacher, H., Rudolph, C. W., & Katz, I. M. (2023). Employee green behavior as the core of environmentally sustainable organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, 10(1), 465-494. <https://doi.org/10.1146/annurev-orgpsych-120920-050421>
- Zharfpeykan, R., & Akroyd, C. (2022). Factors influencing the integration of sustainability indicators into a company's performance management system. *Journal of Cleaner Production*, 331, 129988. <https://doi.org/10.1016/j.jclepro.2021.129988>